Institute of Design
Illinois Institute
of Technology

Massive Change

Adaptive Planning for Urban Sustainability under Climate Change

Charter *Draft: August 17, 2006*

Background

Global warming is now recognized as fact almost without question. Arguments to the contrary put forth twenty years ago are no longer credible, and only the most extreme critics still contend that the changes we see are natural, not caused by human activities. The question now is not whether global warming is taking place, but how serious its consequences will be.

Over the twentieth century, the Earth's average global surface temperature increased .6° Celsius (1.08° Fahrenheit). Estimates made in 2004 of the amount of warming we will experience in this century suggested a likely range of 2.4 to 5.4°C (4.3 to 9.7°F), but a more recent paper (2005) by a team of Oxford University scientists suggests a significantly hotter range of possibilities: 2 to 11°C (3.6 to 19.8°F), pushing the most likely value upward.

Darkening the picture further, the greenhouse gases already put into the atmosphere will have effects lasting centuries. The concentration of carbon dioxide and its greenhouse gas equivalents in the atmosphere before land-clearing and industrialization in the 18th century was about 265 parts per million (ppm). It is now nearly 400 ppm. To stabilize concentrations at 450-550 ppm will require major reductions in carbon emissions beginning immediately. And the 450-550 level is not safe; stabilization must be succeeded by reductions in concentration, which will take more than a century at natural rates of absorption. Warming at this magnitude is likely to be greater than any since the large and abrupt Younger Dryas event 11,000 years ago. "Warming as large and rapid as that projected for the twenty-first century might be expected to create severe problems for natural ecosystems and human societies. Indeed, evidence from past climate changes of similar magnitude point to major impacts, which, if humans had been present in numbers like today, would have been disastrous" (Pittock 2005, 21).

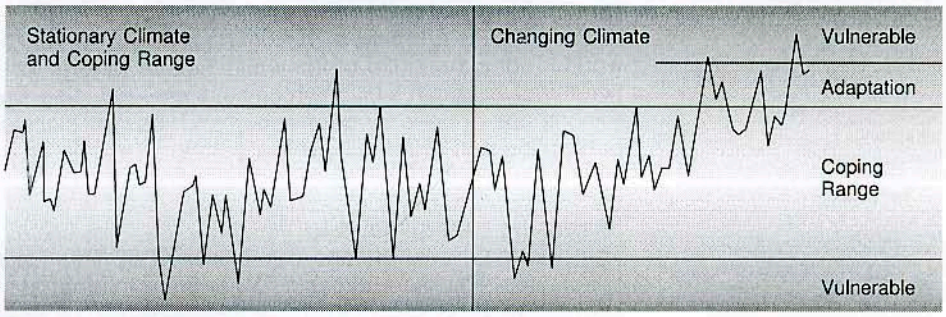

Figure 1. *Adaptation buys time by extending the coping range.* (adapted from Pittock 2005, 73)

It is too late to avoid the effects of global warming. But it is *not* too late to assemble and project strategies and tools to allow us to adapt (Figure 1). To be able to deal with the great challenges of emissions reductions that will be necessary on a global scale to mitigate the worst of the greenhouse changes—while improving or even maintaining our quality of life—will require that we rise

above the widely diverse environmental challenges that now will confront local regions and communities. Change will not be uniform. Some regions will be hotter and drier; some will be wetter. Around the world's coastlines, all habitats will experience rising waters (16 of the world's 19 cities rated as megacities in 2005 were on a coast). Weather events will become more intense and more frequent. And a host of induced plagues will follow on from these climatic disruptions. Our passport to survival will be our capacity to adapt, and the ability to plan for those adaptations will be critical.

A. Barrie Pittock. **Climate Change. Turning Up the Heat.** Collingwood, Vic., Australia: CSIRO Publishing, 2005.

Relevant Trends

Trends initiated by emerging technologies, changing environmental conditions, and evolving social change will have real impact on the situation. Among such trends are:

Population Growth
Population growth continues to soar around the world. Particularly in developing countries, but also in countries with significant immigration (such as the United States), rates of population increase are putting heavy demands on available resources. Although estimates for a final asymptote have decreased, world population is still expected to top 9 billion by 2050. It is now 6.64 billion.

Population Movements
A combination of forces is creating a movement of people from rural to urban environments. In the developing countries, it is the perception that better jobs are in the cities. In the developed countries, it is the renaissance of the city as a cultural center coupled with the progression of societies from agriculture to manufacturing to service to information economies. In 2005 for the first time, the world's population was more urban than rural.

Energy Resource Depletion
World petroleum resources are reaching the point where additions to reserves no longer equal reductions from production. Estimates for final peak production vary from 2005 to a just a few years from now. The world economy, deeply committed to petroleum as fuel resource, must meet its energy needs by other means in the near future.

Diminishing Water Resources
Water supplies are already becoming precious resources in many parts of the world. Today, one-third of the world lives in water-stressed countries; by 2050, two-thirds will be in similar circumstances—including significant parts of the U.S. As regions are strained by greater demand, new efficiencies in water distribution, use, purification and reuse will be mandatory.

Increasing expectations
The growing availability and capabilities of communications such as cellular telephones, satellite and cable TV, and the Internet are providing people with daily knowledge of living conditions, problems, products, threats and services everywhere. As the media create new and faster avenues of communication, they also raise levels of awareness and create expectations that both fuel demand and encourage willingness to change.

Internet Penetration
Computer use and Internet access grow exponentially every year. Information of encyclopedic detail can be obtained more and more easily, and complex, sophisticated processes can be used remotely. Access to high-quality communications and sophisticated computer tools are increasingly available to individuals and groups anywhere. In the United States, Internet penetration reached 67% in 2005, and some Asian and European countries surpass that.

Emerging Technologies
The pace of technological change continues to accelerate, bringing new science to industrial, institutional and governmental uses at an ever quickening pace. Most notable among many promising fields, major technological innovations can be expected in the new disciplines of molecular nanotechnology, robotics and the biosciences.

Evolving Planning Technology
Increasingly sophisticated information technology now is being routinely applied to planning and design processes, requiring organizations to "plan for how they plan". Good planning now must include means for instituting continuing review, appraisal, revision of and extension to the planning process itself.

New Relationships
Greater public mobility and access to information is changing the nature of association for many individuals and organizations. Organizations that once operated in isolation are now players in a common environment. Sometimes the emerging relationships are competitive, sometimes cooperative, and new forms of relationship can be expected to be created as conditions evolve.

Project Statement

Using Structured Planning methodology, develop concepts for a continuous, adaptive planning process for urban communities confronting climate change. Integrate conventional economic, social and physical planning with planning for environmental and energy sustainability and the disruptions expected locally from global warming. Build recursively upon Structured Planning methods, custom-tailoring them and strengthening them with other effective urban planning methods and tools. Use the city of Chicago to demonstrate elements of the process, and draw on the concepts developed in other Massive Change planning projects as applications may dictate. The proposal should:
1. shape the planning process itself as well as the objectives of its methods and tools to be adaptive over time to changing capabilities and conditions.
2. consider the full spectrum of environmental planning from anticipation to preparedness to response to recovery.
3. incorporate as part of the process best practices as they are known or being developed by organizations, agencies and planning experts within the environmental planning community.
4. anticipate and plan for networked operational cooperation among affected and spared communities locally, regionally and internationally.
5. implement procedures that seek out tools that will create economic, social and/or environmental benefits in addition to alleviating the effects of global warming.

Goals

As general guidelines the project should:

- Explore a full range of possibilities, paying especial attention to appropriate technologies and user needs.

• Include means for inspiring the development of processes, tools, systems and products—including procedures, services, activities, organizational concepts and any relevant relationships among them.

• Explore revolutionary as well as evolutionary ideas.

• Plan for communication processes by means of which other localities, regions and states can learn of and implement successful procedures.

• Consider the impacts of costs and funding thoughtfully; plans should not be unnecessarily limited, but should not be so unconstrained as to be unattainable in practicality.

• Incorporate as possible the special characteristics of design thinking in the structure and operation of the methods and tools of the planning process.

• Conceive the properties and features of the process as means to build trust and cooperation between planning, executive and user communities.

Overall, the solution should:

• Assume that the proposal can be acted upon as it is conceived. Do not underpropose on the assumption that a concept might be politically opposed.

• Demonstrate what might be achieved. The value of the proposal is in its ideas, not its certain attainability. Ideas that might not be fully attainable or feasible today may be achieved tomorrow—*if they are known.*

Resources

Resources for the project will be:

Physical:

• The facilities of the Institute of Design, including Room 514 as general meeting space at the beginning of each class session, and 3rd and 5th floors for team activities.
• Computing support from the fifth floor computer facilities.
• Equipment as necessary from ID resources.

Financial:

• None

Human:

• Planning Team
To be determined: Institute of Design graduate students

•Project Advisor:
Charles L. Owen Distinguished Professor Emeritus, Institute of Design, IIT

• Advisory Board:
Samuel Assefa Deputy Commissioner, Urban Design & Planning, City of Chicago
Sadhu A. Johnston Commissioner, Department of Environment, City of Chicago

Schedule

The project will be conducted from August 29 to December 8, 2006.

Week		Phase	Activity	Product
1	**Aug 29**	Introduction	Introduce project	
	Sep 1	Project Definition	Develop Issues & Defining Statements	
2	**Sep 5** **Sep 8**		**In-Progress Review**	Issues DefStates 1
3	**Sep 12**		Develop Modes and Activities of Function Structure	
	Sep 15		**In-Progress Review**	DefStates 2 Fn Struc 1
4	**Sep 19**	Information Development *Action Analysis*	Generate Functions, Design Factors and Solution Elements	
	Sep 22			
5	**Sep 26** **Sep 29**			
6	**Oct 3**		**In-Progress Review**	DefStates cmplete Fn Struc 2 DesFacs 1 SolnEls 1
	Oct 6	Information Development *Action Analysis 2*	Complete Functions, Design Factors and Solution Elements	
7	**Oct 10** **Oct 13**			Fn Struc complete DesFacs complete SolnEls complete
8	**Oct 17**	Information Structuring *Interaction*	Score Soln Elements vs Functions	
	Oct 20	*Structuring*		RELATN input; Information Structure

Week	Phase	Activity	Product
9 Oct 24 **Oct 27**	Concept Development	Means/Ends Analysis	
10 Oct 31 **Nov 3**		Ends/Means Synthesis	
11 Nov 7		**In-progress Review**	Initial System Elements
Nov 10			
12 Nov 14		**Presentation**	Final SysEls
Nov 17	Communication	Refine final SysEls; write report; complete illustrations	
13 Nov 21 **Nov 24**	***Thanksgiving*** Holiday		
14 Nov 28 **Dec 1**			
15 Dec 5 **Dec 8**		**Final Presentation**	Illustrated Report

Methodology

The project will be conducted using Structured Planning (See articles on the subject by Charles Owen at ***http://www.id.iit.edu*** under the *Publications* section of *Research & Ideas*:

1. *Context for Creativity,* 1991.
2. *A Critical Role for Design Technology,* 1993.
3. *Design, Advanced Planning and Product Development,* 1998.
4. *Structured Planning,* 2001.

Also, see the book by Charles L. Owen available at the Institute of Design: **Structured Planning. Advanced Planning for Business, Institutions and Government. *Notes on the Process with Summary Pages and Examples,*** 2006).

Issues

Consider the following topics as initial issues to be investigated. Supplement them with additional issues as information is developed during the first phase of the project.

Technology. What approach should be taken toward the use of emerging technologies and advanced science and engineering concepts in plans?

Adaptivity. How should elements of the planning process be prepared to respond to evolving environmental threats and emerging technological capabilities?

Networking. What provision should be made toward partnering with other cities, regions, suppliers of funding, technology, goods, etc.?

Time of Introduction. For what time frame should the planning process be scheduled for implementation?

Means of Introduction. How should the process be introduced to facilitate acceptance and implementation?

Public/Private Sector Relationships . How should the planning process be positioned with respect to authority/responsibility for implementation and operation?

Concept Communication. How should the idea of the planning process and its individual methods and tools be brought to public and institutional attention?

Cost. How should expected costs of the process and its potential plans be approached?

Disaster Contexts. What expectations should be set for extreme problems and solutions to be considered?

Self-Sufficiency. What level of planning self-sufficiency should be sought for communities and other political entities?

Defining Statement

ISSUE TOPIC

Self Sufficiency

PROJECT
Urban Planning for Climate Change

ORIGINATOR
Eric Wilmot

CONTRIBUTORS
Irene Chong, Yoo Jung Ahn, Sang-Ho Lee
Erik Van Crimmin

SOURCE/S
1. Frumkin, Frank, Jackson. Urban Planning and Public Health. pp 204-208

2. Diamond, Jared. Collapse: How Societies Choose to Fail or Succeed. New York: Penguin Publishing, pp-420-425.

QUESTION AT ISSUE

What level of planning self-sufficiency should be sought for communities and other political entities?

POSITION

objective An urban policy SHOULD weigh the viability of resources in the context of its locale, social trends and ability to support for a large percentage of the populations needs.

ALTERNATE POSITIONS

constraint Planning should account for the ability to support a smaller percentage of the population's needs (specialization) while depending on strategic partnerships to maintain advanced standards of living.

BACKGROUND AND ARGUMENTS

While ultimate self-sufficiency infers isolation, the context of self sufficiency in urban planning lies in an economic argument. Emerging markets and developing economies may rely more heavily on outside investment than a more developed service based economy. Developing markets must usually deal with issues of overpopulation and public health on a federal level whereas developed communities and infrastructures are less reliant on high level political support excluding aid for major catastrophe.

It is in this context then, that the case for self-sufficiency planning must weigh the value of natural and human resources with respect to economic and political partnerships. The cause-and-effect relationships that promote change within communities and larger societies must also trigger the re-evaluation of the values within the current, or projected social context.

Defining Statement

ISSUE TOPIC

Public/Private Sector

PROJECT
Urban Planning for Climate Change

ORIGINATOR
Eric Wilmot

CONTRIBUTORS
Irene Chong, Yoo Jung Ahn, Sang-Ho Lee
Erik Van Crimmin

SOURCE/S
1. Linden, Eugene. The Future in Plain Sight
2. Jacobs, Jane. The Death and Life of Great American Cities.
3. McDonnough/Braungart. Cradle to Cradle
4. Hart, Stuart; Porter, Michael; Van Der Linde, Claas; et al. Harvard Business Review
5. Lovins, Hunter/Armory, Hawken, Paul. Natural Capitalism
6. Brown, Lester. Plan-B 2.0
7. Frumkin, Frank, Jackson. Urban Sprawl and Public Health.

QUESTION AT ISSUE

How should the planning process be positioned with respect to authority/ responsibility for implementation and operation?

POSITION

constraint Public and Private authorities MUST collectively prioritize action plans that target issues that most jeopardize the stability of an urban center.

ALTERNATE POSITIONS

objective The development of the plan SHOULD be the sole responsibility of public authority while the execution of the plans provisions remains the responsibility of the private sector.

objective Public and Private authorities SHOULD collectively prioritize action plans that evaluate threats within the hierarchy of issues on a global context.

BACKGROUND AND ARGUMENTS

The interweaving of political pressures, social values, and business influences complicate and muddy the goals and control of an urban planning strategy. The planning task becomes even more complex when it is forced to balance the traditional expectations of economic growth and prosperity with social and environmental factors that challenge the sustainability of the urban center.

With more of earth's population living in cities than in rural areas, planning has new challenges in balancing growth within legislation and social expectations on topics such as emissions control, continued water quality, stabilizing fuel costs alternative technologies, and supplying food and shelter for a shifting and expanding population in the face of depleting resources.

The interaction between the public and private sector is a key element to insuring that the priorities of urban growth uphold the social and environmental needs to sustain that growth. Renewable technology research, by-product coordination programs, energy exchange commissions, and similar development agendas all play an interesting role between the public and private sectors. Continued development of NGO's and public-to-private investments will provide balanced opportunity for R&D agenda's to plan for triple bottom line solutions that benefit objectives of both the public and private sector needs.

Defining Statement

ISSUE TOPIC

Population Control

PROJECT

Adaptive Planning for Urban Sustainability

ORIGINATOR

Yoo-Jung Ahn, Sep. 11, 2006

CONTRIBUTORS

Irene Chong, Sang Ho Lee
Erik Van Crimmin, Eric Wilmot
John Montgomery

SOURCE/S

Lester R. Brown. **Plan 2.0 : Rescuing a Planet Under Stress and Civilization in trouble.** New York : W. W. Norton & Company, 2006.

Cynthia Rosenzweig, William D. Solecki. **CLIMATE Change and a Global City Environment,** April 2001.

Steve Connor. **Overpopulation is main threat to planet**, 7 January 2006.

Brian C. O'Neill, F.L. MacKellar, and W. Lutz. **Population and Climate Change** , Cambridge, U.K.: Cambridge University Press, 2001.

QUESTION AT ISSUE

What approach should be taken concerning population change?

POSITION

directive A population management plan ought to monitor the causes of the population growth.

ALTERNATE POSITIONS

objective Population control should not be monitored; it should be assumed the trend of decreasing population in first world countries will continue.

BACKGROUND AND ARGUMENTS

Some scientists say that "Population is the elephant in the climate change room." Theoretically, for global warming to be averted, the world population must decrease by two-thirds, while people maintain the same lifestyle standards. However, others think we don't need to worry about population growth because it will be controlled naturally considering that the population of first world countries is decreasing now. Although there are many debatable aspects, it is widely accepted that mankind is the main cause of global warming.

Aside from the growth of population itself, urbanization is the dominant demographic trend of our time. In 1900, 150 million people lived in cities. By 2000, it was 2.9 billion people, a 19-fold increase. By 2007 more than half of us will live in cities—making humans, for the first time, an urban species. Cities require a concentration of food, water, energy, and materials that nature cannot provide. Concentrating these masses of materials and dispersing their byproducts in the form of garbage, sewage, and as pollutants in air and water is challenging city managers everywhere.

Climate change is the ultimate stress on cities where the dense population puts a tremendous demand on land and water resources. Approximately 30 percent of the metropolitan land area has been fully converted for urban use, with significant reduction in vegetative cover. This will accelerate global warming. Therefore a population control plan should be able to respond to the many-faceted demands of global climate change and demographic processes. It should consider interactions between the environment and demo-graphic processes, such as population growth, aging, urbanization, and changes in living arrangements. Also this plan should provide solutions for an adequate food, shelter, energy supply and pollution prevention.

Defining Statement

Issue Topic: **Networking**

Number Identifier 3

Project Adaptive Planning for unban sustainabilty

Originator Sang-Ho Lee

Contributors Irene Chong
Erik Crimmin
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Eric Wilmot

Source/s

Team deliberations

Question at Issue

What provision should be made toward partnering with other cities, regions, supplies of funding, technology, goods, etc?

Position

- ☐ Constraint
- ☒ Objective
- ☐ Directive

Alignments with public and private institutions **should** be made for the efficient procurement and transfer of knowledge based on the levels of cities' sustainability.

Alternative Positions

- ☐ Constraint
- ☒ Objective
- ☐ Directive

Government **should** organize all the cities or states in one partnership network and operate it as a control center.

- ☐ Constraint
- ☐ Objective
- ☒ Directive

Cities **ought to** build solid infrastructures without partnering.

Background and Arguments:

Many governmental non-profit organizations encourage public and private sectors nationally as well as internationally to participate in the alignments or partnership programs, but the programs are limited to environmental conservation. Conservational alignments are not enough to complete an adaptive plan. To reinforce cities' sustainability to cope with climate change, cities should have alignments with other cities for the efficient procurement and transfer of knowledge in threatening situations to minimize loss of lives and property, as well as rebuild after.

Government centered network can not meet fast and efficient partnership activities. It is obvious the bigger organization, the slower communication. City centered network isn't the best choice either because it requires lots of money and time. The alignments should be customized between cities to gain a maximum efficiency with a minimum effort because different cities or regions have the different levels of sustainability in climate change.

For smooth operation, the planners should be aware of the fact that because private institutions would be reluctant to cooperate with public institutions without reliable estimation of the benefits and possible losses, government will have to build its credibility by reducing the barrier of doubt, confusion and uncertainty and at the same time offering reasonable incentives.

Defining Statement

Issue Topic: **Time of Introduction**

Number Identifier

Project: Adaptive Planning for unban sustainabilty

Originator: Sang-Ho Lee

Contributors: Irene Chong, Erik Crimmin, John Montgomery, Yoo Jung Ahn, Eric Wilmot

Source/s

(India, China spike global CO2 rate by 15%, May 10, 2006 THE FINANCIAL EXPRESS)

Question at Issue

For what time frame should the planning process be scheduled for implementation?

Position

- [x] Constraint
- [ ] Objective
- [ ] Directive

Adaptive planning **must** be quickly implemented and customized based on the levels of public awareness, regional difference and urgency.

Alternative Positions

- [ ] Constraint
- [ ] Objective
- [x] Directive

To avoid complications occurring because of different plans in different cities, only one time frame **ought to** be planed for the entire country.

- [ ] Constraint
- [ ] Objective
- [ ] Directive

Background and Arguments:

The global Co2 curve is sharply going up by the developing nations, particularly China and India. Unlike the United States, the largest Co2 emitter that operates many governmental organizations with policy supports to reduce Co2 level, "China, which is already the second largest polluter behind the United States, increased its emissions by 33 percent between 1992 and 2002, and India's emissions grew 57 percent in the same period." (India, China spike global CO2 rate by 15%, May 10, 2006 THE FINANCIAL EXPRESS) Nobody will be free from climate change. Waiting is wasting.

To implement the adaptive planning, the operators must have strong public support with awareness of urgency and understanding of climate change issues. To achieve this goal, the roles of media and campaigns are essential to carry out urgent messages such as the desertification, rising sea levels and serious disasters to get core attention from people.

The time frame of implementation must be flexible but tactical. The time table of implementation must be customized based on the differences of different regions or awareness, and the levels of urgency. Some regions have high infrastructures and historically safe from disasters, so the people tend to ignore or no regard for global climate change. On the other hand, because of regional disaster experience recently, some people highly aware of climate change issues. Based on the above two different region situation, first region needs to implement adaptive planning in a reactive way. The second region needs to implement proactively and quickly.

PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
Yoo-Jung Ahn, Sep. 11, 2006

CONTRIBUTORS
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John Montgomery

SOURCE/S

Lester R. Brown. **Plan 2.0 : Rescuing a Planet Under Stress and Civilization in trouble.** New York : W. W. Norton & Company, 2006.

Alok Jha, Energy Bulletin, **Energy review ignores climate change 'tipping point',** 4 Sep. 2006.

Al Gore's documentary, **An inconvenient truth**

Kyoto Protocol

http://www.energybulletin.net/
http://www.oilcrisis.com/
http://www.climatecrisis.net/
http://www.globalwarming.org/

QUESTION AT ISSUE

What approach in planning should be taken concerning energy use?

POSITION

constraint A new alternative energy plan must be adopted not only to control global warming, but also to prepare for the depletion of fossil fuel.

ALTERNATE POSITIONS

constraint Reducing the use of fossil fuel and saving energy must be the main priority to achieve a sustainable energy system.

objective Energy use regulations should be considered.

BACKGROUND AND ARGUMENTS

Climate change is the result of people's energy use. Currently, fossil fuels are the main energy source of our society and the consumption of oil has increased 1.6 % per year during the last 10 years. Oil consumption has caused serious global warming, and as temperature rises, energy use increases.

Oil production has peaked at a time when the world is facing many challenges, such as rising temperatures, falling water tables, and numerous other damaging environmental trends. Several prominent scientists now believe that the oil peak is imminent and the oil production will turn downward. This means that the development of alternative energy is needed urgently.

According to a British energy expert, Peter Smith (a professor of sustainable energy at the University of Nottingham), the world only has 10 years to develop and implement new technologies to generate clean electricity before climate change reaches a point of no return. His scientific opinion is that we have a ceiling of 440 parts per million (ppm) of atmospheric carbon before there is a tipping point, a step change in the rate of global warming.

Today, many countries are trying to replace conventional energy source through the development of alternative energy sources such as biofuel, solar heat, and nuclear fusion. Although renewable energy is now being questioned on economic and environmental grounds, we should decrease our reliance on a fossil-fuel-based energy system as soon as possible and make a clean and sustainable eco-energy planning. Also governments and cities should make regulations to control constant energy supply and prevent green house effect caused by excessive energy use.

Defining Statement

Issue Topic: Technology

Number Identifier

Project

Adaptive Planning for Climate Change

Originator

Irene Chong

Contributors

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Erik Crimmin
Sang-ho Lee
Eric Wilmot

Source(s)

Questions at Issue

What approach should be taken toward the use of emerging technologies and advanced science and engineering concepts in plans?

Position

- [ ] Constraint
- [ ] Objective
- [x] Directive

Technologies used ought to be appropriate for the context of the user (i.e. administration, planning committees, federal departments). Technologies should be dynamic.

Alternative Positions

- [ ] Constraint
- [ ] Objective
- [x] Directive

Technologies ought to be considered in terms of their life cycle, taking into considertaion their benefits, impact and costs.

- [ ] Constraint
- [x] Objective
- [ ] Directive

Only the least expensive technology solutions should be used.

Background and Arguments

As climate change affects urban centers, we want to be able to implment new emerging technologies to minimize the impact, which takes time to understand, adapt and implement. To effectively realize its full benefits, there is a learning curve that must be mastered first. Once it is understood how a new piece of technology can be utilized, there is a transition period before it can be integrated into existing infrastructure. If this can be done, the degree to which it is done well can hinge on a number of critera such as knowledge, time and financial resources.

Rapidly changing technologies make it difficult to keep up to date. Given this, technological solutions should be both dynamic and modular. This would allow for continuous improvement and change. The cost of continual improvement to the system would be kept low, with minimal interruption and impact to the surrounding environment.

Evaluative tools should be able to provide a more holistic perspective, and consider both short-term and long-term benefits and costs. Before deciding on whether it is a feasible solution, implementation must warrant overall benefit when weighted against existing options.

It is most desirable to keep the cost of technology implementation and maintenance low. However, selecting the cheapeast option may not be the best. Lower price point could mean a number of things of shortcomings, including capability limitations, shorter lifespan and incompatibility with other systems. So though cost should be an important factor in deciding which technologies to use, it should not be the sole factor.

Defining Statement

Issue Topic: Evaluation Process

Number Identifier

Project
Adaptive Planning for Climate Change

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Sang-ho Lee
Eric Wilmot

Source(s)
www.wmich/edu/evalctr/checklists/papers/insidescap/pdf.

www.wmich.edu/evalctr/checklists/dd_checklist.PDF

Questions at Issue

How can it be ensured that the evaluation process will be democratic?

Position

- [ ] Constraint
- [x] Objective
- [ ] Directive

There should be a check process to ensure that all stakeholder's interests are included.

Alternative Positions

- [ ] Constraint
- [x] Objective
- [ ] Directive

- [ ] Constraint
- [ ] Objective
- [ ] Directive

The evaluation process should be completed and made public to all interested parties in a timely manner, so that each can respond accordingly to fit within the given time constraints of the Massive Change plan.

Background and Arguments

To properly evaluate anything, the process should be inclusive of all opinions and positions from different stakeholders to ensure a democratic evaluation process. This is important to ensure a balanced and holistic outcome is achieved.

The evaluation process should have several characteristics. It must must be free of bias and not favor one party over another; it must be inclusive and consider the values and interests of other stakeholders; the evaluation should encourage further discussion amongst the stakeholders and provide opportunity for proper and fair deliberation.

Defining Statement

Issue Topic: Definition of Success

Number Identifier

Project
Adaptive Planning for Climate Change

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Contributors
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Irene Chong
Erik Crimmin
Sang-ho Lee
Eric Wilmot

Source(s)
www.benchnet.com/wib.htm

en.wikipedia.org/wiki/benchmarking

http://reports.eea.europn.eu/Environmental_issues_No_20/en/envissue20.pdf

Questions at Issue

How can the definition of a successful plan be measured?

Position

- [ ] Constraint
- [x] Objective
- [ ] Directive

The adaptive planning plan should have benchmark to measure whether an outcome was successful or not.

Alternative Positions

- [ ] Constraint
- [x] Objective
- [ ] Directive

The planned success outcomes should be spread intermittently along the defined timeline of the adaptive plan.

- [ ] Constraint
- [ ] Objective
- [ ] Directive

Background and Arguments

To determine whether a plan has succeeded or not, there has to be measured or quantified in some way. Benchmarking is way this can be done. This is a processby which the very best is used as a standard by which to measure the success of a product or process.

The benefits of benchmarking is that it is a form of quality control. By seeing where some fails to meet the optimal, it can be quickly assessed where the weak spots are that require improvement. When dealing with environmental assessments, this helps a planner determine whether an implemented solution was effective, its impact, how it should be improved if necessary and whether it can or should be repeated.

Defining Statement

Issue Topic: Adaptability

Number Identifier

Project
Adaptive Planning for Climate Change

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Erik Crimmin
Sang-ho Lee
Eric Wilmot

Source(s)

www.mors.org/meetings/cbp/presentations/hoffman__mon.pdf

Questions at Issue

How shold elements of the planning process be prepared to respond to evolving environmental threats and emerging tehcnolgical capabilities?

Position

- [X] Constraint
- [ ] Objective
- [ ] Directive

Adaptive plannign for climate change must be flexible enough to accomodate the continuously fluctuating environment.

Alternative Positions

- [X] Constraint
- [ ] Objective
- [ ] Directive

Adaptive planning for climate change plan must take the current context into careful consideration, as there is no unique situation.

- [ ] Constraint
- [ ] Objective
- [ ] Directive

Background and Arguments

Adaptivty is the ability to be flexible and respond to fluctuating forces. It is important to to be adapatable, because the environmental, economic and social environment is constantly changing, and their threats can be forecasted, but never predicted with absolute precision. They can be tricky to diagnose, and sometimes random. Adaptive planning for climate change should incorporate a range of inputs, so that it reflects the current economical, social and environmentla conext. It should plan for a range of threats, that can be characterized by intensity, severity, location etc.

The benefits of being adaptable is that it allows for faster development and modifications. It can improve efficiency and effection during the planning process. If the content is changing frequently, there should be regularly harmonization of content and intitatives at all levels of the plannign process.

Defining Statement

ISSUE TOPIC

Disaster Context

PROJECT

Adaptive Planning for Urban Sustainability

ORIGINATOR

Yoo-Jung Ahn, Sep. 04, 2006

CONTRIBUTORS

Irene Chong, Sang Ho Lee
Erik Van Crimmin, Eric Wilmot
John Montgomery

SOURCE/S

Team deliberations

QUESTION AT ISSUE

What expectations should be set for extreme problems and solutions to be considered?

POSITION

constraint Urban centers must plan systems for natural disasters such as storms, tidal waves, flood damage, and the encroachment of our oceans on the shoreline.

ALTERNATE POSITIONS

objective A strong network with other countries or cities should be developed to plan and prevent disasters. Member nations or cities will assist and support each other in response to disasters.

BACKGROUND AND ARGUMENTS

Climate change has caused many problems including the increase of flooding incedences and draught, eroding coast line, and spreading disease. These problems threaten not only undeveloped countries, but also urban living and sustainability. Eliminating the cause of the problem is the best way to prevent the disaster; however, climate change is a huge issue. Therefore the goal may be reached only through a great deal of effort all over the world. To minimize the effects of global warming and prevent or minimize the damage from disaster, a well-organized planning process is highly required.

Emergency prepareness includes many substantial action plans such as evacuation planning, technological warning systems, crisis management, communication system...etc. The Government should allocate a portion of the budget to these systems and also design a long term plan. It will require great effort and expense, as well as collaboration between many countries and organizations. Often, the largest obstacle to completing such a project is that of citizens (the public), due to their indifferance to environmental issues. Therefore, speading knowledge regarding environmental issues and their impact is very important to the success of the plan. Some good methods of spreading this information is to advertise environmental issues, and conduct emergency disaster simulations.

As if future climate change and ecological disasters are not enough, there is also the issue of current environmental disasters and the acceleration of climate change. It is for this reason that the spread of global knowledge of issues including global warming, disaster prevention and recovery preparation, and crisis control development must be actively planned and developed now. Investment must be made in the R&D of evacuation planning, technological warning systems, post disaster relocation and communication systems. Financial assistant plan such as cleaning up disaster areas and rebuilding after the disaster should be included.

Defining Statement

ISSUE TOPIC

Issue Topic Title

PROJECT

Urban Adaptivity to Climate Change

ORIGINATOR

Erik Van Crimmin

CONTRIBUTORS

Eric Wilmot
Sang-ho Lee

SOURCE/S

http://www.psandman.com
http://www.slate.com/id/2148772/entry/2148773/
"Environmental Education & Communication for a Sustainable World,"…

QUESTION AT ISSUE

How should the idea of the planning process and its individual methods and tools be brought to public and institutional attention?

POSITION

objective We should take a mediated, slightly ambivalent approach to best attract public attention to topics of risk control.

ALTERNATE POSITIONS

objective We should rely on educating the public about all aspects of planning.

objective We should attempt to scare the public into action while implicitly telling them to trust us.

BACKGROUND AND ARGUMENTS

Communication research shows that people are naturally ambivalent. This means that if we hear "global warming is going to kill us all," our first response is to downplay global warming's significance and search for alternative evidence. This could explain the ease of which the American public has accepted views that deviate from the science behind climate change ("We haven't been studying it long enough," etc.), and why slightly ambivalent comments such as 'We might get hit again' bear such weight.

There are multiple forces that concept communication will have to deal with. Because chronic conditions do not elicit an immediate response, it will be hard to get the public to back gradual changes that they are paying for out-of-pocket. A similar issue is detectability: if global warming changed the color of the air, people would be more responsive to it. One attribute of global warming that works in communication's favor is the fact that we as a nation are not in control of the entire problem; that India and China's actions negatively affect our lives is likely to cause people to care more about the issue.

For more concrete behavioral changes, a two-pronged method similar to the recycling plan should be considered (1. Get people to go to a recycling center once 2. Reinforce their behavior).

Defining Statement

ISSUE TOPIC

Means of Introduction

PROJECT
Urban Adaptivity to Climate Change

ORIGINATOR
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SOURCE/S

http://www.psandman.com
http://www.slate.com/id/2148772/entry/2148773/
"Environmental Education & Communication for a Sustainable World,"…

QUESTION AT ISSUE
How should the process be introduced to facilitate acceptance and implementation?

POSITION

constraint The process must create a public emotional attachment to the goals and missions of the plan while taking a practical user-centered approach.

ALTERNATE POSITIONS

objective An education-based approach using popular media should be followed.

objective The process should be dealt with strictly as a regulatory issue through taxation and government spending.

BACKGROUND AND ARGUMENTS

Brand identity has never been more important to companies than it is today, and it will be vital to the successful introduction of this plan. Establishing a brand and mission that Americans identify with and are emotionally connected to leads to a population who is willing to pay for the plan's implementation.

The strongest for-profit brands (Coca-Cola, Disney, Harley Davidson) elicit an emotional response (reliability, trust, toughness) that gives people a reason to pay more for their products. People will need to feel a similar kind of emotional attachment to this plan. Without this emotional connection, public officials supporting our plan—and spending money on it—will have to deal with voters unhappy with tax increases.

Additionally, it will be necessary for people to know exactly what they can do to contribute and how what they do affects the bottom line. The actions they should take need to be obvious and there needs to be effective incentives in place in order to maximize participation (unlike the battery recycling program, which passed laws against battery disposal but never truly got in touch with the public). For this, user centered research will prove vital.

PROJECT
Adaptive Planning for Urban Sustainability

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SOURCE/S
Jeremy Leggett **The Empty Tank.** New York: Random House,2005.

Team Deliberations

QUESTION AT ISSUE

How should geographic limitations be balanced?

POSITION
objective Geographic limitations should be a major factor in future urban planning.

ALTERNATE POSITIONS
objective Efforts should be made to overcome geographic limitations to maintain customary public expectations.

BACKGROUND AND ARGUMENTS

Our society has grown accustomed to a lifestyle indifference to geographic limitations and distances. Our routine personal consumption and our global economy include large doses of products from far outside the geographic area we occupy – even from halfway around the world. Modern technology has allowed almost every sector of our society to essentially ignore most geographic boundaries and limitations.

This has had both very positive and very negative consequences on the economy and culture, but exclusively negative impacts on the world's ecosystem. Our habits over this last century of significant economic and technological growth have both fueled that growth and fueled the massive climate change that is becoming increasingly evident. Unfortunately, at the same time that we are forced to make transitions to mitigate and adapt to climate change, we will also have to adapt to rapidly increasing fuel costs and the corresponding reduction in access to those products that are in conflict with natural geographic limitations.

The world-wide growth in the global economy that this practice has allowed, has clearly benefitted many, including most 3rd world economies. There are many good reasons to perpetuate these practices to maintain this growth. Unfortunately, the growing climate change crisis, combined with the looming fossil fuel shortage, will not allow this current practice.

As much as we may try to hold on to unrealistic expectations of maintaining past habits, massive change, the climatic conditions, and shrinking availability of fossil fuel will force change. We must plan for the least disruptive path to making the needed adaptations.

Defining Statement

ISSUE TOPIC
Prioritization

PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
John Montgomery

CONTRIBUTORS
Irene Chong
Yoo Jung Ahn
Sang Ho Lee
Erik Van Crimmin
Eric Wilmot

QUESTION AT ISSUE

How should the plan be organized to set priorities?

POSITION

objective The plan should set priorities based on analysis of climatic limitations and historic lessons.

SOURCE/S

Jared Diamond **Collapse, How Societies Choose to Fail or Succeed.** Viking Penguin, 2005.

Group Deliberations

ALTERNATE POSITIONS

objective The plan should set local cultural expectations as the primary influence for prioritization.

BACKGROUND AND ARGUMENTS

The problems the earth is now facing demand that decisions be made based on the facts at hand for climatic limitations and historic examples, rather than on emotions or cultural bias.

New Orleans Lower 9th Ward is a prime model. The residents and supporters of the area naturally have significant pride of ownership and have a strong desire to resurrect their neighborhood. However this ignores the geological and climatological facts that have put the Lower 9th Ward in its current condition and have done so before with Hurricane Betsy in 1965. This is the lowest area of New Orleans and was originally a cypress swamp. Returning the area to a wetlands area provides a natural buffer for anticipated weather events and avoids putting a very vulnerable population in harm's way once again.

In addition to this most recent example, history is full of similar examples of peoples placing their cultural preferences above the realities of geological and climatological facts – to the great detriment of those civilizations. The Norse settlements of Iceland and Greenland are only two of many such examples.

Priorities must be set for long term goals and recognize the limitations of geography, climate, and technology. To the greatest extent possible, cultural biases must be ignored.

PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
John Montgomery

CONTRIBUTORS
Irene Chong
Yoo Jung Ahn
Sang Ho Lee
Erik Van Crimmin
Eric Wilmot

QUESTION AT ISSUE

What should be expected with respect to legacy or longevity for the campaign?

POSITION

constraint The campaign must be positioned to take the most advantage of longevity.

SOURCE/S

Jared Diamond **Collapse, How Societies Choose to Fail or Succeed**. Viking Penguin, 2005.

STERN REVIEW: The Economics of Climate Change

Jeremy Leggett **The Empty Tank.** New York: Random House, 2005.

Mark Lynas **Rising Tide, The Truth About Our Climate Crisis.** New York: Picador, 2003.

ALTERNATE POSITIONS

objective The plan should be recognized as merely transient.

BACKGROUND AND ARGUMENTS

Whether or not the earth faces certain and significant changes in global climate is no longer a question – it has aready begun to happen and will continue. The key questions are how quickly those changes will occur, how far reaching the changes will be and how quickly can mankind make changes in his lifestyle that reduce the necessary adaptation.

These changes are not temporary, and neither must be the solutions. Urban cities must develop a plan that is robust and long lasting. It must have elements that prevent backsliding as witnessed in any number of past societal histories (Greenland, Dominican Republic, and recent US environmental policies).

The plans will require deep national and international co operation in many areas. Because our current actions have long lead times on changes in the climate, immediate strong action is required.
.
Quoting from the Stern Report, "The benefits of strong, early action on climate change outweigh the costs." Additionally, "the costs [of dealing with climate change] will be manageable, and there will be a wide range of opportunities for growth and development along the way." To do anything less exposes us to great risks in disruption to economic and social activity, on a scale of the great wars and the world-wide economic depression of the first half of the 20th century.

Transient efforts toward climate change adaptation will exacerbate the problems and unnecessarily delay solutions – ultimately making the task much worse. The adaptive plan needs to me immune, as much as possible, from politicalization of the goals.

Defining Statement

ISSUE TOPIC

Scalability

PROJECT

Adaptive Planning for Urban Sustainability

ORIGINATOR

John Montgomery

CONTRIBUTORS

Irene Chong
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Sang Ho Lee
Erik Van Crimmin
Eric Wilmot

SOURCE/S

Group Deliberations

QUESTION AT ISSUE

How should the plan be positioned to take advantage of scalability?

POSITION

constraint The plan must be developed to take large advantage of scalability.

ALTERNATE POSITIONS

objective The plan should take advantage of scalability in part, but generally should be more specialized in order to be most effective.

BACKGROUND AND ARGUMENTS

To be most effective, any plan for climate adaptivity needs to be structured to work on problems of almost any scale with essentially the same set of rules and policies. The problems associated with global climate change are by definition global in scope and must be addressed in such a manner. Cities must develop strategies that work throughout a wide range of problems.

Although there will always be reasons to make solutions local in scale or specialized in scope, this limits the solutions in their ultimate potential for effecting positive change.

Defining Statement

PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
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Eric Wilmot

QUESTION AT ISSUE

How should transportation priorities be balanced?

POSITION

constraint There must be a robust policy for a strong and swift transition toward much higher use of public transit over private automobile use.

SOURCE/S

Jeremy Leggett **The Empty Tank.** New York: Random House,2005.

Donald Shoup **The High Cost of Free Parking.** APA Planners Press, 2005.

Paul Salopek, *Twilight of the Oil Age,* **Chicago Tribune,** July 30, 2006

Oral History of Serge Chermayeff, Interview by Betty J. Blum. Chicago: The Art Institute of Chicago, 1986

ALTERNATE POSITIONS

constraint The program must recognize the unquestionable preference among the public for the convenience and status of private transportation choices.

BACKGROUND AND ARGUMENTS

The shortage of oil is not directly related to global climate change, but will have simultaneous and significant negative impact on life in cities.

The OPEC oil embargo of the '80's actually caused a very small reduction in gasoline availability, but produced a very large shock to society. While the decline in availability of petroleum is not directly related to global climate change, it is a very significant global event occurring simultaneously. The pending shock of peak oil could easily generate a reaction in scale with the depression of the first half of the 20th century – or worse.

The true cost of petroleum today is already in the range of $8 $10 per gallon, with the additional cost paid indirectly, through higher taxes and a ballooning national debt. The high use of private auto use and associated parking places an immense externalized burden on development of cities in the range of hundreds of millions of dollars.

Public transit can and must take on a much larger role in moving citizens around the city. As Serge Chermayeff, one of the early leaders at ID, said in his 1985 interview, an automobile spends "two-third of its life, dead, parked...Things that carry people must move all the time. We cannot afford a dead vehicle."

There is an unquestionable preference among many for the convenience of automobile use as a primary transportation vehicle. However, we can no longer afford the disproportionate amount of greenhouse gasses this adds to our planet.

Defining Statement

ISSUE TOPIC

Scalability

PROJECT

Adaptive Planning for Urban Sustainability

ORIGINATOR

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SOURCE/S

Group Deliberations

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Defining Statement

ISSUE TOPIC
Prioritization

PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
John Montgomery

CONTRIBUTORS
Irene Chong
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Eric Wilmot

QUESTION AT ISSUE

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SOURCE/S

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Group Deliberations

ALTERNATE POSITIONS

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BACKGROUND AND ARGUMENTS

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PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
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Irene Chong
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Erik Van Crimmin
Eric Wilmot

SOURCE/S
Jeremy Leggett **The Empty Tank.** New York: Random House,2005.

Team Deliberations

QUESTION AT ISSUE

How should geographic limitations be balanced?

POSITION
objective Geographic limitations should be a major factor in future urban planning.

ALTERNATE POSITIONS
objective Efforts should be made to overcome geographic limitations to maintain customary public expectations.

BACKGROUND AND ARGUMENTS

Our society has grown accustomed to a lifestyle indifference to geographic limitations and distances. Our routine personal consumption and our global economy include large doses of products from far outside the geographic area we occupy – even from halfway around the world. Modern technology has allowed almost every sector of our society to essentially ignore most geographic boundaries and limitations.

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As much as we may try to hold on to unrealistic expectations of maintaining past habits, massive change, the climatic conditions, and shrinking availability of fossil fuel will force change. We must plan for the least disruptive path to making the needed adaptations.

Defining Statement

ISSUE TOPIC

Cost

PROJECT

Adaptive Planning for Urban Sustainability

ORIGINATOR

Yoo-Jung Ahn, Sep. 04, 2006

CONTRIBUTORS

Irene Chong, Sang Ho Lee
Erik Van Crimmin, Eric Wilmot
John Montgomery

SOURCE/S

Team deliberations

QUESTION AT ISSUE

How should expected costs of the process and its potential plans be approached?

POSITION

objective Cost should include environmental, social, and economic factors and should be estimated by objective data.

ALTERNATE POSITIONS

objective Cost should include only normal economic factors of business to allow for plan evaluation. Throughout the planning process, cost should be re-estimated and re-evaluated constantly

BACKGROUND AND ARGUMENTS

Processing a plan for urban sustainability requires various kinds of cost. Besides, it is very difficult to expect the cost and create a plan without a clear vision. Therefore adaptive planning must be able to present its justification and expected benefits. Also the source and expected outcomes from the cost should be considered in the actual plan.

Defining cost is the first step of the planning. It can be explained by analyzing different cost models, clarifying the source of each cost and evaluating the triple bottom line: social, economic and environmental cost. Actual cost is closely related to social circumstance and people's lifestyle. For successful planning, we must understand the social and economic status of the city and make an adaptable budget.

Planners must account for the possibility of the changing value of cost. It can be affected by inflation, discounting, tax incentives and other financial changes. Also a cost model needs to predict accurate/updated costs on a dynamic scale; it should be adaptable to current economic, social, and the cultural climate. While the cost of planning is expected and appropriated carefully, many variables should be expected. Therefore, our plan for cost should be flexible enough to confront these unexpected variables.

Defining Statement

ISSUE TOPIC

Public/Private Sector **6.5**

PROJECT
Urban Planning for Climate Change

ORIGINATOR
Eric Wilmot

CONTRIBUTORS
Irene Chong, Yoo Jung Ahn, Sang-Ho Lee
Erik Van Crimmin

SOURCE/S
1. Office of the Deputy Prime Minister. "The Planning response to Climate Change". Sept. 2004. CAG Consultants, London ODPM Publications. West Yorkshire.

2. Team meeting: Adaptive planning group, Institute of Design, IIT. Chicago, IL Sept. 2006.

QUESTION AT ISSUE

How can the issue of repeatability be approached in the construction of an adaptive urban plan?

POSITION

objective A modular construct SHOULD be implemented allowing different urban centers to customize the plan per specific needs and threats.

ALTERNATE POSITIONS

objective A unified concept SHOULD NOT assume that each urban centers needs and threats are the same.

BACKGROUND AND ARGUMENTS

Existing planning agenda's suggest that geographic, density, and infrastructure conditions be independently evaluated for state-of-the-art condition and vulnerabilities given the threats of climate change. While global or national imperatives are helpful for developing overarching goals, urban centers should strongly consider the threats posed to their locale given social, environmental, and economic needs to counter those threats.

It is the goal of a framework then, to allow for urban centers to understand, diagnose, and project solutions for their particular scenario. The breadth of this framework then, will ultimately allow experts and officials to consider and balance the issues particular to different urban plans.

Defining Statement

ISSUE TOPIC

Public/Private Sector

6.1

PROJECT
Urban Planning for Climate Change

ORIGINATOR
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Erik Van Crimmin

SOURCE/S
1. Team meeting: Adaptive planning group, Institute of Design, IIT. Chicago, IL Sept. 2006.

QUESTION AT ISSUE

How should the relationship between public and private sectors be managed?

POSITION

constraint Independent bodies MUST be developed or empowered to interpret public and private needs within the plan.

ALTERNATE POSITIONS

objective Leadership positions SHOULD be established within both public and private sectors to facilitate planning and interaction.

directive Public and Private relationships OUGHT TO develop as open source solutions depending on need.

BACKGROUND AND ARGUMENTS

Continued development of NGO's and public-to-private investments will provide balanced opportunity for adaptive planning strategy to succeed in implementation. Enterprise and organizational relationships between the public and private sector will need to recognize the interdependency and value of one another's knowledge and expertise in balancing regulation, research, and planning for successful execution of climate change agendas.

PROJECT
Adaptive Planning for Urban Sustainability

ORIGINATOR
Yoo-Jung Ahn, Sep. 11, 2006

CONTRIBUTORS
Irene Chong, Sang Ho Lee
Erik Van Crimmin, Eric Wilmot
John Montgomery

SOURCE/S

Lester R. Brown. **Plan 2.0 : Rescuing a Planet Under Stress and Civilization in trouble.** New York : W. W. Norton & Company, 2006.
World Watch Institute. **State of the World 2006: 1984 through 2005**, 2006.
Climate Change and Waste management, http://www.defra.gov.uk/

QUESTION AT ISSUE

How do we prepare for disruptions in the raw material flow?

POSITION

objective Urban cities should develop a system to control the fluctuation of raw material to evaluate of the amount of raw material consumption.

ALTERNATE POSITIONS

objective Urban cities should not develop an evaluation system; they can solve disruption of raw material flow by technological development.

BACKGROUND AND ARGUMENTS

Natural resources have been depleted more in the past several hundred years, then in the previous billions of years combined. Modern civilization has developed based on the dependency on these resources. In fact, our lives involve using these products everyday. For example, China, the most rapidly growing country, used 26% of the world's crude steel, 32% of the rice, 37% of cotton, and 47% of the cement in 2005. Due to the throwaway industry model, utilized in the west, the depleting natural resources are preventing third-world nations from developing.

Raw material usage emits polluting substances and affects global warming throughout the materials entire life cycle. Greenhouse gases are produced at each stage from raw material extraction, transport, manufacturing, consumption, and disposal of waste materials.

Cities must make a substantial recycling system to prepare for an emergency disruption of raw materials. Re-use of products and materials is almost as effective, because it prevents the return of the carbon within the materials to the environment for as long as possible. Re-use also reduces demand for new raw materials and therefore reduces climatic impacts. Waste reduction and waste avoidance are the most important part of the planning process. Also cities, buildings and products must be planned and designed considering recycling and ecology. Invention of sustainable materials or development of new technologies will help preventing the disruption of raw materials. Research funds should be appropriated to public R&D groups and major science agencies.

Design Factor

TITLE

Manager's lack of knowledge in the actual works

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

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Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Identify shortcomings
Assess project success
Sustain positive attributes

OBSERVATION

Because most manager level workers don't involved in detailed projects or evaluations, it is hard to them for identifying the areas of improvements.

EXTENSION

Project managers are good at capturing a big pictures in the projects and prospect future opportunities and threats, but poor at evaluating things that are required actual work experience knowledge.

In addition, it is difficult to share knowledge and to suggest ideas or opinions to managers due to lack of communication channels. Developing community channels for managers and actual worker, field workers is very critical to assess project success, sustain positive attributes and identify shortcomings.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Encourage actual worker's participation	Suggestion box
Give managers opportunities do actual works	Roll playing program
Arrange periodical meetings for managers and actual workers	Social activities

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Insufficient funds to select best-suted solution

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Select activities for continuous improvement

OBSERVATION

Even though brilliant corrective activities are identified, it is hard to select them as solutions in the real work situation due to insufficient funds

EXTENSION

Good solutions could be found, but it doesn't mean they are usable or implemental due to funds. Sufficient funds are a critical factor to make a decision, which solutions could be implemented. In many cases, best-suited solutions are ignored due to insufficient funds, and that causes poor operation, management and evaluation. Ensuring sufficient funds from financial resources will make projects much productive by continuous improvement.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Contact key governors or donating foundations	Financial recomandation to governers and foundation
Increase public awareness for financial support	Public service advertising
Reduce other expenses	Financial retrenchment
Expand financial resources	Fees from certifications and licenses

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Different groups has different interests

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine holistic solutions

OBSERVATION

Because different groups has different interests, determining holistic solutions is difficult.

EXTENSION

As making decisions for holistic solutions, different interest groups cause many difficulties. It is hard to make both public and private groups satisfy due to the differences in goals and motivations of two groups.

Public sectors look for solutions that help national economic, environment, policy and citizens more than pecuniary profits. On the other hand, private sectors' main propose is pecuniary profits generally.

DESIGN STRATEGIES

Separate interest groups from making decision

SOLUTION ELEMENTS

Decision making filter

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Insufficient actual workers to select best-suited activities

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Select activities for continuous improvement

OBSERVATION

If solutions for continuous improvement are required many actual workers to implement, it will be hard to choose the solutions even though they are the best-suited solutions.

EXTENSION

"Insufficient actual worker" is one of the primary reasons that causes a difficulty in selecting best-suited solutions ; solutions could be developed by three sectors in terms of finance, technology and labor.

Because some solutions for continuous improvement require frequent field researches, high amount of time to analyze data and many evaluation workers, it is very hard to choose the best-suited solutions.

DESIGN STRATEGIES

Give incentives to encourage actual workers

SOLUTION ELEMENTS

Employee incentives

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Most of new threats are controversial

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
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CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Prioritize new threats

OBSERVATION

Unless confidential data support rising threats as evidences, the new threats are controversial. For this reason, it is even harder to prioritize new threats

EXTENSION

There are two different reasons that the new threats could be controversial. First reason is that different sectors have different interests. As making decisions for new threats, different interest groups could cause difficulties due to their interests. In general, public sectors look for solutions that help national economic, environment, policy and citizens more than pecuniary profits. On the other hand, private sectors' main propose is pecuniary profits.

Different tools and methods deliver different data or answers. There are many tools and methods to identify new threats. So, it is highly possible that one research tells new threats is coming in 5 years, and the other research announces that there are no new threats but momentary phenomenon.

DESIGN STRATEGIES

SOLUTION ELEMENTS

Create a tool to help to prioritize the level of seriousness or urgency of new threats — Threats prioritization matrix

Determine the reliance and sufficiency of data — Data qualification criteria

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Too broad to summarize findings

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Summarize findings

OBSERVATION

Summarize findings will be very hard due to a wide-ranging researches and different summary criteria.

EXTENSION

After the all the researches and evaluations, summarizing findings is very difficult due to a mass of information, reported with different data arrangement, criteria and format. This problem causes very serious mistakes. For instance, due to the different usages of terms, receivers misunderstand the data and summarize in a different manner. If there is a summary template that uses commonly thought out all the departments, summarizing work will be very efficient and productive. By doing that, organizations can save time and labors to use more important tasks.

DESIGN STRATEGIES

Categorise key essential factors

SOLUTION ELEMENTS

Summary document templates

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

All findings are interrelated complexly

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Extract key findings

OBSERVATION

Extracting key findings could be very hard because all findings could be interrelated complexly. One finding could be more important than others, but if the importance is generated by other findings, extracting only one is not a proper way.

EXTENSION

Project managers could lose important findings by doing extraction of findings. Most of findings are interrelated that it is hard to say what is more important than others. Therefore, extracting key finding by prioritization is not a proper way. Project managers need to understand the relationships between findings and to cluster groups.

Extracting wrong findings would be a huge wasting. For instance, In the early evaluation stage, some findings seem minor insights, but later they turn out as very important key insights.

DESIGN STRATEGIES

Demonstrate key findings

Use clustering tool

SOLUTION ELEMENTS

Pretesting findings

Insight matrix

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

No criteria to evaluate suitable reporting officers

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine reporting officers

OBSERVATION

Reporting officers should be evaluated thoroughly because it is the main communication channel to share knowledge, ideas and opinions with others for making right decisions.

EXTENSION

Determining reporting officers is very important because reporting is the main communication channel in organizations. Deciding reporting officers without systematized evaluation could drive to make wrong project directions.

For instance, reporting officers could be elected by hierarchical positions, or personal relationships in organizations, but the officers don't understand projects well to acknowledge others who make big decisions for projects and organizational directions.

DESIGN STRATEGIES

Check officers' previous experience and achievement

SOLUTION ELEMENTS

Officers' personnel record

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Unorganized a mass of hard copy documents

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
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Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Evaluate recommendation reports

OBSERVATION

Using hard copies to report is inefficient and unproductive in terms of sharing knowledge, saving money in long term and adjusting documents.

EXTENSION

Many institutions are still using hard copy documents to report, but that makes many problems and difficulties to be effective and productive in terms of sharing knowledge, saving money and time.

Difficulties

1. Different types of data need to be reported differently, but hard copy reporting can not deliver dynamic and directive feelings like visual, sound, and touch .
2. Report documents could be adjusted or fixed frequently.
3. Reporting officers need to make appointments to report.
4. It is getting more expensive to report with hard copy due to paper costs.
5. It is hard to store and organize all the documents, and not easy to find specific data when needed.
6. Hard copy reporting system has low capability to change standardized document format in the short amount of time.

DESIGN STRATEGIES

Use digital documents

Create standardized document format

Report verbally

SOLUTION ELEMENTS

Muti modal reporting

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Emergency situations are unpredictable

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Establish schedule for implementation

OBSERVATION

Establishing schedule for Adaptive Climate Change implementation is very important, but emergency situations are so unpredictable that it is hard to keep the schedule or plan.

EXTENSION

Implementation schedule is very important to achieve project goals in time by using time and work forces effectively and systematically, but unpredictable situations causes keeping the schedule very difficult due to changing urgency priorities and essential data.

Before emergency situations, planners establish implementation schedule in terms of urgency, budget, public awareness and etc, but all the key factors of schedule could be changed entirely due to disasters like floods, earthquakes or blazes. Therefore, the schedule should be flexible enough to adjust those kinds of emergency situations, and also planners need to be establish appropriate the second and third emergency measures to reduce losses of lives and properties, and changes of implementation schedules.

DESIGN STRATEGIES

Create emergency coping plan separately

SOLUTION ELEMENTS

All treats

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Prioritizing threats

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

Responding to the avian influenza pandemic threat: Recommended strategic actions, World Health Organization, 2005.

ASSOCIATED FUNCTIONS

6. Summarize threats

7. Develop monitoring capabilities

OBSERVATION

Summarizing and prioritizing threats will be difficult because of the inherent complexity of the threats.

EXTENSION

The threats of global warming will be lasting and somewhat unpredictable. Some regions will be considerably drier for most of the year but will experience sudden flash floods. This would require a region to be able to identify and prepare for vastly different climatalogical issues.

Creating a network of cities that can work together to share knowledge, technologies, and adaptive strategies can alleviate some of the difficulties associated with climate change. Especially helpful would be a network that identifies regions similar in climate, links them together, and shares solutions amongst the members.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Understand and assess unpredictable threats	Threat modeling
Intensify collaboration with and between key players	Threat brotherhood
Improve detection methods	Lookout towers

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Difficult to identify and engage stakeholders

DF-6

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Promulgating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

STRATEGIES FOR SUCCESS FROM THE POLITICAL MARKETERS. By: Niffonegger, Phillip B.. Journal of Consumer Marketing, 1989, Vol. 6 Issue 1

ASSOCIATED FUNCTIONS

110. Identify promotion channels
111. Utilize new methods of delivery

OBSERVATION

Positioning a campaign or agenda requires delicate planning and strategy in order to identify and attract the correct stakeholders.

EXTENSION

As a first mover, it is often difficult to convince others of strategy direction since there is no precedent. Carefully crafted messaging may fail if it is delivered in the wrong fashion. Likewise, a wrong attitude or tone can debiliate a campaigns message and intent (see Howard Dean).

Leaders who fully understand their markets and purpose must research an desgin proper delivery for the implementation of a successful promotional campaign. A popular scenario is the 2006 marketing campaign delivered by Apple computer which successfully associates hipness, creativity, and personality with computing. Similar lessons can be found in the Toyota Prius and Whole Foods campaign which stress personal value through many different channels.

When promoting environmental issues, a gloom and doom or overly alarmist approach is cautioned. Instead, focus on the real values and channels that will garner support among the public.

DESIGN STRATEGIES

Recognize party affiliation and voting records

Identify core change agents

SOLUTION ELEMENTS

[existing]	Analyze voting record
[existing]	B2B campaign
[existing]	public survey
[modified]	public opinion blog

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Activity Analysis

ACTIVITY

Optimizing

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SCENARIO

An urban adaptation plan is modified and refined through evaluation processes and feedback from all users and departments.

USERS

Citizens
Department Administrators
Mayoral staff
Consultants
City councilperson
Program Directors

SYSTEM COMPONENTS

Project database
Personnel database
Communication tools
Planning tools
Project management tools
Budget Projection
Assessment tools

ENVIRONMENTAL COMPONENTS

City Council
Aldermanic Council
Planning Commission
Department of Revenue

SYSTEM FUNCTIONS	ASSOCIATED DESIGN FACTORS
78. Organize Audits	Difficulties in gaining consensus on the best approach Unable to find quantitive data Qualities of the auditors have not been determined
79. Incorporate professional/ industry standards	Too many standards exist
80. Hire consultants to improve performance	Insufficient resources Insufficient information about experts No process for evaluating consultants
81. Encourage participation across all departments	Lack of interest about the project
82. Consistently assess new processes and technologies	Difficulties in developing new processes/technologies
83. Promote outside participation	Methods for promotion are not determined

Activity Analysis

ACTIVITY

Building Alliances

PROJECT Massive Change: Adaptive Planning for Urban Sustainability Under Climate Change

MODE Preparation, Program Definition

ORIGINATOR Irene Chong

CONTRIBUTORS Yoo Jung Ahn
Irene Chong
Erik Van Crimmin
Sangho Lee
Eric Wilmot

SCENARIO The city will need to build allinaces with other governments, private firms and NGO's to successful implement an adaptive change plane.

USERS

City of Chicago
Other municipal governments
Higher levels of government
Private firms
NGO's

SYSTEM COMPONENTS

Database
Computer
Print collateral
Telephone
Computer
Internet

ENVIRONMENTAL COMPONENTS

Meeting Room
Information portal
Call centre

SYSTEM FUNCTIONS

F-25 Establish likely partners and objectors

F-26 Establish partnership agendas

F-27 Establish methods to diffuse objectors

F-28 Solicit buy-in from neutrals

F-30 Maintain partnership with alliances

ASSOCIATED DESIGN FACTORS

Time consuming to establish and maintain

Lack of trst

Establishing compromising point may be difficult

Appropriate communication partners or medium may not be available

Message are not clearly communicated

VERSION 1 DATE 30 September 06 DATE OF FIRST VERSION 30 September 06

Activity Analysis

ACTIVITY

Identifying Current Capabilities

PROJECT Massive Change: Adaptive Planning for Urban Sustainability Under Climate Change

MODE Preparation, Program Definition

ORIGINATOR Irene Chong

CONTRIBUTORS Yoo Jung Ahn
Irene Chong
Erik Van Crimmin
Sangho Lee
Eric Wilmot

SCENARIO The current state of the city will determine what the city is capable of achieving in both the short-term and long-term.

USERS

Municipal government workers
Higher levels of government
Private firms
NGO's

SYSTEM COMPONENTS

Computer
Internet
Audit Reports

ENVIRONMENTAL COMPONENTS

SYSTEM FUNCTIONS

F-32 Identify conditions of departments/ divisions

F-33 Identify organizational competencies

F-34 Project capacity and costs for "Business as Usual"

F-35 Identify tradeoffs of potential solutions

F-36 Identify major contributors to city's carbon output

ASSOCIATED DESIGN FACTORS

The relationship between department can make identification of conditions difficult

Workers do not understand the core competencies of the organization

Data inaccessible or inaccurate

Data is too complex

VERSION 1 DATE 30 September 06 DATE OF FIRST VERSION 30 September 06

Design Factor

TITLE

Inaccurate Data

DF-1

PROJECT	Adaptive Planning for Climate Change
MODE	Preparation
ACTIVITY	Identifying current capabilities
ORIGINATOR	Irene Chong
CONTRIBUTORS	Yoo-Jung Ahn Irene Chong Erik Crimmin Sang-ho Lee John Montgomery Eric Wilmot

SOURCE/S

ASSOCIATED FUNCTIONS

F-33 Identify organizational competencies

OBSERVATION

Inaccurate data may result in poor assessment of the city's organizational competencies, resulting in misallocated resources.

EXTENSION

For the city to operate at its optimal best, it must be able to recognize its competences and be able to leverage them effectively. Inaccurate assessments of the cities strengths may lead to redundant allocation for scarce resources and expertise. An external management consultant can help enhance the skills of workers, so that they are better equiped and hence more likely to peform optimally and produce accurate results.

DESIGN STRATEGIES

Enhance skills of workers

SOLUTION ELEMENTS

[existing] Hire Management Consultant

VERSION 2 DATE 20 September 06 DATE OF FIRST VERSION 20 September 06

Design Factor

TITLE

Compromise with Partners

DF-1

PROJECT	Adaptive Planning for Climate Change
MODE	Preparation
ACTIVITY	Building Alliances
ORIGINATOR	Irene Chong
CONTRIBUTORS	Yoo-Jung Ahn Irene Chong Erik Crimmin Sang-ho Lee John Montgomery Eric Wilmot

SOURCE/S

ASSOCIATED FUNCTIONS

F-26 Establish partnership agendas

F-30 Maintain partnership with alliances

OBSERVATION

Partners each come to the table with their own agenda and set of goals, which may not be exactly the same as what others are striving for.

EXTENSION

When it comes to building alliances, it is important that all partners have a chance to voice their opinions. Even though they are collaborating and working towards a common goal, each will come with a specific goal they want to reach.

If the city government is going to leverage the expertise of private businesses which it does not have, they will need to be sensitive of their culture and the way they do business. Likewise, the same goes for the private businesses. They must constantly check in with each other, and proactively mediate any conflicts that may arise.

DESIGN STRATEGIES

Learn to understand others

Identify tradeoffs and potential solutions

SOLUTION ELEMENTS

[speculative] Empathetic training

[speculative] Partnership pulse

[existing] Conflict mediation

VERSION 1 DATE 15 October 2006 DATE OF FIRST VERSION 15 October 2006

Design Factor

TITLE

Communication Mediums

DF-1

PROJECT	Adaptive Planning for Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Preparation	Group Discussion	F-27 Establish methods to diffuse objectors
ACTIVITY	Building Alliances		
ORIGINATOR	Irene Chong		
CONTRIBUTORS	Yoo-Jung Ahn Eric Crimmin Sang-ho Lee John Montgomery Eric W ilmot		

OBSERVATION

There are objectors out there who do not believe there is any urgency to adapt to climate change.

EXTENSION

There will always be sideline objectors, trying to dampen the efforts of the adapative plan for climate change. These critics will not go away, but if handled properly, their message can be diluted.

To promote the cause for adaptation, a good PR agent is needed to continuosly get the message out, and get people to believe and take action. They must be able to offer solid evidence and critical arguments to support the truth about climate change, and to shorten the reach of any opposition.

DESIGN STRATEGIES

Hire a PR agent to send out persuasive and consistent message

SOLUTION ELEMENTS

[existing] Social responsibility marketers

VERSION 2 DATE 20 September 06 DATE OF FIRST VERSION 20 September 06

Design Factor

TITLE

Organizational Competencies

DF-1

PROJECT	Adaptive Planning for Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Preparation		F33 Identify organizational competencies
ACTIVITY	Identifying Current Capabilities		
ORIGINATOR	Irene Chong		
CONTRIBUTORS	Yoo-Jung Ahn Irene Chong Erik Crimmin Sang-ho Lee John Montgomery Eric Wilmot		

OBSERVATION

People in an organization may think they are working towards a common goal. However, lack of clarity of their competencies may result in people not fully understanding the objectives and working toward the wrong goals.

EXTENSION

To effectively plan for adaptive change to global warming, everyone must be aligned and on the same page. If they are not, then efforts are diluted and impact is reduced. To help direct the common vision, and best leverage an organization's competencies, there must be clear definition of roles and responsibilities. Understanding how their skills contribute to an end goal will help organizations improve upon them as needed, and ensure their efforts help them achieve their objectives. Different teams, departments and organizations will become more aligned, and can then maximize the benefits of their efforts.

DESIGN STRATEGIES

Common goal for everyone to understand

SOLUTION ELEMENTS

[speculative] Mission Statement

VERSION 1 DATE 17 September 06 DATE OF FIRST VERSION

Design Factor

TITLE

Managing Skills

DF-1

PROJECT	Massive Change
MODE	Preparation
ACTIVITY	Identifying current capabilities
ORIGINATOR	Irene Chong
CONTRIBUTORS	Yoo-Jung Ahn Irene Chong Erik Crimmin Sang-ho Lee John Montgomery Eric Wilmot

SOURCE/S

http://en.wikipedia.org/wiki/Skills_management

ASSOCIATED FUNCTIONS

F25 Establish likely partners and objectors

F26 Establish partnership agendas

OBSERVATION

In any organization, people possess a wealth of knowledge and skills. However, these skills are only effective when put to proper use.

EXTENSION

Matching people's skills to a job can be a challenging task, which requires extensive effort and time. To make the best use of people's skills, you must understand what they are capable of, and how best to deploy them. People's skill sets should match those required for a particular job in order for the best results to come forth.

Skills need to be clearly defined, which can be discovered with competency tools. These act as checklists to audit the body of skills a person possesses. The collective talent pool within a given department or organization reflects their current capabilities and their ability to adapt. In order to be aware of the talent available, the assess-

DESIGN STRATEGIES

Software tool (like online dating) that matches up people, resoure, etc.

SOLUTION ELEMENTS

Algorithm matching tool

VERSION 1 DATE 30 September 06 DATE OF FIRST VERSION

Design Factor

TITLE

Lack of Trust

DF-1

PROJECT	Adaptiv Planning for Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Preparation		F-25 Establish likely partners and objectors
ACTIVITY	Identify organizational Competencies		F-26 Establish partnership agendas
ORIGINATOR	Irene Chong		
CONTRIBUTORS	Yoo-Jung Ahn Irene Chong Erik Crimmin Sang-ho Lee John Montgomery Eric Wilmot		

OBSERVATION

As the network of people planning for adaptation to global warming grows, partnerships between public and private institutions will emerge. However, a lack of trust can undermine the strength of these relationships, and diminish any positive outcomes that may result.

EXTENSION

Neither the public or private sector can single handedly solve the problem of adapting to global warming. Each organization will possess a body of knowledge that is unique to themselves. By partnering with each other, each will be able to tap into extended knowledge and resources that otherwise would not be known.

A critical factor to the success of any partnership is trust. Without this, it can be detrimental to the relationship and undermine its effectiveness. Lack of trust can be caused by unhealthy competition between partnering groups or individuals for status and resources. With the merging of heads, leadership becomes a melting pot, and high potential for conflict if not properly handled.

In order to best mitigate this, partners need to have an open line of communication. They need to fully understand each others positions and invested interests, and ensure that they are addressed in join initiatives. Responsibilities and roles must be

DESIGN STRATEGIES

Establish rule of sharing info

SOLUTION ELEMENTS

[speculative] Transparency of Info

VERSION 1 DATE 20 September 06 DATE OF FIRST VERSION

Design Factor

TITLE

Manager's lack of knowledge in the actual works

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Identify shortcomings
Assess project success
Sustain positive attributes

OBSERVATION

Because most manager level workers don't involved in detailed projects or evaluations, it is hard to them for identifying the areas of improvements.

EXTENSION

Project managers are good at capturing a big pictures in the projects and prospect future opportunities and threats, but poor at evaluating things that are required actual work experience knowledge.

In addition, it is difficult to share knowledge and to suggest ideas or opinions to managers due to lack of communication channels. Developing community channels for managers and actual worker, field workers is very critical to assess project success, sustain positive attributes and identify shortcomings.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Encourage actual worker's participation	Suggestion box
Give managers opportunities do actual works	Roll playing program
Arrange periodical meetings for managers and actual workers	Social activities

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Insufficient funds to select best-suted solution

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
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CONTRIBUTORS
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Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Select activities for continuous improvement

OBSERVATION

Even though brilliant corrective activities are identified, it is hard to select them as solutions in the real work situation due to insufficient funds

EXTENSION

Good solutions could be found, but it doesn't mean they are usable or implemental due to funds. Sufficient funds are a critical factor to make a decision, which solutions could be implemented. In many cases, best-suited solutions are ignored due to insufficient funds, and that causes poor operation, management and evaluation. Ensuring sufficient funds from financial resources will make projects much productive by continuous improvement.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Contact key governors or donating foundations	Financial recomandation to governers and foundation
Increase public awareness for financial support	Public service advertising
Reduce other expenses	Financial retrenchment
Expand financial resources	Fees from certifications and licenses

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Different groups has different interests

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine holistic solutions

OBSERVATION

Because different groups has different interests, determining holistic solutions is difficult.

EXTENSION

As making decisions for holistic solutions, different interest groups cause many difficulties. It is hard to make both public and private groups satisfy due to the differences in goals and motivations of two groups.

Public sectors look for solutions that help national economic, environment, policy and citizens more than pecuniary profits. On the other hand, private sectors' main propose is pecuniary profits generally.

DESIGN STRATEGIES

Separate interest groups from making decision

SOLUTION ELEMENTS

Decision making filter

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Insufficient actual workers to select best-suited activities

PROJECT
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Select activities for continuous improvement

OBSERVATION

If solutions for continuous improvement are required many actual workers to implement, it will be hard to choose the solutions even though they are the best-suited solutions.

EXTENSION

"Insufficient actual worker" is one of the primary reasons that causes a difficulty in selecting best-suited solutions ; solutions could be developed by three sectors in terms of finance, technology and labor.

Because some solutions for continuous improvement require frequent field researches, high amount of time to analyze data and many evaluation workers, it is very hard to choose the best-suited solutions.

DESIGN STRATEGIES

Give incentives to encourage actual workers

SOLUTION ELEMENTS

Employee incentives

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Most of new threats are controversial

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Prioritize new threats

OBSERVATION

Unless confidential data support rising threats as evidences, the new threats are controversial. For this reason, it is even harder to prioritize new threats

EXTENSION

There are two different reasons that the new threats could be controversial. First reason is that different sectors have different interests. As making decisions for new threats, different interest groups could cause difficulties due to their interests. In general, public sectors look for solutions that help national economic, environment, policy and citizens more than pecuniary profits. On the other hand, private sectors' main propose is pecuniary profits.

Different tools and methods deliver different data or answers. There are many tools and methods to identify new threats. So, it is highly possible that one research tells new threats is coming in 5 years, and the other research announces that there are no new threats but momentary phenomenon.

DESIGN STRATEGIES

SOLUTION ELEMENTS

Create a tool to help to prioritize the level of seriousness or urgency of new threats — Threats prioritization matrix

Determine the reliance and sufficiency of data — Data qualification criteria

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Too broad to summarize findings

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Summarize findings

OBSERVATION

Summarize findings will be very hard due to a wide-ranging researches and different summary criteria.

EXTENSION

After the all the researches and evaluations, summarizing findings is very difficult due to a mass of information, reported with different data arrangement, criteria and format. This problem causes very serious mistakes. For instance, due to the different usages of terms, receivers misunderstand the data and summarize in a different manner. If there is a summary template that uses commonly thought out all the departments, summarizing work will be very efficient and productive. By doing that, organizations can save time and labors to use more important tasks.

DESIGN STRATEGIES

Categorise key essential factors

SOLUTION ELEMENTS

Summary document templates

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

All findings are interrelated complexly

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

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Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Extract key findings

OBSERVATION

Extracting key findings could be very hard because all findings could be interrelated complexly. One finding could be more important than others, but if the importance is generated by other findings, extracting only one is not a proper way.

EXTENSION

Project managers could lose important findings by doing extraction of findings. Most of findings are interrelated that it is hard to say what is more important than others. Therefore, extracting key finding by prioritization is not a proper way. Project managers need to understand the relationships between findings and to cluster groups.

Extracting wrong findings would be a huge wasting. For instance, In the early evaluation stage, some findings seem minor insights, but later they turn out as very important key insights.

DESIGN STRATEGIES

Demonstrate key findings

Use clustering tool

SOLUTION ELEMENTS

Pretesting findings

Insight matrix

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

No criteria to evaluate suitable reporting officers

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine reporting officers

OBSERVATION

Reporting officers should be evaluated thoroughly because it is the main communication channel to share knowledge, ideas and opinions with others for making right decisions.

EXTENSION

Determining reporting officers is very important because reporting is the main communication channel in organizations. Deciding reporting officers without systematized evaluation could drive to make wrong project directions.

For instance, reporting officers could be elected by hierarchical positions, or personal relationships in organizations, but the officers don't understand projects well to acknowledge others who make big decisions for projects and organizational directions.

DESIGN STRATEGIES

Check officers' previous experience and achievement

SOLUTION ELEMENTS

Officers' personnel record

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Unorganized a mass of hard copy documents

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Evaluate recommendation reports

OBSERVATION

Using hard copies to report is inefficient and unproductive in terms of sharing knowledge, saving money in long term and adjusting documents.

EXTENSION

Many institutions are still using hard copy documents to report, but that makes many problems and difficulties to be effective and productive in terms of sharing knowledge, saving money and time.

Difficulties

1. Different types of data need to be reported differently, but hard copy reporting can not deliver dynamic and directive feelings like visual, sound, and touch .
2. Report documents could be adjusted or fixed frequently.
3. Reporting officers need to make appointments to report.
4. It is getting more expensive to report with hard copy due to paper costs.
5. It is hard to store and organize all the documents, and not easy to find specific data when needed.
6. Hard copy reporting system has low capability to change standardized document format in the short amount of time.

DESIGN STRATEGIES

Use digital documents

Create standardized document format

Report verbally

SOLUTION ELEMENTS

Muti modal reporting

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Emergency situations are unpredictable

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Establish schedule for implementation

OBSERVATION

Establishing schedule for Adaptive Climate Change implementation is very important, but emergency situations are so unpredictable that it is hard to keep the schedule or plan.

EXTENSION

Implementation schedule is very important to achieve project goals in time by using time and work forces effectively and systematically, but unpredictable situations causes keeping the schedule very difficult due to changing urgency priorities and essential data.

Before emergency situations, planners establish implementation schedule in terms of urgency, budget, public awareness and etc, but all the key factors of schedule could be changed entirely due to disasters like floods, earthquakes or blazes. Therefore, the schedule should be flexible enough to adjust those kinds of emergency situations, and also planners need to be establish appropriate the second and third emergency measures to reduce losses of lives and properties, and changes of implementation schedules.

DESIGN STRATEGIES

Create emergency coping plan separately

SOLUTION ELEMENTS

All treats

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Managing systemic problems

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

"Structured Planning," Owens, Charles. 2005.

ASSOCIATED FUNCTIONS

4. Predict region effects from global warming

5. Determine level of urgency for action

OBSERVATION

How should we manage such a systemic problem when determining the level of urgency and predicting the effects of climate change?

EXTENSION

The management of a topic as wide as responding to climate change will be exceedingly difficult. The issue is systemic and unavoidable and will require inordinate contributions from previously detached place-holders.

The management of systemic problems requires powerful tools that are able to disseminate and process huge amounts of data and reform it into a workable, useful solution. Especially relevant will be the sections dedicated to an expansive view of the issues involved, a way of capturing expected problems and their solutions, and a methodology of developing system-wide solutions.

DESIGN STRATEGIES

Find ways to process large amounts of information

SOLUTION ELEMENTS

Structured planning

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Prioritizing threats

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

Responding to the avian influenza pandemic threat: Recommended strategic actions, World Health Organization, 2005.

ASSOCIATED FUNCTIONS

6. Summarize threats

7. Develop monitoring capabilities

OBSERVATION

Summarizing and prioritizing threats will be difficult because of the inherent complexity of the threats.

EXTENSION

The threats of global warming will be lasting and somewhat unpredictable. Some regions will be considerably drier for most of the year but will experience sudden flash floods. This would require a region to be able to identify and prepare for vastly different climatalogical issues.

Creating a network of cities that can work together to share knowledge, technologies, and adaptive strategies can alleviate some of the difficulties associated with climate change. Especially helpful would be a network that identifies regions similar in climate, links them together, and shares solutions amongst the members.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Understand and assess unpredictable threats	Threat modeling
Intensify collaboration with and between key players	Threat brotherhood
Improve detection methods	Lookout towers

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Regions unable to assess current status

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

ASSOCIATED FUNCTIONS

2. Determine precursors for future threats

OBSERVATION

Regions may not be able to assess their current environmental status, a necessary component of gaining insights from past events.

EXTENSION

Regions will become either hotter and drier, wetter, struggle with rising seas, or some combination therein. It may be difficult for regions to predetermine which combination they will likely experience as a result of global warming.

This has implications for American models of adaptation, which is historically based on adjusting to known phenomena that have already been experienced, such as adjusting to heat waves.

DESIGN STRATEGIES

Develop network of climate checking

SOLUTION ELEMENTS

Climate network

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Difficult to identify and engage stakeholders

DF-6

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Promulgating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

STRATEGIES FOR SUCCESS FROM THE POLITICAL MARKETERS. By: Niffonegger, Phillip B.. Journal of Consumer Marketing, 1989, Vol. 6 Issue 1

ASSOCIATED FUNCTIONS

110. Identify promotion channels
111. Utilize new methods of delivery

OBSERVATION

Positioning a campaign or agenda requires delicate planning and strategy in order to identify and attract the correct stakeholders.

EXTENSION

As a first mover, it is often difficult to convince others of strategy direction since there is no precedent. Carefully crafted messaging may fail if it is delivered in the wrong fashion. Likewise, a wrong attitude or tone can debiliate a campaigns message and intent (see Howard Dean).

Leaders who fully understand their markets and purpose must research an desgin proper delivery for the implementation of a successful promotional campaign. A popular scenario is the 2006 marketing campaign delivered by Apple computer which successfully associates hipness, creativity, and personality with computing. Similar lessons can be found in the Toyota Prius and Whole Foods campaign which stress personal value through many different channels.

When promoting environmental issues, a gloom and doom or overly alarmist approach is cautioned. Instead, focus on the real values and channels that will garner support among the public.

DESIGN STRATEGIES

Recognize party affiliation and voting records

Identify core change agents

SOLUTION ELEMENTS

[existing]	Analyze voting record
[existing]	B2B campaign
[existing]	public survey
[modified]	public opinion blog

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Prioritizing threats

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

Responding to the avian influenza pandemic threat: Recommended strategic actions, World Health Organization, 2005.

ASSOCIATED FUNCTIONS

6. Summarize threats

7. Develop monitoring capabilities

OBSERVATION

Summarizing and prioritizing threats will be difficult because of the inherent complexity of the threats.

EXTENSION

The threats of global warming will be lasting and somewhat unpredictable. Some regions will be considerably drier for most of the year but will experience sudden flash floods. This would require a region to be able to identify and prepare for vastly different climatalogical issues.

Creating a network of cities that can work together to share knowledge, technologies, and adaptive strategies can alleviate some of the difficulties associated with climate change. Especially helpful would be a network that identifies regions similar in climate, links them together, and shares solutions amongst the members.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Understand and assess unpredictable threats	Threat modeling
Intensify collaboration with and between key players	Threat brotherhood
Improve detection methods	Lookout towers

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Fear of retaliation by supervisors

DF-7

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Operating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

The Why, What, and How of Innovation Management. Hamel, Gary. Harvard Business Review. Feb. 2006

Managers, workers disagree on performance. By: Rothberg, Deborah. eWeek, 10/2/2006, Vol. 23 Issue 39

ASSOCIATED FUNCTIONS

69. Conduct satisfaction surveys

OBSERVATION

Management reviews must take into account how they are percieved by their employees.

EXTENSION

To foster leading thinking amonst peers, there should be no hestiation for employees to critique performance or management direction. However, typical management review is given by other managers. Thus, there is a lack of relationship and necessary respect between a managers performance and their employee base.

This paradigm often leads to a hesitation on the part of employees to suggest change or new ideas for fear of retaliation. Too often, suggestions are percieved as criticizms, and managers will either choose to ignore, or worse retaliate against those proposing new directions.

DESIGN STRATEGIES

Initiate comprehensive reviews

Empower team capabilities

SOLUTION ELEMENTS

[existing]	360 review
[speculative]	Recommendation pools
[speculative]	Revolving roles

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Actors inhibited by departmental barriers

DF-5

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Operating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Department Status: An Exploratory Investigation of Direct and Indirect Effects on Product Development Performance. By: Kahn, Kenneth B.. Journal of Product Innovation Management, Nov2005, Vol. 22 Issue 6

ASSOCIATED FUNCTIONS

67. Share resources from other departments

OBSERVATION

Department barriers can constrict free flow of information and the recognition of new ideas. Leading innovative organizations eliminate the traditional boundaries between departments

EXTENSION

????

DESIGN STRATEGIES

Develop holistic solutions

SOLUTION ELEMENTS

[existing] Flat organization

VERSION 1	DATE 07 October 06	DATE OF FIRST VERSION	07 October 06

Design Factor

TITLE

Need for Revisions may range in difficulty

DF-4

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Operating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

DFMEA Analysis.
ISO 14000 protocol

ASSOCIATED FUNCTIONS

66. Establish protocol to revise program activities

OBSERVATION

Some needs are more critical, or time sensative, than others. A revision system must provide a way to recognize these differences

EXTENSION

From industrial systems to email, there are methods available for users to express urgency and complexity of their requests. Within an administrative system devoted to change management, a similar system should be devised to accommodate requests for revisions to a process or procedure.

DESIGN STRATEGIES

Develop clear and manageable system

SOLUTION ELEMENTS

[existing] Importance flagging

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Required knowledge of other department systems DF-3

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Operating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Competition, Collaboration and Cooperation: An Uneasy Triangle in Networks of Firms and Regions By: Polenske, Karen. Journal of Product Innovation Management, Nov2005, Vol. 22 Issue 6

ASSOCIATED FUNCTIONS

65. Promote interdepartmental collaboration

OBSERVATION

Recognizing and utilizing value among departments challenges HR management.

EXTENSION

Leading institutions and enterprise have been able to drive innovative solutions and efficiency measures by promoting cross-departmental collaboration. A challenge embedded within collaborative efforts is how to best facilitate interaction and understanding across departments. As in a government structure, or corporate ogranization, different departments likely use different computing or communication systems. In order to promote effective knowledge transfer or faster transmission of ideas, knowledge of those systems and opportunities within those systems is critical.

DESIGN STRATEGIES

Develop new solutions per department

Restructure teams by task

SOLUTION ELEMENTS

[existing] 3C's challenge

[speculative] Random matchmaking

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Training may require custom applications

DF-2

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Operating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Partnering Up. By: Sallie-Dosunmu, Meloney J.. T+D, Sep2006, Vol. 60 Issue 9

Do you want to be in L&D? By: Sparrow, Stephanie. Training Magazine, Feb2006

PREDICTING PERCEIVED EFFECTIVENESS OF TRAINING IN LOCAL GOVERNMENT. By: Schumaker, Alice M.. Public Performance & Management Review, Mar2004, Vol. 27 Issue 3.

ASSOCIATED FUNCTIONS

63. Transfer knowledge from experts to program leaders
64. Train internal management

OBSERVATION

New topics and methods can present challenges to conventional methods of training

EXTENSION

Invariably, organizations recognize the need for training when faced with dynamic problems or issues of competitive advantage. However, issueus of coordination, cost, relevance, and down time often prohibit proper training. Not only can the task of finding the appropriate trainer and schedule prove challenging, the benefit and value created by the quality of that training can provide difficult to quantify.

Where external training may take on a “field trip” quality, which has generally leads to low ROI, the notion of inhouse training is a more favorable approach. Thus, effective approaches to in house training, and the creation of custom training programs leads to a more agile, and effective workforce while providing higher yield on invenstments.

DESIGN STRATEGIES

Develop new solutions per department

Develop holistic solutions

SOLUTION ELEMENTS

[existing]	Group training sessions
[existing]	Career advancement
[existing]	Manage Learning and Development

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Responsibility may overlap multiple positions

DF-1

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Operating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Discussion: Sadhu Johnston & City of Chicago Planning Team

ASSOCIATED FUNCTIONS

62. Delegate responsibility for tasks

OBSERVATION

The large nature of problems to be assessed and addressed by administrations requires responsibilities to be defined that will likely span over many departments and professions.

EXTENSION

As an orgainzation approaches a new program, methods for recognizing responsibility centers, and then assigning appropriate individuals or teams to those responsibilities proves challenging. More complex problems often require an organization to create positions or toolsl to facilitate communication and tracking. These tools also associate who is responsible for what, and in what timeframe of delivery. Several methods are available to identify and manage responsibilities across disciplines and departments.

DESIGN STRATEGIES

Provide team building excercises

Break down tasks to individual goals

SOLUTION ELEMENTS

[existing] Correspondence forum

[existing] Disassociated tassking

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Individual Responsibilities Unclear

DF-6

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Initiating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	Massive Change Team Members. Fall, 2006.

SOURCE/S

Team Dicussion: Fall 2006.

ASSOCIATED FUNCTIONS

58. Present deliverables within each department
61. Present immediate scope of work

OBSERVATION

When presented with new group challenges, the individual can be confused as to their ability to contribute.

EXTENSION

Traditional job description and duties can be challenged when an organization chooses to advancd a new campaign or set of operational goals. Duties that are well rehersed and polished by employees are now faced with a new challenge or criteria.

Navigating this change can weaken a system that's used to a set way of performing duties. Noting the task based nature of most employment opporutnities, if a task is not clearly related to existing funtion, large parts of the employee base will become confused, frustrated. Possibly, they may choose to proceed in some sort of way without real clarity on individual goals or contributions.

Efficiency in program roll out has a responsibility to relate new tasks to existing tasks, or find actors who can more fully accomplish the challgenges posed by new problems.

DESIGN STRATEGIES

Describe tasks in context of current abilities

SOLUTION ELEMENTS

[speculative] Associated learning

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Work and Educational load diminish participation

DF-5

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Initiating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Organizational Downsizing: A Convergence and Reorientation Framework. Sarah J. Freeman. Kim S. Cameron. Organization Science, Vol. 4

ASSOCIATED FUNCTIONS

57. Review schedule with management

OBSERVATION

Like downsizing, which has long been a topic within the business context, the addition of more workload among employees can result in disengagement and loss of productivity.

EXTENSION

Activities and directives that are developed and disseminated by the organization to its employee members are exposed to the subjectivity of those member emplyees regarding the validity and importance of those endeavors. Moreover, the liklihood that these tasks add to an already taxed workforce challenge the liklihood for new endeavors to be completed efficiently.

DESIGN STRATEGIES

Introduce mandatory comformance

Develop sense of responsibility

SOLUTION ELEMENTS

[existing] Task charts

[speculative] Leadership development

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Individual actors opinions may hamper progress

DF-4

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Initiating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Disgruntled workers were driving Vance Patterson crazy. By: Clifford, Stephanie. Inc., Jul2005, Vol. 27 Issue 7

ASSOCIATED FUNCTIONS

55. Secure public/private partnerships
56. Organize and announce formal launch of program

OBSERVATION

Announing new agendas and topics of discovery can elicit personal, and sometimes negative reactions from staff agents.

EXTENSION

The announcement of new organizational policies or conformance will almost surely find detractors, not matter what the topic. The challenge then, is to diffuse, and even motivate these agents toward more productive attitudes. Where issues of the environment remain controversial, an individuals negative outlook may detract from the positive momentum envisioned by the organizational leadership. Further, disgruntled employees can persuade those agents who may be “on the fence” about a new directive or mission by the enterprise.

DESIGN STRATEGIES

Introduce mandatory comformance

Open discussion of topics

SOLUTION ELEMENTS

[existing] Conformance policy

[speculative] Anonymous sounding board

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Formal committments difficult to attain

DF-3

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Initiating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Elkins, T. and Keller, R.T. (2003) Leadership in research and development organizations: a literature review and conceptual framework. The Leadership Quarterly, 14, 587–596.

ASSOCIATED FUNCTIONS

55. Secure public/private partnerships
56. Organize and announce formal launch of program

OBSERVATION

While supporters of an idea may promise financial or promotional backing, follow through at critical times of development can present challenges to the success of a program

EXTENSION

Securing support for execution of programs usually involves navigating the obstacles of empty promises. Across a range of requried resources such as financial backing, human resources, or promotional support securing formal committments requires care and thorough development especially when navigating Public and Private funding platforms.

For agendas to be launched on new topics, legacy resources are often not an option. Finding new vendors, consultants, and internal staff dedicated to the success of a program must be validated in ways that descrease risk for potential funding agents.

DESIGN STRATEGIES

- RFP process
- Stage smaller activities
- Validate program

SOLUTION ELEMENTS

[existing]	Bidding process
[speculative]	Micro financing
[existing]	Equity match

VERSION 2 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Benchmarking performance goals may shift

DF-2

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Initiating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Joroff, M. Porter, Wm. Feinberg, B. Kukla, C
Journal of Corporate Real Estate; Sep2003, Vol. 5 Issue 4, p293-311
Elkins, T. and Keller, R.T. (2003) Leadership in research and development organizations: a literature review and conceptual framework. The Leadership Quarterly, 14, 587–596.

ASSOCIATED FUNCTIONS

54. Introduce benefits and goals of project to internal staff.

OBSERVATION

A characteristic of leading organizations is the ability to be agile; adjusting to forces and opportunities as they arise.

EXTENSION

Organizations are increasingly under pressure to optimize protocols called “best practices”. Six Sigma is a commonly known best practice protocol for prioritizing and implementing improvements to an organizations operation.

More recently best practice protocols are challenged by the rapidity and requency in which new methods or protocols must be designed, tested, and implemented for the agile enterprise. Depending on the size of the organization, public/private nature of its involvement, or supply chain precedents, adaptivity to new methods can provide real challenges. Realized gains from best practice implementation efforts can be offset by reduced performance during learning curves in the context of frequent protocol change.

DESIGN STRATEGIES	SOLUTION ELEMENTS	
Set large goals, sophisticated planning	[existing]	Stagegate planning
set smaller goals on a range of topics	[speculative]	Guerilla planning
Allow constant reevaluation of criteria	[speculative]	Crowdsource

VERSION 1 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Difficulty presenting clear mission to multiple users DF-1

PROJECT	Urban Adaptivity To Climate Change
MODE	Execution
ACTIVITY	Initiating
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	

SOURCE/S

Fister Gale, Sarah. PM Network, Feb2006, Vol. 20 Issue 2, p24-28

ASSOCIATED FUNCTIONS

54. Introduce benefits and goals of project to internal staff

OBSERVATION

Positions and responsiblities differ across levels of an organization.

EXTENSION

Finding a common goal among various opinions and perspectives can be very challenging. When presenting new directions or challenges to an enterprise or oganization, the various personal and political perspectives are an important factor to be addressed in determining the potential success of that challenge.

Methods vary, and should be evaluated by a managing authority as to their appropriateness and benefit. Addressing crowds without understanding their base concerns can have an alienating effect. Imposing goals without relation can destabillize authority's platform. Across many professions, there are values and scenarios that allow for a higher potential for sucess by recognizing the techniques of presenting the challenges at hand in appropriate terms.

DESIGN STRATEGIES

Top level declaration

Present benefits from experience

SOLUTION ELEMENTS

[existing] Top down directives

[speculative] Experience Mentors

[speculative] Presentation by peers

VERSION 2 DATE 07 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Manager's lack of knowledge in the actual works

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Identify shortcomings
Assess project success
Sustain positive attributes

OBSERVATION

Because most manager level workers don't involved in detailed projects or evaluations, it is hard to them for identifying the areas of improvements.

EXTENSION

Project managers are good at capturing a big pictures in the projects and prospect future opportunities and threats, but poor at evaluating things that are required actual work experience knowledge.

In addition, it is difficult to share knowledge and to suggest ideas or opinions to managers due to lack of communication channels. Developing community channels for managers and actual worker, field workers is very critical to assess project success, sustain positive attributes and identify shortcomings.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Encourage actual worker's participation	Suggestion box
Give managers opportunities do actual works	Roll playing program
Arrange periodical meetings for managers and actual workers	Social activities

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Insufficient funds to select best-suted solution

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Select activities for continuous improvement

OBSERVATION

Even though brilliant corrective activities are identified, it is hard to select them as solutions in the real work situation due to insufficient funds

EXTENSION

Good solutions could be found, but it doesn't mean they are usable or implemental due to funds. Sufficient funds are a critical factor to make a decision, which solutions could be implemented. In many cases, best-suited solutions are ignored due to insufficient funds, and that causes poor operation, management and evaluation. Ensuring sufficient funds from financial resources will make projects much productive by continuous improvement.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Contact key governors or donating foundations	Financial recomandation to governers and foundation
Increase public awareness for financial support	Public service advertising
Reduce other expenses	Financial retrenchment
Expand financial resources	Fees from certifications and licenses

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Different groups has different interests

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine holistic solutions

OBSERVATION

Because different groups has different interests, determining holistic solutions is difficult.

EXTENSION

As making decisions for holistic solutions, different interest groups cause many difficulties. It is hard to make both public and private groups satisfy due to the differences in goals and motivations of two groups.

Public sectors look for solutions that help national economic, environment, policy and citizens more than pecuniary profits. On the other hand, private sectors' main propose is pecuniary profits generally.

DESIGN STRATEGIES

Separate interest groups from making decision

SOLUTION ELEMENTS

Decision making filter

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Insufficient actual workers to select best-suited activities

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
Wilmot, Eric Ahn, Yoo-Jung
Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Select activities for continuous improvement

OBSERVATION

If solutions for continuous improvement are required many actual workers to implement, it will be hard to choose the solutions even though they are the best-suited solutions.

EXTENSION

"Insufficient actual worker" is one of the primary reasons that causes a difficulty in selecting best-suited solutions ; solutions could be developed by three sectors in terms of finance, technology and labor.

Because some solutions for continuous improvement require frequent field researches, high amount of time to analyze data and many evaluation workers, it is very hard to choose the best-suited solutions.

DESIGN STRATEGIES

Give incentives to encourage actual workers

SOLUTION ELEMENTS

Employee incentives

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Most of new threats are controversial

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Identifying Improvements

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Prioritize new threats

OBSERVATION

Unless confidential data support rising threats as evidences, the new threats are controversial. For this reason, it is even harder to prioritize new threats

EXTENSION

There are two different reasons that the new threats could be controversial. First reason is that different sectors have different interests. As making decisions for new threats, different interest groups could cause difficulties due to their interests. In general, public sectors look for solutions that help national economic, environment, policy and citizens more than pecuniary profits. On the other hand, private sectors' main propose is pecuniary profits.

Different tools and methods deliver different data or answers. There are many tools and methods to identify new threats. So, it is highly possible that one research tells new threats is coming in 5 years, and the other research announces that there are no new threats but momentary phenomenon.

DESIGN STRATEGIES

SOLUTION ELEMENTS

Create a tool to help to prioritize the level of seriousness or urgency of new threats — Threats prioritization matrix

Determine the reliance and sufficiency of data — Data qualification criteria

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Unable to find appropriate data

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

ASSOCIATED FUNCTIONS

1. Research historical disasters

OBSERVATION

Especially relevant historical data may be missing or inaccurate.

EXTENSION

In times of dire emergencies, such as a nuclear attack or the degeration of a civilization such as the Easter Island fiasco, historical accounts may have been destroyed.

In other emergencies historical data may have been manipulated to assuage fallout or to reward the victors.

DESIGN STRATEGIES

Use brainpower to plug holes and construct theories

SOLUTION ELEMENTS

Logical conjecture

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Too broad to summarize findings

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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SOURCE/S
Team deliberations

ASSOCIATED FUNCTIONS
Summarize findings

OBSERVATION

Summarize findings will be very hard due to a wide-ranging researches and different summary criteria.

EXTENSION

After the all the researches and evaluations, summarizing findings is very difficult due to a mass of information, reported with different data arrangement, criteria and format. This problem causes very serious mistakes. For instance, due to the different usages of terms, receivers misunderstand the data and summarize in a different manner. If there is a summary template that uses commonly thought out all the departments, summarizing work will be very efficient and productive. By doing that, organizations can save time and labors to use more important tasks.

DESIGN STRATEGIES

Categorise key essential factors

SOLUTION ELEMENTS

Summary document templates

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

All findings are interrelated complexly

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Extract key findings

OBSERVATION

Extracting key findings could be very hard because all findings could be interrelated complexly. One finding could be more important than others, but if the importance is generated by other findings, extracting only one is not a proper way.

EXTENSION

Project managers could lose important findings by doing extraction of findings. Most of findings are interrelated that it is hard to say what is more important than others. Therefore, extracting key finding by prioritization is not a proper way. Project managers need to understand the relationships between findings and to cluster groups.

Extracting wrong findings would be a huge wasting. For instance, In the early evaluation stage, some findings seem minor insights, but later they turn out as very important key insights.

DESIGN STRATEGIES

Demonstrate key findings

Use clustering tool

SOLUTION ELEMENTS

Pretesting findings

Insight matrix

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

No criteria to evaluate suitable reporting officers

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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SOURCE/S
Team deliberations

ASSOCIATED FUNCTIONS
Determine reporting officers

OBSERVATION
Reporting officers should be evaluated thoroughly because it is the main communication channel to share knowledge, ideas and opinions with others for making right decisions.

EXTENSION
Determining reporting officers is very important because reporting is the main communication channel in organizations. Deciding reporting officers without systematized evaluation could drive to make wrong project directions.

For instance, reporting officers could be elected by hierarchical positions, or personal relationships in organizations, but the officers don't understand projects well to acknowledge others who make big decisions for projects and organizational directions.

DESIGN STRATEGIES
Check officers' previous experience and achievement

SOLUTION ELEMENTS
Officers' personnel record

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Unorganized a mass of hard copy documents

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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CONTRIBUTORS
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Evaluate recommendation reports

OBSERVATION

Using hard copies to report is inefficient and unproductive in terms of sharing knowledge, saving money in long term and adjusting documents.

EXTENSION

Many institutions are still using hard copy documents to report, but that makes many problems and difficulties to be effective and productive in terms of sharing knowledge, saving money and time.

Difficulties

1. Different types of data need to be reported differently, but hard copy reporting can not deliver dynamic and directive feelings like visual, sound, and touch .
2. Report documents could be adjusted or fixed frequently.
3. Reporting officers need to make appointments to report.
4. It is getting more expensive to report with hard copy due to paper costs.
5. It is hard to store and organize all the documents, and not easy to find specific data when needed.
6. Hard copy reporting system has low capability to change standardized document format in the short amount of time.

DESIGN STRATEGIES

Use digital documents

Create standardized document format

Report verbally

SOLUTION ELEMENTS

Muti modal reporting

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Emergency situations are unpredictable

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Generating Action Plan

ORIGINATOR
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SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Establish schedule for implementation

OBSERVATION

Establishing schedule for Adaptive Climate Change implementation is very important, but emergency situations are so unpredictable that it is hard to keep the schedule or plan.

EXTENSION

Implementation schedule is very important to achieve project goals in time by using time and work forces effectively and systematically, but unpredictable situations causes keeping the schedule very difficult due to changing urgency priorities and essential data.

Before emergency situations, planners establish implementation schedule in terms of urgency, budget, public awareness and etc, but all the key factors of schedule could be changed entirely due to disasters like floods, earthquakes or blazes. Therefore, the schedule should be flexible enough to adjust those kinds of emergency situations, and also planners need to be establish appropriate the second and third emergency measures to reduce losses of lives and properties, and changes of implementation schedules.

DESIGN STRATEGIES

Create emergency coping plan separately

SOLUTION ELEMENTS

All treats

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Managing disparate expert opinion

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

Managing Scientific and Technical Information in Environmental Cases, Adler et al

ASSOCIATED FUNCTIONS

4. Predict region effects from global warming

5. Determine level of urgency for action

OBSERVATION

How should we manage disparate expert opinion that will arise when we are predicting the effects of global warming and determining the level of urgency of these threates?

EXTENSION

In such a broad and emotionally charged topic as global warming, there will be hundreds of experts consulted from a multitude of disciplines, and a variety of disagreements will undoubtably ensue. This places decision makers in a precarious position: how should they manage the information supplied to them and the advice bestowed upon them by this panoply of experts?

A major challenge will be the management of dozens of issues such as: unclear significance of data, politicized information, lack of expertise, inconclusive data, irrelevant information, data overload, theories unsupported by sufficient research, scientists being ahead of stakeholders, information not yet usable, poor issue framing, unrealistic expectations of scientists and differential tolerance for complexity.

DESIGN STRATEGIES

Explore joint gains, mediation, facilitation

SOLUTION ELEMENTS

Hire environmental mediator

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

No events with same magnitude

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Threats
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

http://tangible.media.mit.edu/projects/tdss/

ASSOCIATED FUNCTIONS

3. Draw conclusions from precedents

OBSERVATION

How does a region prepare for an event that has no historic comparitive equal?

EXTENSION

Regional responses to emergencies have historically been reactive rather than proactive. Regions master emergency response techniques only after major events--usually resulting in loss of life--occur. Preparing for events that have not occured will require cities to study past events that have similar consequences or causes. Computer simulations map out traffic flows, predict costs of disasters, and estimate loss of life from catastrophes, among other things.

It appears that most existing technology performs reasonably well at assessing short term disaster costs like tornados or floods. Longer-term simulations will be necessary to acquire a better idea of the extended costs and appropriate preparation.

DESIGN STRATEGIES

Create disaster simulations

SOLUTION ELEMENTS

Disaster simulator

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Inaccessibility of existing data

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Vulnerabilities
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

http://www.chipublib.org/digital/sewers/history5.html

ASSOCIATED FUNCTIONS

12. Identify new applications for infrastructure

OBSERVATION

When identifying new applications for existing infrastructure, how will we manage the problem of existing data being inaccessible?

EXTENSION

Identifying new applications for existing infrastructure is a challenging endeavor. Take for example Deep Tunnel in Chicago. Designed to deal with runoff and flood water, it keeps raw sewage from being dumped into Chicago rivers during heavy rains. What if a new use could be found for it such as a drinking water reservoir for times of drought? This would require in depth knowledge about the storage capacities of Deep Tunnel, its ability to reroute water to treatment facilities, and obviously the relative costs of the project. Similar data would be necessary to acquire for other infrastructure projects.

DESIGN STRATEGIES

Construct task force

Develop methods for cataloguing and monitoring infrastructure

SOLUTION ELEMENTS

Infrastructure task force

Infrastructure assessment tool

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Comprehensive and responsive

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Vulnerabilities
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

http://www.nyu.edu/intercep/

ASSOCIATED FUNCTIONS

14. Construct control center

16. Develop emergency action plans

OBSERVATION

When constructing a control system and developing emergency action plans, how do we ensure they are both comprehensive in breadth and responsive in action?

EXTENSION

The need for systemic emergency preparedness has escalated to an "all hazards" approach to managing emergencies and ensuring business continuity. Emergency systems must be able to manage hurricanes in the southeast, blackouts in the northeast, tornados throughout the midwest, wildfires in the soutwest, and a host of new emergencies likely to be experienced in the wake of global warming. Because most of the infrastructure in the U.S. is privately held, it will be crucial to engage these shareholders.

DESIGN STRATEGIES

Engage private sector

SOLUTION ELEMENTS

Private sector disaster management

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Sustainability difficult to quantify

DF-1

PROJECT
Urban Adaptivity to Climate Change

MODE
Diagnosis

ACTIVITY
Evaluating Vulnerabilities

ORIGINATOR
Erik Van Crimmin

CONTRIBUTORS

SOURCE/S
Interview, Darien Crimmin, 10/9/06

http://www.iisd.org/agri/GP-measure.htm

http://www.bae.ncsu.edu/programs/extension/publicat/arep/FINYRDST.html

ASSOCIATED FUNCTIONS
8. Identify and prioritize sustainability indicators

OBSERVATION

It is difficult to measure sustainability, especially in complex societies.

EXTENSION

The first problem with assessing sustainability indicators is that it is difficult even to define the term. The job of an indicator is to simplify, quantify and communicate information. In terms of sustainability this is some sort of metric that "would give decision-makers tools to rate policies and programs against each other." However, sustainability also encompasses economic and social objectives, which greatly complicates the equation and definition. The problem with these other objectives is that it introduces value-based decisions, which are relative and hard to quantify.

Quantifying sustainability is also difficult for temporal and technological reasons. Measurement of sustainability over an extended time period changes due to technological advances and improvements in efficiency.

DESIGN STRATEGIES
Multi-level solution generation

SOLUTION ELEMENTS
Interdisciplinary analysis

VERSION 1 DATE 7 September 05 DATE OF FIRST VERSION 7 September 05

Design Factor

TITLE

Managing scientific disagreement

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Vulnerabilities
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

ASSOCIATED FUNCTIONS

10. Evaluate current planning directives against threats

13. Deliberate initial adaptation strategies

OBSERVATION

How should we manage scientific disagreement while evaluating threats and planning appropriate action?

EXTENSION

It took an extended period of time for the scientific community to align on the causes and effects of global warming (it has mostly been debated in the public realm however). As new climatalogical findings come about scientists will no doubt disagree on a substantial number of them, as well as which approach will work best to alleviate the threats. There will need to be some type of expert review process that identifies prospective threats and solutions. This process will be most effective if it can fast track solutions to imminent, immediate and large-scale problems while continuously working through its library of proposed solutions. Additionally, it would be helpful if leading articles, studies and solutions were catalogued in a place easily accessible to the panel of scientists close to government leaders.

DESIGN STRATEGIES

Establish peer review process

SOLUTION ELEMENTS

Fast-track review process

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Managing political agendas

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Vulnerabilities
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

ASSOCIATED FUNCTIONS

11. Evaluate current planning directives against threats

13. Deliberate initial adaptation strategies

OBSERVATION

How should we manage political agendas while evaluating threats and planning appropriate action?

EXTENSION

Global warming will affect people to different degrees. Poorer regions with less developed infrastructure will be at greater risk than richer regions with highly developed coping abilities. Representatives from both factions will have to work together to develop solutions that work best for all shareholders. Systems will have to be in place that can manage disparate opinions and tools will have to be available that show the true preferences, benefits and alternatives of solutions so all shareholders have a clear perspective of their merit.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Assign clear leadership positions	Leaders among leaders
Establish formalized system of utility	Indifference curve analysis

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Difficulty quantifying capacities

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Vulnerabilities
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

Hacktivism: Securing the National Infrastructure, Mark Milone. Knowledge, Technology, & Policy, Spring 2003, Vol.16, No. 1, pp. 75-103

http://en.wikipedia.org/wiki/Critical_Infrastructure_Protection

ASSOCIATED FUNCTIONS

9. Determine current infrastructure capacities

OBSERVATION

Because of the interconnectedness of each of its parts, it is difficult to quantify the capacity of a region's infrastructure.

EXTENSION

How much stress can an infrastructure bear? In a complex, interconnected system where critical systems like energy delivery, banking, and transportation are inseparably linked, it is difficult to quantify the capacities of the overall infrastructure.

Every facet of a modern region's infrastructure is connected through some type of electronic network. Roadways are monitored by a grid of traffic lights, protected by a police force, and protected from flooding by a sewer system, all of which are paid for through a central banking system. All these sytems are built upon its own electronic infrastructure that is in some way dependent on other pieces of infrastructure working correctly. Therefore determining the capacity of a region's infrastructure in large part rests on measuring the strength of the networks that monitor each system and link the system of systems.

DESIGN STRATEGIES

Utilize network experts

Develop strength tests

SOLUTION ELEMENTS

Hire hacktivists

Disaster simulations

VERSION	1	DATE	20 September 05
DATE OF FIRST VERSION	13 September 05		

Design Factor

TITLE

Private sector footprint

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Diagnosis
ACTIVITY	Evaluating Vulnerabilities
ORIGINATOR	Erik Van Crimmin
CONTRIBUTORS	

SOURCE/S

ASSOCIATED FUNCTIONS

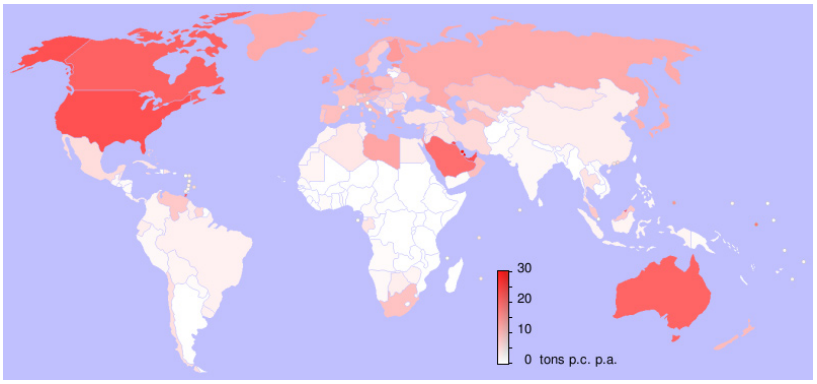
15. Determine region's carbon footprint

OBSERVATION

Determining the carbon footprint of a city or region will be difficult, especially in determining the impact of the private sector. The first step in curbing CO2 output and starting to adapt to climate change is understanding a region's current status. Once the state of affairs is known the region can move to take action in mitigating CO2 and adapting to higher temperatures.

EXTENSION

Carbon footprinting requires a lot of time and resources, follows an evolving methodological approach, and relies on local data that is frequently inaccessible. The graphic below illustrates the approximate CO2 emission per capita on a country basis.



DESIGN STRATEGIES

Tax incentives based on calculating

Make it easier for people to gather local data

SOLUTION ELEMENTS

Footprint incentives

Carbon footprint kit

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Resources not consolidated

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Determining effectiveness

ORIGINATOR
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Montgomery, John

SOURCE/S

Personal Observation

ASSOCIATED FUNCTIONS

Identify reliable data collection resources

Conduct performance evaluation

OBSERVATION

During collecting and conducting evaluation, unconsolidated resources cause many difficulties in terms of time, money, and reliance of data.

EXTENSION

To make confidential evaluation, it is essential to collect and process data. Disseminated Internet usage throughout most countries gives us the ability to collect information and share individual opinions with others regardless of distance.

However, most data are not consolidated in one place that causes work very inefficient and time consuming; they spend a mass of time to log in and out from one web-site to the others. They also collect these data from printed documents, but it is almost impossible to achieve main goal due to the limited labor forces and diverse data formats.

DESIGN STRATEGIES

Data network temp, all departments put their data into the temp

Educate intelligent managers for the ongoing project

SOLUTION ELEMENTS

E Temporary file storage

E Specialist training progam

VERSION DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

The lack of experienced workers

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Determining effectiveness

ORIGINATOR
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SOURCE/S

Personal Observation

ASSOCIATED FUNCTIONS

Determine evaluation criteria

Determine frequency of evaluation

Determine methods and tools for different evaluation

Conduct performance evaluation

Determine inspectors' qualification

OBSERVATION

In any process or system, hiring the experienced people in the team is extremely important due to not only saving time and money, but leading project to the right direction to achieve good consequences.

EXTENSION

Progressing a project without the experienced people makes works toilsome. If similar projects had done before, the following projects would be much easier and faster; the managers of new projects refer to the methods and tools that used old time for progressing new projects.

Two obvious benefits can be earned through hiring the people experienced relevant works to the new project. Workers in the projects would be productive and effective due to not wasting time and money by doing wrong things.

Experienced workers lead projects to the right direction. It is important to have a person who can see projects through wide lends to guide others to the path toward projects' ultimate goals.

DESIGN STRATEGIES

Seek experienced persons who can highly contribute to the project

Educate intelligent managers for the ongoing project

Give experienced workers high incentives

SOLUTION ELEMENTS

E Human resource alignment

M Specialist training program

E Promotion incentives

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE

Frequently changing essential data

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Determining effectiveness

ORIGINATOR
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CONTRIBUTORS
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Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine frequency of evaluation

OBSERVATION

Frequently changing essential data causes poignant difficulties to determine frequency of evaluation.

EXTENSION

It is important not only to evaluate all the activities from threat identification to external communication, but to determine how frequently the activities are evaluated to do effective and productive works in terms of time and money.

The main fact that makes the evaluation difficult is frequently changing essential data because the period of required evaluations is determined by the periodicities of essential data. If the data changes very frequently and irregularly, the evaluators will have a hard time to analyze and deliver proper information to adjust and develop processes that currently have many problems.

DESIGN STRATEGIES

Find alternative resource to replace frequently changing data

Determine frequency of changing essential data

SOLUTION ELEMENTS

Interchangeable data matrix

Data-Time graph

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE **No means to determine which methods & tools best-suited for assessment**

PROJECT **Urban adaptivity to climate change**

MODE **Evaluation**

ACTIVITY Determining effectiveness

ORIGINATOR Sang-Ho Lee

CONTRIBUTORS Wilmot, Eric; Ahn, Yoo-Jung; Chong, Irene; Crimmin, Erik; Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Determine methods and tools for different evaluations

OBSERVATION

Due to lack of evaluation experience, it is hard to determine which methods and tools best-suited for different evaluation.

EXTENSION

Many different methods and tools are available to evaluate all the activities in organizations, but it is hard to determine which methods and tools best suited for different evaluations. In addition, if there are no experts who had similar evaluation projects, it will be much harder to determine tools and methods.

Another problem is that even though one tool fits in certain kinds of evaluation activities, it would not be the best-suited or make other works more intricate due to incompatibility between other evaluation tools and methods.

DESIGN STRATEGIES

SOLUTION ELEMENTS

Test methods and tools by evaluating simple projects — Methods & tools pre-testing

Adapt methods and tools from different projects but similar evaluation criteria — Evaluation case study

VERSION 1 DATE 15 October 2006 DATE OF FIRST VERSION 15 October 2006

Design Factor

TITLE

Insufficient actual workers

PROJECT
Urban adaptivity to climate change

MODE
Evaluation

ACTIVITY
Determining effectiveness

ORIGINATOR
Sang-Ho Lee

CONTRIBUTORS
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Chong, Irene Crimmin, Erik
Montgomery, John

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

Conduct performance evaluation

OBSERVATION

Conducting evaluation requires many actual workers due to the various evaluation domains.

EXTENSION

"Insufficient actual worker" is the primary reason that causes conduct performance evaluation difficult because conducting evaluations requires frequent field researches, high amount of time to analyze data and many evaluation workers to do the detailed evaluation processes. Evaluation should be processed quickly and accurately to stimulate efficiency and productivity of the project cycles in organizations.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Seek volunteers or part-time workers	Part-time employment
Change existing employees' work-duties during the evaluation session	Temperary evaluation duty program
Simplify evaluation process, but keep efficiency	Simplified evaluation procedure

VERSION **1** DATE **15 October 2006** DATE OF FIRST VERSION **15 October 2006**

Design Factor

TITLE
Unable to monitor every process of every department

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Managing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Process Monitoring for Improving Sustainability: A Manual for Project Managers and Staff. SDC, 1999

ASSOCIATED FUNCTIONS

71. Monitor overall progress of the program

OBSERVATION

Although there are monitoring processes and supervisors in each department of the city, it is still difficult to monitor every process of the program. People are likely to forget their goals without unified tools.

EXTENSION

Monitoring the processes of the program is important, however it is extremely difficult to monitor every aspect of each department in the city.
Checklists are an excellent way to remind and verify tasks for project management. They enable project managers to have some basis for approaching a task and sharing thier knowledge to the project checklist. Checklists aid workers monitor the processes of their project by themselves. This does not mean that completing every item on the list is always crucial. It is a list of reminders of what may need to be done in each process.
Creating a unified monitoring tool is essential to check the condition of the process. It allows each department to manage its respective part of the project using same standards.

DESIGN STRATEGIES

Create a series of self-diagnosis checklist applied for every phase of the program

Introduce a process monitoring tool which provide program managers of each department to test their current conditions

SOLUTION ELEMENTS

[Speculative] Program Checklists

[Speculative] Process Monitoring

VERSION 2 DATE 12 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE

Unable to find quantitive data

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Qualitative vs Quantitative analysis. Lancaster University

ASSOCIATED FUNCTIONS

78. Organize Audits

OBSERVATION

Quantification is the the most effective method of evaluating systems in relation to each process of the program. Finding quantitatve data is often difficult due to the complexity and characteristics of the process.

EXTENSION

An audit is an evaluation of an organization, system, process, or project. The purpose of an audit is to create an independent assessment based on the condition of the program. An audit evaluates internal controls to determine if conformance will continue, and recommends necessary changes in policies, procedures, or controls.

Normally, quantitive data is used for evaluating processes, but not all data is quantified or explained. Therefore we need both quantative and qualitative tools to analyse the conditions and procedures of the program.

DESIGN STRATEGIES

Use analysis tool for quantifying complex data

Enhence the efficiency of the audit process

Introduce qualitative tools to explain complete, detailed description of the process which is difficult to quantify

SOLUTION ELEMENTS

[Existing] Quantitative Analysis

[Speculative] Qualitative Analysis

VERSION 2 DATE 11 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE

Too many standards exist

DF-1

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Implementation (Sub: Administration)	Recycling Industry Operating Standards (RIOS)	79. Incorporate professional/ industry standards
ACTIVITY	Optimizing		
ORIGINATOR	Yoo-Jung Ahn		
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery		

OBSERVATION

Different sets of standards between departments cause confusion. To prevent the confusion among processes and improve work efficiency, incorporated standards are required.

EXTENSION

There are a large number of standards regarding industries, technologies, and organizational processes. Standards play a significant role in guiding operations and interaction within the organization. They improve the efficiency of administrative processing and unify the system of each department. However too many standards create confusion between different departments and lower operational efficiency. Therefore incorporating standards is essential to optimize the processes of the organization.

DESIGN STRATEGIES

Create a unified guideline which explains the professional/industry standards

SOLUTION ELEMENTS

[Speculative] Standards Guide

VERSION 1 DATE 13 October 06 DATE OF FIRST VERSION 08 October 06

Design Factor

TITLE

Qualities of the auditors have not been determined DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Dawit Yimam SEID. **Expert Finding Systems for Organizations**: Problem and Domain Analysis and the DEMOIR Approach. University of California, 2002

Conglei Yao. **CNDS Expert Finding System for TREC 2005**, School of Electronics Engineering and Computer Science Peking University, 2005

ASSOCIATED FUNCTIONS

78. Organize Audits

OBSERVATION

Qualified experts are crucial in creating objective evaluation processes. However, no standards exist for selecting auditors.

EXTENSION

The auditing process should be proformed by a competent, independent, and objective auditor. Therefore, appropriate standards for the auditor should be determined before auditor selections begins.

Basically, there are two types of auditors: Internal auditors and external auditors. Internal auditors are typically hired by the organization. They both audit and report to either management or the board of directors, or both. External auditors(also called outside or independent auditors) typically work for public accounting firms which are regional, national, or internationally based. External auditors are selected by the board of directors.

Citywide programs normally require both types of auditors. Commisioners and experts in many fields are typically involved in the auditing.

DESIGN STRATEGIES

Guide the evaluators' overall duties and advice

Identify auditors' detailed qualities

Assign qualified auditors who can deal with finacial management for each department

SOLUTION ELEMENTS

[Speculative] Evaluation Handbook

[Speculative] Expert Finding System

VERSION 2 DATE 11 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE
No tools available for sharing and updating project progression

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Communication
ACTIVITY	Documenting
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

MONASH University. **Information Technology Strategic Plan.** 2005

ASSOCIATED FUNCTIONS

98. Generate progress reports
99. Update living documents
101. Distribute reports throughout organization
101. Distribute reports to public
102. Record obstacles and setbacks
105. Promote easy access to information

OBSERVATION

When a project is processed, project managers and administrators should record the progression of the project to communicate with other departments. Because the report should be updated often, effective recording tools are nessessary. The tools should be shared easily without complex processes.

EXTENSION

All organizations need to maintain records of decisions and transactions to support the day-to-day work process, as well as meeting the demands of organization accountability. For records to retain their value, formal records must be captured, structured, safeguarded, maintained, and disposed of in an organized manner.

An EDRMS(Electronic Documents and Records Management System) enables organizations to manage documents throughout the document's lifecycle, from creation to destruction. Typically, systems consider a document as a work-in-progress until it has undergone review, approval, lock-down and publication, at which point it becomes a formal record within the organization.

Using EDRMS, each department of the organization will have similar framework to record and update documents and also communicate effectively. After each project, the final reports will be moved to the project database permanently.

DESIGN STRATEGIES

Create a web based documenting and recording system for sharing and updating project data.

Enhence the efficiendy of communication

SOLUTION ELEMENTS

[speculative] Electronic Documents and Records Management System(EDRMS)

[Modified] Cyber Cafe

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE

No process for evaluating consultants

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Rodney Burnham. **What is a consultant?** Clinical Medicine Vol 1 No 2 March/April 2001

ASSOCIATED FUNCTIONS

80. Hire consultants to improve performance

OBSERVATION

Although city projects need various consultants, there is no specific process to evaluate these professionals.

EXTENSION

Consultants provide expert advice in a particular domain or area of expertise such as accountancy, technology, legal issues, human resources, marketing, finance, public affairs, communication, or other specializations.

Citywide projects frequently need consultants in many fields for solving various problems. Therefore the consultants' qualities are important, and an appropriate process for evaluating consultants is necessary. Also, the evaluation system requires a multifarious examination.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Create an appropriate evaluation process to select good consultants	[Speculative] Multi-D Evaluation
Assign qualified accountants who can provide useful advice for citywide projects	[Speculative] Expert Finding System

VERSION 2 DATE 09 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE
No person or group of people to agree on who become the oversight committee

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Managing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Online Voting, Parliamentary Office of Science and Technology, May 2001

http://scms.sc.doe.gov/orbit-search/SubjArea/FMO/FMO_SA.cfm

ASSOCIATED FUNCTIONS

75. Assign financial management oversight

OBSERVATION

Financial management is a crucial part of every project. City commissioners should be careful when they are assigning financial managers or organizing financial departments. For maintaining objectivity, they also need to create an oversight committee to monitor financial management activities.

EXTENSION

Assigning a financial oversight committee is more difficult than assigning financial managers because the people who monitor activities must not only have a broad knowledge of finance but also ethics.

For assigning oversight committee members successfully, a city must have a proper system for selecting the right people. This system should have both objectivity and correctness.

DESIGN STRATEGIES

Organize a group of people who elect and evaluate the members who work for a citywide project

Elect the management oversight committee members using the internet

SOLUTION ELEMENTS

[Speculative] Evaluation Committee

[Existing] e-voting

VERSION 2 DATE 15 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Needs additional time and resources

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Communication
ACTIVITY	Documenting
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Principles and Practices for On-line Publishing. The Journal of Neuroscience, April 1, 2001

Robert Niles, **Why do I love on-line publishing?** USC Annenberg School for Communication, Dec. 20, 2005

http://www.ojr.org/ojr/stories/051220niles/

ASSOCIATED FUNCTIONS

103. Publish project reports

OBSERVATION

After finishing a project or sometimes during the project, reports are published and disseminated over the city departments or outside of the organization. Publishing reports requires time and resources. The expense can be increased according to the number of the copies.

EXTENSION

Publication is a basic and classical method of sharing specific information with others. Certainly, it is tangible and clear to distribute project reports, but it needs time, cost, and labor.

As everyone knows, the rapid spread of the internet service have changed many aspects of work processes and also increased work efficiency. Nowadays many people use e-mail and internet instead of physical mail and libraries for communicating and searching data. According to recent research, e-book and e-publishing are affecting and changing the conventional publishing industry.

If city departments establish an online publishing system, they can save a lot of money and distribute the reports to more people, more quickly. It is also easy to update and access anytime, any place.

DESIGN STRATEGIES

Publish project reports on the internet

Create a project library and use an internet server to distribute the reports instead of publishing them (exclusively in the city departments)

SOLUTION ELEMENTS

[Modified] On-line Publishing

[Existing] Project library

VERSION 2 DATE 15 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE

Methods for promotion are not determined

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Elizabeth Theiss-Morse and John R. Hibbing. **Citizenship and Civic Engagement.** Department of Political Science, University of Nebraska, 2004

Promotion of Environmental Management. Kyushu Electronic Power Co., Inc, 2004

http://www.ns.ec.gc.ca/g7/cec.html

ASSOCIATED FUNCTIONS

83. Promote outside participation

OBSERVATION

In order to promote outside participation such as citizens, NGOs, and companies, commissioners must seek effective methods to encourage volunteers.

EXTENSION

Successful implementation of citywide programs requires a great amount of time and effort. Although city commissioners have a strong desire to proceed with the plan, it is impossible to operate it without outside participation. Plans associated with environmental problems need not only governmental policy, but also promotion methods for encouraging civic participation.

Creating a temporary or permanent department which deals with promotion events and assigning experienced staff can help to process this program smoothly. Also connecting with environmental associations and seeking advice can be useful to gain creative ideas to promote participations.

DESIGN STRATEGIES

Establish a department which deals with citywide participation

Organize a committee through contact with various associations interested in environmental problems

SOLUTION ELEMENTS

[Speculative] Environment promotion department

[Existing] Environmental committee

VERSION 1 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Lack of unity to draw up project reports

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Communication
ACTIVITY	Documenting
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Peter Williams. **The market for automated electronic forms & reports distribution.** Bloor Research, 2006

http://www.ci.lancaster.oh.us/about/Forms/

ASSOCIATED FUNCTIONS

98. Generate progress reports

OBSERVATION

Through all project processes, people create documents to record and disseminate information with others. However, too many formats exist to draw up reports among different departments. It decreases work efficiency and creates difficulties identifying the types of reports.

EXTENSION

Over the past couple of decades great progress has been made in the production of computer-based reports and other documents. Word processing and the spread of the internet have greatly eased report preparation and enabled much greater flexibility in documenting. However the use of many formats caused difficulties in the identification and communication of content. Therefore, these reports need unified forms to draw up and classify the categories of reports easily.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Introduce an automated report transformation system including report section indexing	[Speculative] e-forms
Encourage the use of an on-line city form directory over the departments of the city	[Existing] City Form Directory

VERSION 1 DATE 13 October 06 DATE OF FIRST VERSION 13 October 06

Design Factor

TITLE

Lack of tools and systems to improve capacity

DF-B

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Implementation (Sub: Administration)	Team deliberations	72. Improve organizational performance measures
ACTIVITY	Managing		
ORIGINATOR	Yoo-Jung Ahn		
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery		

OBSERVATION

Citywide projects require a lot of work and labor. The capacity of each department is extremely important, especially when the budget and resources are fixed.

EXTENSION

To improve the capacity of an organization, creating well organized systems is crucial. Although a citywide program requires a great amount of work, resources are always limited. However, if there are tools which enhance work efficiency, people can do more work than they can normally handle. Therefore developing quality systems and tools will help improve organizational work capacity.

DESIGN STRATEGIES

Develop an efficient tool which enhance work capacity and decrease people's work

SOLUTION ELEMENTS

[Speculative] Program Wizard

VERSION 1 DATE 06 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE

Lack of interest about the program

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Managing/Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

ASSOCIATED FUNCTIONS

73. Collect public/private feedback
74. Develop an open process toward improvement
81. Encourage participation across all departments
83. Promote outside participation

OBSERVATION

Although city commissions gather public opinion regarding environmental programs, it is still difficult to gain feedback without people's concern about the program.

EXTENSION

To increase the program's efficiency, it is important to collect multi-directional feedback. Difficulties in gathering people's opinion are caused not only by systematic problems but also indifference about the program.

Therefore program advisors and managers have to present good solutions to promote the program and increase public interest. Advertising information about the importance of the program is wise, as is encouraging citizen's direct participation.

DESIGN STRATEGIES

Create a system that people can inform on the cases of environmental disruption to organizations of the city

Promote campaigns which encourage environmental movement

SOLUTION ELEMENTS

[Speculative] Environment Monitor

[Modified] Green City

VERSION 1 DATE 06 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE

Insufficient resources

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Carter McNamara. **Designing and Operating Your Volunteer Management System.** Authenticity Consulting, LLC

ASSOCIATED FUNCTIONS

80. Hire consultants to improve performance

OBSERVATION

In order to improve operational performance, competent specialists are required. Professional consultants can help to optimize work efficiency for city programs.

EXTENSION

Sufficient resources are necessary for a convenient operation when processing a project. Possessing good human resource is extremely useful as professional consultants or advisors because they provide expert advice in particular issues. However, resources are usually limited and commissioners have to solve financial problems or create cheaper alternatives to overcome the problem.

To find the necessary funds for their project, the city may hold special events to raise money.
Encouraging the voluntary participation of local specialists can be a good way to overcome the problem.

DESIGN STRATEGIES

Find more resources

Find alternatives to get coverage

SOLUTION ELEMENTS

[Modified] Fund-raising event

[Speculative] Inside/outside volunteers recruiting

VERSION 2 DATE 12 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE
Insufficient information about management candidates

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Managing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Dawit Yimam SEID. **Expert Finding Systems for Organizations**: Problem and Domain Analysis and the DEMOIR Approach. University of California, 2002

ASSOCIATED FUNCTIONS

75. Assign financial management oversight

OBSERVATION

While program is processing, the role of the management staff is crucial. Therefore, seleting the right people and assigning work is important. However it is not easy to select qualified poeple without detailed information.

EXTENSION

Competent managers enable the program to be more effective and successful. Although every organization has its own human resource database, there is not detailed information about each staff member's talent or working ability. Besides, in a large organization, it is very difficult to know and remember every staff member's abilities and characteristics.

Assigning financial management oversight is very important for checking finanial conditions of every phase of the program. Therefore the qualities of a project leader are very important.

A well-organized human resources system will help organizations find competent people for each positions.

DESIGN STRATEGIES

Improve current human resources database of the city

Identify candidates' specific abilities and experience

Assign qualified experts who can deal with finacial management for each department

SOLUTION ELEMENTS

[Modified] Human pool

[Speculative] Expert Finding System

VERSION 2 DATE 14 October 06 DATE OF FIRST VERSION 08 October 06

Design Factor

TITLE

Insufficient information about experts

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Dawit Yimam SEID. **Expert Finding Systems for Organizations**: Problem and Domain Analysis and the DEMOIR Approach. University of California, 2002

Rodney Burnham. **What is a consultant?** Clinical Medicine Vol 1 No 2 March/April 2001

http://www.asktheexperts.org/

ASSOCIATED FUNCTIONS

80. Hire consultants to improve performance

OBSERVATION

Whenever a new program is processed, it is essential to select the best experts for improving performance of the project. However, seleting the right people is difficult without detailed information about the experts.

EXTENSION

Prior to hiring consultants, city HR managers should consider the qualities and the background experiences of the consultant. Although city HR managers can get the information of the experts, there maybe not detailed description about each consultant's talent or working ability.

Consultants provide expert advice in a particular domain or area of expertise for citywide projects. For this reason, the qualities of consultants are very important. A well-organized human resource system will help a city find competent people when hiring experts.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Know experts' specific abilities and characteristics	[modified] Human Pool
Identify people who fit for the project	[speculative] Expert Finding System
Create a city expert network to make a connection with many specialists	[speculative] Expert Network

VERSION 2 DATE 15 October 06 DATE OF FIRST VERSION 07 October 06

Design Factor

TITLE

Inefficient and complex work processes

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Communication
ACTIVITY	Documenting
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Peter Williams. **The market for automated electronic forms & reports distribution.** Bloor Research, 2006

ASSOCIATED FUNCTIONS

100. Distribute reports throughout organization

101. Distribute reports to public

OBSERVATION

Through all project processes, people create many documents to record and disseminate information with others. These reports are constantly updated and distributed as electronic files, printed reports by e-mail, or physical mail.

EXTENSION

Word processing and desktop publishing improvements have greatly eased report preparation and enabled much greater flexibility in documenting. Yet, when completed, these reports remain to be distributed.

When there are only a couple of reports, distributing reports is not a problem. If they are revised and updated several times, reports become more complicated and many different versions are created. Therefore an automated system which stores the files at a safe repository and distributes the files to staff and commissioners when updated is necessary.

DESIGN STRATEGIES

Introduce an automated report transformation system including report section indexing

Develop an automated distribution system that distributes reports to registered people

SOLUTION ELEMENTS

[Speculative] e-forms

[Speculative] Auto Distribution System

VERSION 1 DATE 14 October 06 DATE OF FIRST VERSION 14 October 06

Design Factor

TITLE
Difficulties in gaining consensus on the best approach

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Rachel Williams & Andrew McLeod. **Introduction to Consunsus Decision-Making.** Northwest Cooperative Development Center. April, 2006

ASSOCIATED FUNCTIONS

78. Organize Audits

OBSERVATION

Reaching an agreement on which approach is the best way for the audit is difficult because department members have different views about the issue.

EXTENSION

There is considerable debate and research into both collective intelligence and consensus decision-making.
Reaching a consensus usually involves collaboration, rather than compromise. Instead of one opinion being adopted by a plurality, people are brought together when a convergent decision is developed.

When organizing an audit, many things should be considered in many different directions. An audit could result in group polarization, where staff members will be more flexible in comparison to their prior individual positions.

DESIGN STRATEGIES

Entire group makes decision through a deep discussion

SOLUTION ELEMENTS

[Speculative] Prisoner's dilemma

VERSION 2 DATE 14 October 06 DATE OF FIRST VERSION 06 October 06

Design Factor

TITLE
Difficulties in developing new processes and technologies

DF-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

Team deliberations

ASSOCIATED FUNCTIONS

82. Consistently assess new processes and technologies

OBSERVATION

New technologies and systems improve the city's operational efficiency. However developing new technologies and processes requires a great amount of time and effort.

EXTENSION

Introducing and assessing new systems or technologies is very useful optimizing city's sustainable processes. Of course, developing new technologies is difficult, but it is valuable because it helps solve many problems including environmental issues.

Encouraging technological development by public and private institutions is important. Making technical alliances with other advanced cities and exchanging new technologies is an effective method to improve the organization's capacity for solving special problems.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Hold a regular tech fair to introduce new technologies and process	[Speculative] Tech fair
Make technical alliances with other advanced cities	[Existing] Technical interchange with other cities

VERSION 2 DATE 13 October 06 DATE OF FIRST VERSION 08 October 06

Design Factor

TITLE

No means to collect and develop communication

DF-B

PROJECT	Urban Adaptivity to Climate Change
MODE	Communication
ACTIVITY	Managing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SOURCE/S

ASSOCIATED FUNCTIONS

73. Collect public/private feedback

74. Develop an open process toward improvement

OBSERVATION

Collecting feedback from public and private sectors is important to develop communication, however, it is not easy to collect both inside and outside opinion from city commissioners and staff to NGOs and citizens.

EXTENSION

Collecting feedback during the project provides useful information. Asking for opinions from public and private sectors can identify features of the program that people find helpful, give project managers a more informed basis for making decisions, and open lines of communication with people who might not otherwise volunteer their comments.

DESIGN STRATEGIES

Make regular online surveys to collect public/private opinion

Create discussion groups which are organized with city officials, experts, and citizens

SOLUTION ELEMENTS

[Speculative] Open Survey

[Speculative] Discussion Group

VERSION 1 DATE 06 October 06 DATE OF FIRST VERSION 06 October 06

Activity Analysis

ACTIVITY

Optimizing

PROJECT	Urban Adaptivity to Climate Change
MODE	Implementation (Sub: Administration)
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

SCENARIO

An urban adaptation plan is modified and refined through evaluation processes and feedback from all users and departments.

USERS

Citizens
Department Administrators
Mayoral staff
Consultants
City councilperson
Program Directors

SYSTEM COMPONENTS

Project database
Personnel database
Communication tools
Planning tools
Project management tools
Budget Projection
Assessment tools

ENVIRONMENTAL COMPONENTS

City Council
Aldermanic Council
Planning Commission
Department of Revenue

SYSTEM FUNCTIONS	ASSOCIATED DESIGN FACTORS
78. Organize Audits	Difficulties in gaining consensus on the best approach Unable to find quantitive data Qualities of the auditors have not been determined
79. Incorporate professional/ industry standards	Too many standards exist
80. Hire consultants to improve performance	Insufficient resources Insufficient information about experts No process for evaluating consultants
81. Encourage participation across all departments	Lack of interest about the project
82. Consistently assess new processes and technologies	Difficulties in developing new processes/technologies
83. Promote outside participation	Methods for promotion are not determined

Design Factor

TITLE

Insufficient funds

DF-1041

PROJECT	Urban Adaptivity to Climate Change
MODE	Resource Organization
ACTIVITY	Apportioning
ORIGINATOR	John Montgomery
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin

SOURCE/S

Team Deliberations

ASSOCIATED FUNCTIONS

20. Balance Human/Financial Resources

OBSERVATION

Because the problem is so complex, it may be difficult to establish the proper balance of funds and human resources. If balance is not maintained, the process may get bogged down.

EXTENSION

The planning process for climate change adaptivity can be expected to be very complex including the balance of personnel and funding. It should be expected that traditional on-going city activities will compete for personnel and funding of this effort.

There is a very real possibility that special efforts must be employed to maintain sufficient funding (as well as other assets, both human and real). The process to secure sufficient resources should include all potential strategies. This may include specialists to handle this critical task as well as specialized software or policies. It should also include specific strategies or policies that make the most of available resources.

DESIGN STRATEGIES

Provide dual tracking of staff capabilities and available budget

SOLUTION ELEMENTS

[Speculative] Staff vs Budget Tracker

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE
Competition for funds from traditional municipal obligations

DF-1042

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Resource Organization	Team Deliberations	20. Balance Human/ Financial Resources
ACTIVITY	Apportioning		
ORIGINATOR	John Montgomery		
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin		

OBSERVATION

Even with a significant commitment from the City for adaptation to global climate change, there can be competition for funding from ongoing city services or other emergency situations.

EXTENSION

Operation staff may not be enough to complete planning process as anticipated. Manpower shortages generally have two consequences. First, the project may not be competed on time. The people present at the site may simply be unable to complete the work. Second, the team on site may be able to complete the work, but at considerable expense to themselves as well as the quality of the job. The problem is one of allocating the correct amount of resources.

In order to command the needed resources, one strategy is to develop an overwhelming case for the very critical nature of this effort. The long-term benefits of the plan must be effectively known at the appropriate staff level; likewise the negative consequences of business as usual must be made public.

Alternatively, the plans for the process may be scaled back to fir the available funds. If complete funding is not available, special care must be made so that the plan may be completed to sufficient level with the remaining funds available.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Build overwhelmingly compelling case for priority	[Speculative] Project Buildup
Scale back operational demands	[Speculative] Operational Scale-Back

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Competition for human resources

DF-1043

PROJECT	Urban Adaptivity to Climate Change
MODE	Resource Organization
ACTIVITY	Apportioning
ORIGINATOR	John Montgomery
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin

SOURCE/S

Team Deliberations

ASSOCIATED FUNCTIONS

20. Balance Human/ Financial Resources

OBSERVATION

Even with a significant commitment from the City for adaptation to global climate change, there can be competition for funding from ongoing city services or other emergency situations.

EXTENSION

Although a citywide program requires a great amount of work, resources are usually limited. Successful execution of the adaptive planning process will almost certainly require a large staff. Although the city may have a quite large staff, many key personnel may already be assigned to some other task within the governmental operations.

For a successful outcome, a plan must be in place to ensure sufficient staffing at each level. This must be monitored on a regular level to ensure that assigned staff are not pulled for competing duties. All available resources must be employed including temporary support, or outside consultants with specialized experience.

DESIGN STRATEGIES

Allocate the correct number of people to a project.

Frequent detailed monitoring

SOLUTION ELEMENTS

[Speculative] On-Target Planning

[Speculative] Additional Volunteer Staff

[Speculative] Floating Staff

[Speculative] Project Management

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Competition form other municipal initiatives

DF-1044

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Resource Organization	Team Deliberations	21. Develop Schedules
ACTIVITY	Apportioning		
ORIGINATOR	John Montgomery		
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin		

OBSERVATION

Even with a significant commitment from the City for adaptation to global climate change, there can be competition for funding from ongoing city services or other emergency situations.

EXTENSION

Like the issues of competition for personnel, there will almost certainly be competition for scheduling of the planning process. The planning process requires a great amount of work, and time resources are by default always limited. Time of staff is bound to be limited and all staff may not be assigned full time to this project. Successful execution of this planning process will require a significant amount of staff time to prevent the schedule from tending to slip. Additional resources may be needed There will likely be a constant competition for staff time for other tasks within the governmental operations.

The schedule must be monitored on a regular level to ensure that assigned staff are have sufficient time for assigned duties. Otherwise, development of the process may be hindered, and the working teams involved will not be able to make the established deadlines. When dealing with a multi-disciplinary team, the process of coordinating team members becomes a difficult task and requires specialized effort.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Plan detailed organization	[Speculative] Daily Monitoring System
Provide frequent detailed monitoring	
Organize the process	[Speculative] Smart Agenda
Provide deadline incentives	[Speculative] Objective Incentivizer

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE
Scientific data not clear enough to develop scope

DF-1045

PROJECT	Urban Adaptivity to Climate Change
MODE	Resource Organization
ACTIVITY	Apportioning
ORIGINATOR	John Montgomery
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin

SOURCE/S

Team Deliberations

ASSOCIATED FUNCTIONS

23. Develop scope

OBSERVATION

Scientific data on this subject is not consistent. There are conflicting predictions even from scientists who have similar goals and agendas.

EXTENSION

There may be a shortage of credible data for this analysis because of the very complex nature of a problem this vast. This is complicated because of the scarcity of precedents and that trends in climate change develop over such long times. Date trends are constructed by connecting multiple data points that imply a pattern. In the case of climate change forecasts, the reliable data points may be too few to map across time to develop a traditional model for a reliable forecast the future. The presentation of trend data may present future patterns, but it may be difficult for the public to understand the causes.

The traditional data mapping processes may not have an appropriately clear research protocol to manage the collection of data for this effort. This activity will likely require a degree of specialization and a thorough understanding of research methods, which may not always be available.

Special analysis methods may need to be employed.

DESIGN STRATEGIES

Cluster similar strategies

SOLUTION ELEMENTS

[Speculative] Strategy Clusters

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Activity Analysis

ACTIVITY

Building Alliances

PROJECT Massive Change: Adaptive Planning for Urban Sustainability Under Climate Change

MODE Preparation, Program Definition

ORIGINATOR Irene Chong

CONTRIBUTORS Yoo Jung Ahn
Irene Chong
Erik Van Crimmin
Sangho Lee
Eric Wilmot

SCENARIO The city will need to build allinaces with other governments, private firms and NGO's to successful implement an adaptive change plane.

USERS

City of Chicago
Other municipal governments
Higher levels of government
Private firms
NGO's

SYSTEM COMPONENTS

Database
Computer
Print collateral
Telephone
Computer
Internet

ENVIRONMENTAL COMPONENTS

Meeting Room
Information portal
Call centre

SYSTEM FUNCTIONS

F-25 Establish likely partners and objectors

F-26 Establish partnership agendas

F-27 Establish methods to diffuse objectors

F-28 Solicit buy-in from neutrals

F-30 Maintain partnership with alliances

ASSOCIATED DESIGN FACTORS

Time consuming to establish and maintain

Lack of trst

Establishing compromising point may be difficult

Appropriate communication partners or medium may not be available

Message are not clearly communicated

VERSION 1 DATE 30 September 06 DATE OF FIRST VERSION 30 September 06

Activity Analysis

ACTIVITY

Identifying Current Capabilities

PROJECT Massive Change: Adaptive Planning for Urban Sustainability Under Climate Change

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ORIGINATOR Irene Chong

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Eric Wilmot

SCENARIO The current state of the city will determine what the city is capable of achieving in both the short-term and long-term.

USERS

Municipal government workers
Higher levels of government
Private firms
NGO's

SYSTEM COMPONENTS

Computer
Internet
Audit Reports

ENVIRONMENTAL COMPONENTS

SYSTEM FUNCTIONS

F-32 Identify conditions of departments/ divisions

F-33 Identify organizational competencies

F-34 Project capacity and costs for "Business as Usual"

F-35 Identify tradeoffs of potential solutions

F-36 Identify major contributors to city's carbon output

ASSOCIATED DESIGN FACTORS

The relationship between department can make identification of conditions difficult

Workers do not understand the core competencies of the organization

Data inaccessible or inaccurate

Data is too complex

VERSION 1 DATE 30 September 06 DATE OF FIRST VERSION 30 September 06

Design Factor

TITLE

Unknown availability of human resources

DF-1031

PROJECT	Urban Adaptivity to Climate Change
MODE	Resource Organization
ACTIVITY	Compiling Resources
ORIGINATOR	John Montgomery
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin

SOURCE/S

Team Deliberations

ASSOCIATED FUNCTIONS

17. Seek human capital

OBSERVATION

The issue of adaptation to global climate change is very large and complex. It could require a very large staff to properly address.

EXTENSION

Successful execution of the adaptive planning process requires a large staff with the correct skills. Although the city may have a quite large staff, the ideal personnel with the right skills may not be easily identified and it may be difficult to ensure that those key people are not already assigned to some other task within the governmental operations.

A crucial factor is being able to match the available personnel and skills already on staff and to identify those shortcomings that may exist. Key factors are to determine the suitability of the potential participants who will manage the planning process and to identify their relevant experience. Once identified, there must be a way to continuously track this information and manage the changes in that database as new issues arise of new personnel are added to the team.

Even with this information available, there will certainly be voids in the fabric of personnel and skills that must be filled with new employees, temporary support, or expert consultants with specialized experience.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Determine suitability of participants with relevant experience	[Speculative] Staff Skills Analyzer
Provide detailed tracking of participants and skills	[Speculative] Team Profile Database
Seek specialized experience	[Speculative] Professional Locator

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Conflicting agendas of participants

DF-1032

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Resource Organization	Team Deliberations	17. Seek human capital
ACTIVITY	Compiling Resources		
ORIGINATOR	John Montgomery		
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin		

OBSERVATION

Participants often have an agenda that conflicts with the overall goal and/or with the agendas of their colleagues.

EXTENSION

To manage this complex planning process successfully, a city must have an effective system dealing with the conflicts that are certain to develop. The system needs to be both rapidly responsive and objective. The subject matter for dealing with global climate change is fraught with data that will be conflicting at times and almost certainly subject to differing interpretations.

There must be several strategies used to minimize conflict and maximize the progress of the planning. For one, care must be exercised to develop a team with a common goal and a strong desire to place the goals of the process above individual objectives. A peer review group to quickly deal with those problems that do develop is also crucial, with a goal of strong reliance on collective intelligence and consensus decision making.

The abilities and temperaments of participants should be closely tracked in a personnel/skills database. This will allow the best use of personnel whether in long-term assignments or in short, specifically focused problem solving teams.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Provide round table review to resolve potential conflicts	[Speculative] Roundtable Review
Develop teams of compatible participants	[Speculative] Team Harmony
Provide detailed tracking of participants and skills	[Speculative] Team Profile Database
Develop structure that allows personnel transfer	[Speculative] Team Trading

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Insufficient funding for projects

DF-1033

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Resource Organization	Team Deliberations	18. Establish planning budget
ACTIVITY	Compiling Resources		
ORIGINATOR	John Montgomery		
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin		

OBSERVATION

Even with a significant commitment from the City for adaptation to global climate change, there can be competition for funding from ongoing city services or other emergency situations.

EXTENSION

The planning process for urban adaptivity to global climate change can be expected to be very complex and could be costly. To more effectively manage such a complex process, a robust and active process should be employed to tract costs of the process and to estimate costs to society for both actions and inactions.

Even with an effective budget planning process, it can be expected that traditional on-going city activities will compete for funding of this effort. There is a very real possibility that special efforts must be employed to maintain sufficient funding (as well as other assets, both human and real). Special effort must be made to ensure that this planning process has all the resource it needs.

The process to secure sufficient resources should include all potential strategies. This may include specialists to handle this critical task. It should also include specific strategies or policies that make the most of available resources.

DESIGN STRATEGIES	SOLUTION ELEMENTS
Proactively track cost/benefit	[Speculative] Proactive Budget Tracker
Establish acquisition team	[Speculative] Acquisition Team
Develop leverage strategies	[Speculative] Budget Magnifier

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Data from previous activities not ready

DF-1034

PROJECT	Urban Adaptivity to Climate Change	SOURCE/S	ASSOCIATED FUNCTIONS
MODE	Resource Organization	Team Deliberations	19. Gather planning data and tools
ACTIVITY	Compiling Resources		
ORIGINATOR	John Montgomery		
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin		

OBSERVATION

Because of the complexity of this issue, schedules are likely to slip and data may not be ready when needed to keep the planning on schedule. Needed planning tools may be inaccessible.

EXTENSION

Credible and useful, definitive information is difficult to access for this subject. This can make it very difficult to remain on schedule for deliverables. Similarly, this complex planning process will tax the abilities to provide basic human, financial, and other resources. Special process and special teams may be needed to ensure continued progress.

Independent assessment based on the condition of the program may be a useful tool in this analysis. This will aid in the recommendation of necessary changes in policies, procedures, or controls to keep the process on schedule

DESIGN STRATEGIES	SOLUTION ELEMENTS
Establish special acquisition team for data or resources lacking	[Speculative] Acquisition Team
Identify critical data and track closely	[Speculative] Data Tracker

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Unable to access needed tools

DF-1035

PROJECT	Urban Adaptivity to Climate Change
MODE	Resource Organization
ACTIVITY	Compiling Resources
ORIGINATOR	John Montgomery
CONTRIBUTORS	Eric Wilmot Irene Chong Yoo-Jung Ahn Sang Ho Lee Erik Van Crimmin

SOURCE/S

Team Deliberations

ASSOCIATED FUNCTIONS

19. Gather planning data and tools

OBSERVATION

Because of the complexity of this issue, schedules are likely to slip and data may not be ready when needed to keep the planning on schedule. Needed planning tools may be inaccessible.

EXTENSION

Planning new systems and technologies for the city to adapt to climate change may require many new tools for analysis and for generation of new solutions. Developing these new technologies can be difficult, even though it will be immensely valuable in solving these difficult environmental issues. The planning team may need to development its own specialized tools to maximize their effectiveness.

Special teams should be devoted to this task to ensure that new tools match the intended purpose and address both the specific issues at hand and are appropriate to the potential solutions.

DESIGN STRATEGIES

Establish special acquisition team for data or resources lacking

Identify critical data and track closely

SOLUTION ELEMENTS

[Speculative] Acquisition Team

[Speculative] Data Tracker

VERSION 2 DATE 26 November, 06 DATE OF FIRST VERSION 15 October, 06

Design Factor

TITLE

Dealing with Complex Data

DF-1

PROJECT
Adaptive Planning for Climate Change

MODE
Preparation

ACTIVITY
Building Alliances

ORIGINATOR
Irene Chong

CONTRIBUTORS
Yoo-Jung Ahn
Irene Chong
Erik Crimmin
Sang-ho Lee
John Montgomery
Eric Wilmot

SOURCE/S

http://www.managing-information.org.uk/elements.htm

http://www2.sims.berkeley.edu/research/projects/how-much-info/index.html

ASSOCIATED FUNCTIONS

F-34 Project capacity and costs for "business as usual"

F-35 Identify tradeoffs and potential solutions

F-36 Identify major contributors to city's carbon output

OBSERVATION

The process of adapting to climate change is a long and difficult process, with enormous amounts of information coming out. The task is so enormously complex; no single entity can battle it on its own.

EXTENSION

Private institutions, government bodies and other public institutions are constantly researching new information to combat problems. The strength of the labor force combined is quite remarkable. Even more so is the tremendous amount of information that is created.

Back in the days when information still traveled by means of pen and paper, dissemination was slower and more challenging. Information was much more localized. However, with the advent of digital technology, information creation and distribution has exploded. People are simultaneously bombarded by numerous touch points, such as e-mail, the internet, mass media publication and cell phones.
Simply to store the global yearly production of print, film, optical, and magnetic content would require 1.5 billion gigabytes of storage, which amounts to approximately 250 megabytes per person.

Keeping up becomes more challenging, as information overload makes it increasingly difficult to make thorough decisions, as well remain up-to-date on relevant topics. Tools must be in place to help filter and breakdown complex information to more meaningful bite-size chunks that can be understood and used effectively.

DESIGN STRATEGIES

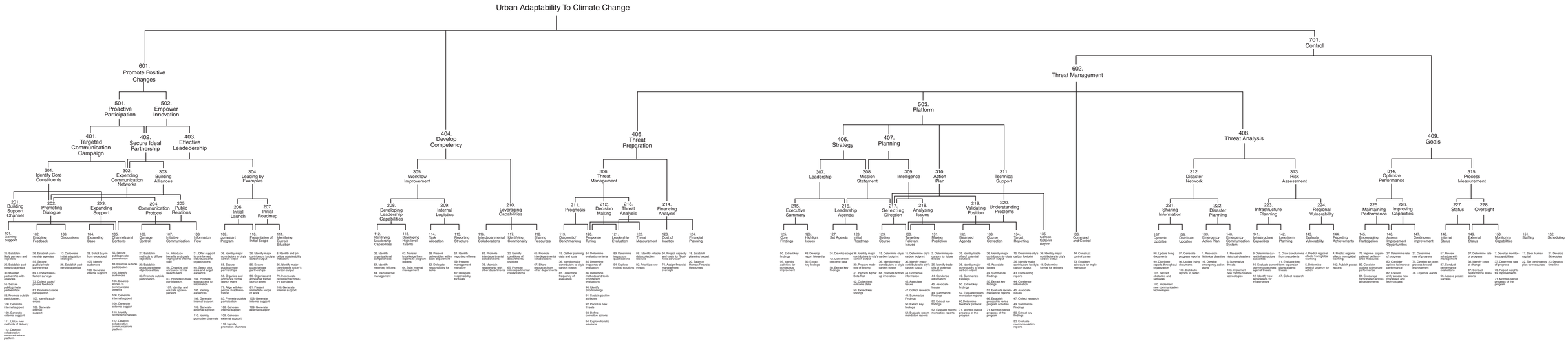
SOLUTION ELEMENTS

Connect all the small components of related infrastructure	[speculative]	Connecting the dots
Identify tradeoffs and potential solutions	[speculative]	Credit program
Identify major contributors to city's carbon output	[existing]	Life cycle analysis

VERSION 1 DATE 15 October 2006 DATE OF FIRST VERSION

Massive Change: Adaptive Urban Planning for Climate Change

Information Structure



Urban Adaptivity To Climate Change

Diagnosis

101. Evaluating Threats

1. Research historical disasters

2. Determine precursors for future threats

3. Draw conclusions from precedents

4. Predict regional effects from global warming

5. Determine level of urgency for action

6. Summarize threats

7. Develop monitoring capabilities

102. Evaluating Vulnerabilities

8. Identify and prioritize sustainability indicators

9. Determine current infrastructure capacities

10. Evaluate current planning directives against threats

11. Evaluate long term expansion plans against threats

12. Identify new applications for infrastructure

13. Deliberate initial adaptation strategies

14. Construct control center

15. Determine city's carbon footprint

16. Develop emergency action plans

Preparation

Resource Organization

103. Compiling Resources

17. Seek human capital

18. Establish planning budget

19. Gather planning data and tools

104. Apportioning

20. Balance Human/Financial Resources

21. Develop Schedules

22. Set contingency plan for resources

23. Develop time line

24. Develop scope

Program Definition

105. Building Alliances

25. Establish likely partners and objectors

26. Establish partnership agendas

27. Establish methods to diffuse objectors

28. Solicit buy-in from undecided

29. Establish protocols to keep objectors at bay

30. Maintain partnership with alliances

31. Offer support to uninformed individuals and organizations

106. Defining Current Capacities

32. Identify conditions of departments/divisions

33. Identify organizational competencies

34. Project capacity and costs for "Business as Usual"

35. Identify tradeoffs of potential solutions

36. Identify major contributors to city's carbon output

37. Determine rate of progress

38. Identify costs of change

107. Prototyping

39. Prepare methods of testing

40. Select pilot area and target audience

41. Perform Alpha/Beta Test

42. Collect test outcome data

Recommendation

108. Formulating Reports

43. Formulating reports

44. Condense information

45. Associate Issues

46. Determine format for delivery

47. Collect research

48. Develop report hierarchy

109. Generating Action Plan

49. Summarize Findings

50. Extract key findings

51. Identify reporting officers

52. Evaluate recommendation reports

53. Establish schedule for implementation

Implementation

Execution

110. Initiating

54. Introduce benefits and goals of project to internal staff

55. Secure public/private partnerships

56. Organize and announce formal launch event

57. Review schedule with management

58. Present deliverables within each department

59. Present management hierarchy

60.Determine feedback protocol

61. Present immediate scope of work

111. Operating

62. Delegate responsibility for tasks

63. Transfer knowledge from experts to program leaders

64. Train internal management

65. Promote interdepartmental collaborations

66. Establish protocol to revise program activities

67. Share resources from other departments

68. Promote bottom up innovation

69. Conduct satisfaction surveys

70. Report insights for improvements

Administration

112. Managing

71. Monitor overall progress of the program

72. Improve organizational performance measures

73. Collect public/private feedback

74. Assign financial management oversight

75. Develop an open process toward improvement

76. Maintain relationship with other departments

77. Align with key people in administration

113. Optimizing

78. Organize Audits

79. Incorporate professional/industry standards

80. Consider options to improve performance

81. Encourage participation across all departments

82. Consistently assess new processes and technologies

83. Promote outside participation.

Evaluation

114. Determining Effectiveness

84. Determine evaluation criteria

85. Determine frequency of evaluation

86. Determine methods and tools for different evaluations

87. Conduct performance evaluations

88. Identify reliable data collection resouces

89. Determine inspectors qualifications

115. Identifying Improvements

90. Identify Shortcomings

91. Sustain positive attributes

92. Prioritize new threats

93. Define corrective actions

94. Explore holistic solutions

95. Identify activities for continuous improvment

96. Assess project success

Communication

116. Documenting

97. Generate progress reports

98. Update living documents

99. Distribute reports throughout organization

100. Distribute reports to public

101. Record obstacles and setbacks

102. Publish project reports

103. Implement new communication technologies

104. Promote easy access to information

117. Promulgating

105. Identify audiences

106. Develop stories to communicate benefits

107. Identify and educate spokespersons

108. Generate internal support

109. Generate external support

110. Identify promotion channels

111. Utilize new methods of delivery

112. Develop collaborative communications platform

113. Align figureheads for endorsement

Massive Change: Adaptive Planning for Urban Sustainability under Climate Change

Function Structure

Solution Element

TITLE

Expert Finding System

existing
modified
speculative

SE-1

PROJECT	Urban Adaptivity to Climate Change
MODE	Communication
ACTIVITY	Optimizing
ORIGINATOR	Yoo-Jung Ahn
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery

DESCRIPTION

An automatic searching system to locate experts who are the most suited for positions in a specific project.

SOURCE

Dawit Yimam SEID. **Expert Finding Systems for Organizations**: Problem and Domain Analysis and the DEMOIR Approach. University of California, 2002

PROPERTIES

- Profile-based finder
- Information and networks about experts
- Organization's expert management system
- Database
- Data mining tool
- Evaluation tool

FEATURES

- Provides detailed information of experts' background including abilities, past experiences, and characteristics
- Enables scoring and comparison of individuals performance to organize project teams
- Updates and modifies organization's human resources constantly
- Simulates project teams in the program
- Creates a professional expert network for developing city's projects

ASSOCIATED FUNCTION/S

17. Seek human capital
77. Align with key people in administration
80. Consider options to improve performance
81. Encourage participation across all departments
108. Generate internal support
109. Generate external support

SOURCE DESIGN FACTOR/S

Insufficient information about experts
Insufficient information about management candidates
No process for evaluating consultants
Qualities of the auditors have not been determined

VERSION **1** DATE 03 December 06 DATE OF FIRST VERSION 03 December 06

Solution Element

TITLE

Project library

existing
modified
speculative

SE-2

PROJECT	Urban Adaptivity to Climate Change	DESCRIPTION
MODE	Communication	An internet-based database system to store and search city departments' projects.
ACTIVITY	Documenting	
ORIGINATOR	Yoo-Jung Ahn	
CONTRIBUTORS	Eric Wilmot Irene Chong Sang Ho Lee Erik Van Crimmin John Montgomery	SOURCE **National Electronic Library, FinELib's strategy 2004-2006**, Helsinki University Library. The National Library of Finland

PROPERTIES

- Electronic library for compiling and sharing information
- Internet-based search engine
- City's projects database
- On-line publishing tool

FEATURES

- Records and stores every information about city's projects
- Enables searching past projects database
- Generates and update living reports for current projects in progress
- Enables on-line publishing using e-forms
- Promotes sharing information among city departments

ASSOCIATED FUNCTION/S

97. Generate progress reports
98. Update living documents
99. Distribute reports throughout organization
101. Record obstacles and setbacks
102. Publish project reports
103. Implement new communication technologies
104. Promote easy access to information

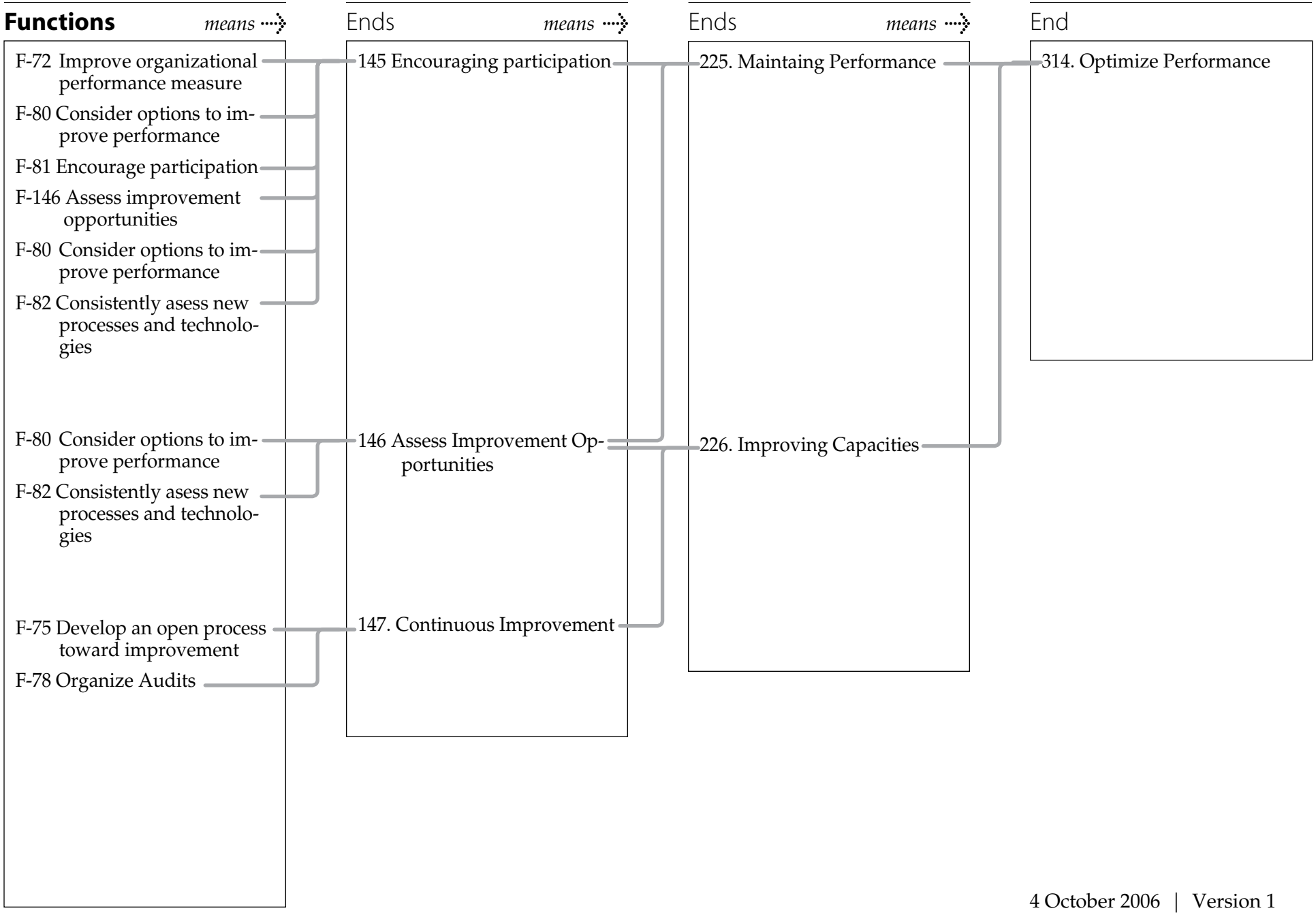
SOURCE DESIGN FACTOR/S

Difficult to search and keep project reports
Needs additional time and resources

VERSION **1** DATE 04 December 06 DATE OF FIRST VERSION 04 December 06

ProjectTitle Means/Ends Analysis

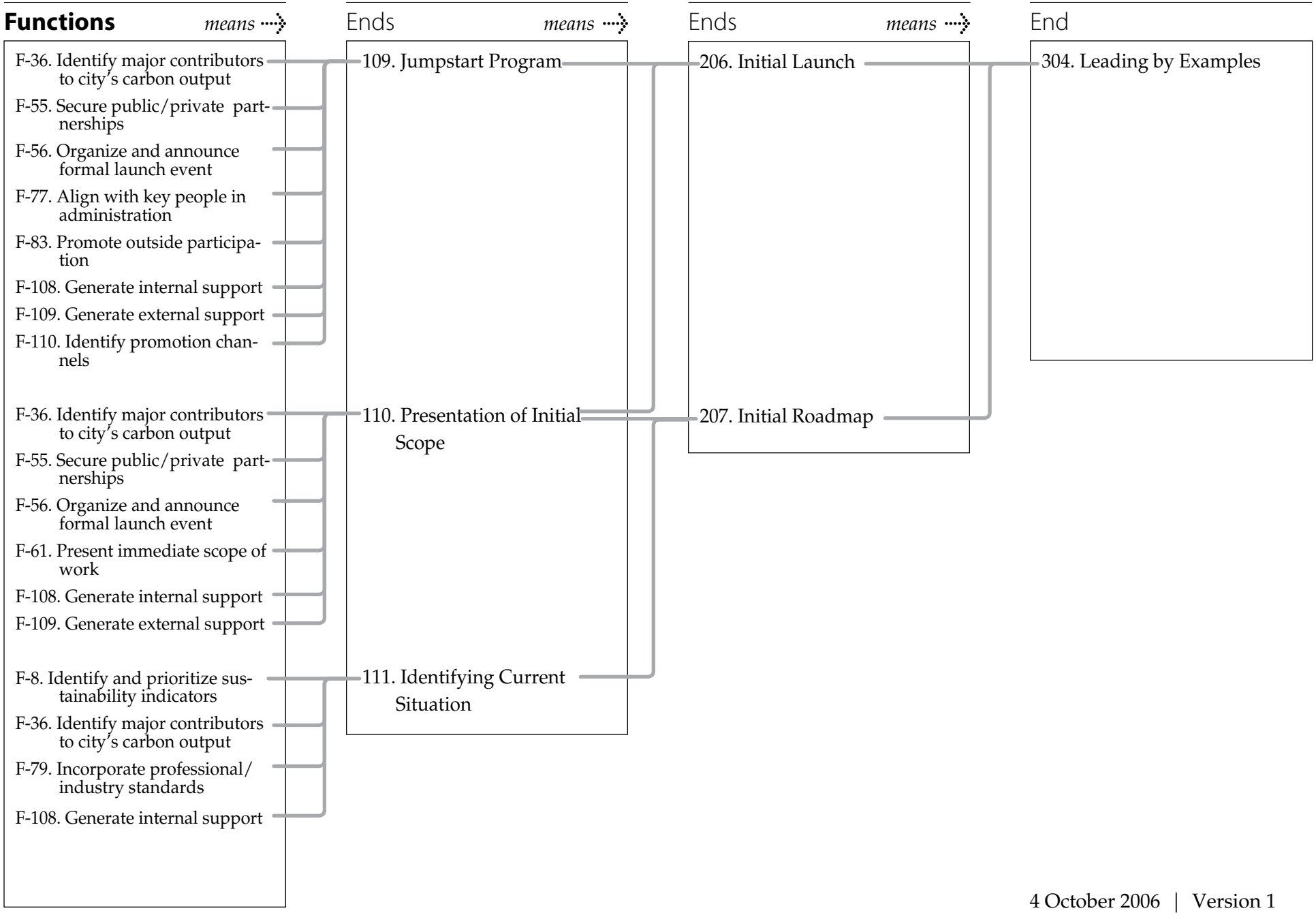
Cluster 314



4 October 2006 | Version 1

ProjectTitle Means/Ends Analysis

Cluster 304



4 October 2006 | Version 1

Adaptive Planning Ends/Means Synthesis

Cluster 152

End

152 Scheduling

means Ends

Set milestones

means Ends

Develop timeline

Review progress

means **System Elements**

Gantt Chart

Adaptive Urban Planning for Climate Change

Ends/Means Synthesis

Cluster 402

End

402

Secure Ideal Partnership

means Ends

Define ideal partner/partnership

Inventory prospects that fit criteria

Perform research on 'ideal partners'

Approach and secure potential partners

means Ends

Who do we know? Who do we know who knows someone we need to know? Who can we get to?

Where do we have leverage with prospects?

What are the ideal roles for partners? What do we want them to do?

Which corporations are already in play?

Get relevant contact information for potential partners.

Develop communication used to approach potential partners.

means **System Elements**

Sequencing of calls to partners (domino effect/leverage effect)

Communications/partnership/sponsorship package and letter

Partners committee / task force

Networking at national meetings/events

John Montgomery

11 November, 2006 Version 1

Adaptive Urban Planning for Climate Change

Ends/Means Synthesis

Cluster 402

System Elements	Features
Sequencing of calls to partners	Global warming council
Communications/partnership/sponsorship package and letter	Partnership pulse / Stakeholder position analysis
Partners committee / task force	Personal Values campaign
Networking at national meetings/events	Celebrity spokesperson
	Public Survey
	Meet the Mayor
	Active lobbying

John Montgomery

11 November, 2006 Version 1

Adaptive Urban Planning for Climate Change

Ends/Means Synthesis

Cluster 301

End

301

Identify Core Constituents

means Ends

Build case for importance of adaptation

Research and identify supporters and opponents

Build support base

Anticipate campaign to oppose adaptation plan (attacks) and prepare scenarios for counterattacks

means Ends

Define what acclimation will do and how will it make city better

How will this effect you?

Focus on understanding of existing attitudes and beliefs

Understand your enemy; know their weakness; what would it take to change their behavior.

Stand firm when confronted by naysayers

means **System Elements**

Baseline survey

Scenarios as examples (stories of what if) People can project themselves into a story.

Global Warming Mobil Unit - direct experience of what to expect

Climate change Simulation (virtual reality) Machine (motion simulation machine as model)

10 things you can do today to adapt - vote on your favorite

John Montgomery

11 November, 2006 Version 1

Adaptive Urban Planning for Climate Change

Ends/Means Synthesis

Cluster 301

System Elements

Baseline survey

Scenarios as examples (stories of what if) People can project themselves into a story.

Global Warming Mobil Unit - direct experience of what to expect

Climate change Simulation (virtual reality) Machine

(Motion simulation machine)

10 things you can do today - vote on your favorite

Features

Develop clothing, buttons, Lance Armstrong bracelets (Live Strong)

Global Chicago umbrella

Develop movie themes/partners (Day after tomorrow, Syriana)

Create ethos about issue based on target audience

Personal Values campaign

Sign a petition - sign pledge

Develop changed habits - develop methods to support individual change (AA Model)

Building captains/block captains headed by mayors

Fireside chats

Disaster simulator / Brave new world simulator

Indifference curve analysis

Connecting dots

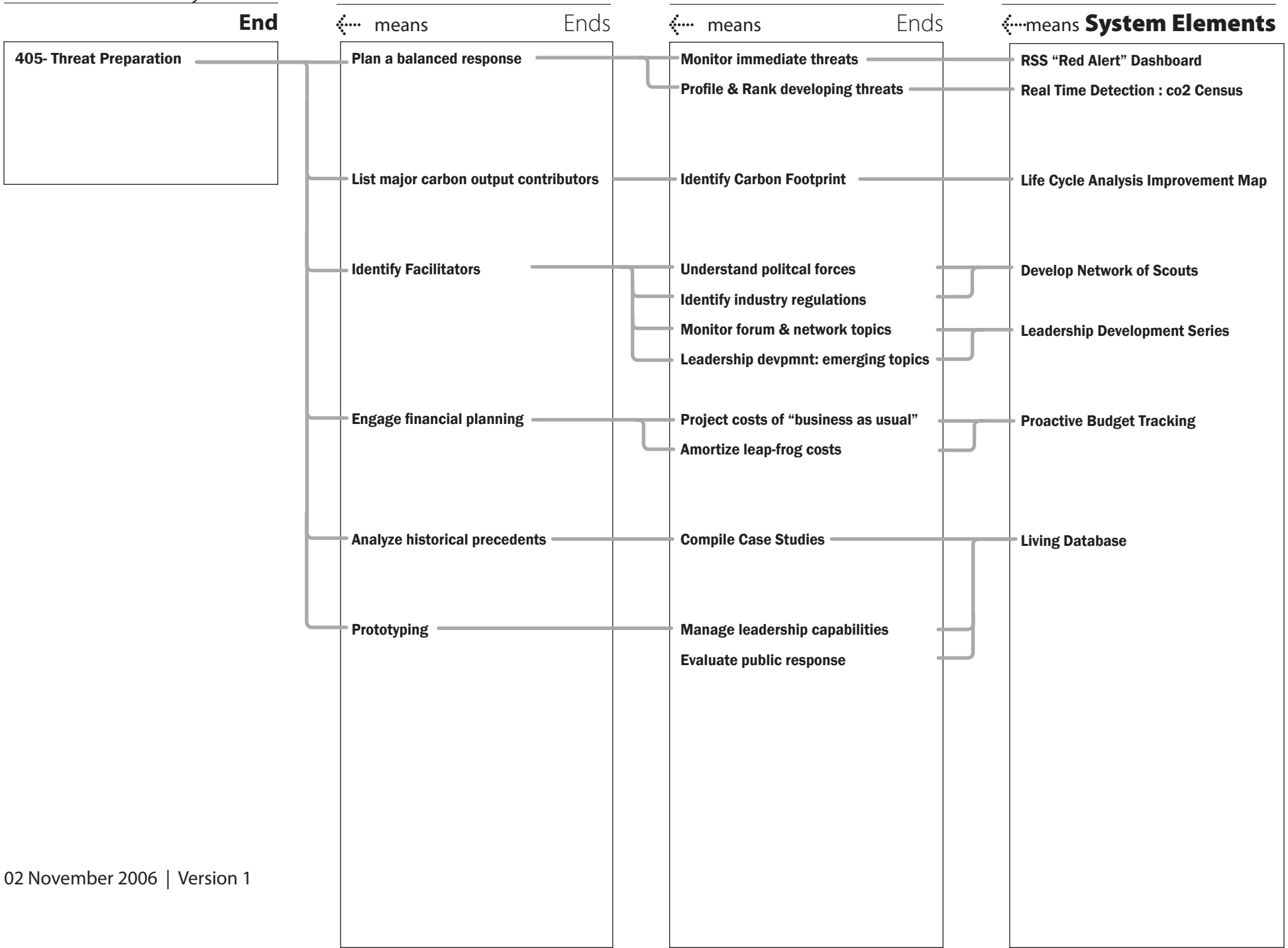
Life cycle analysis

Guerilla planning

Adaptive Urban Planning for Climate Change

Cluster 405

Ends/Means Synthesis



02 November 2006 | Version 1

Adaptive Urban Planning for Climate Change

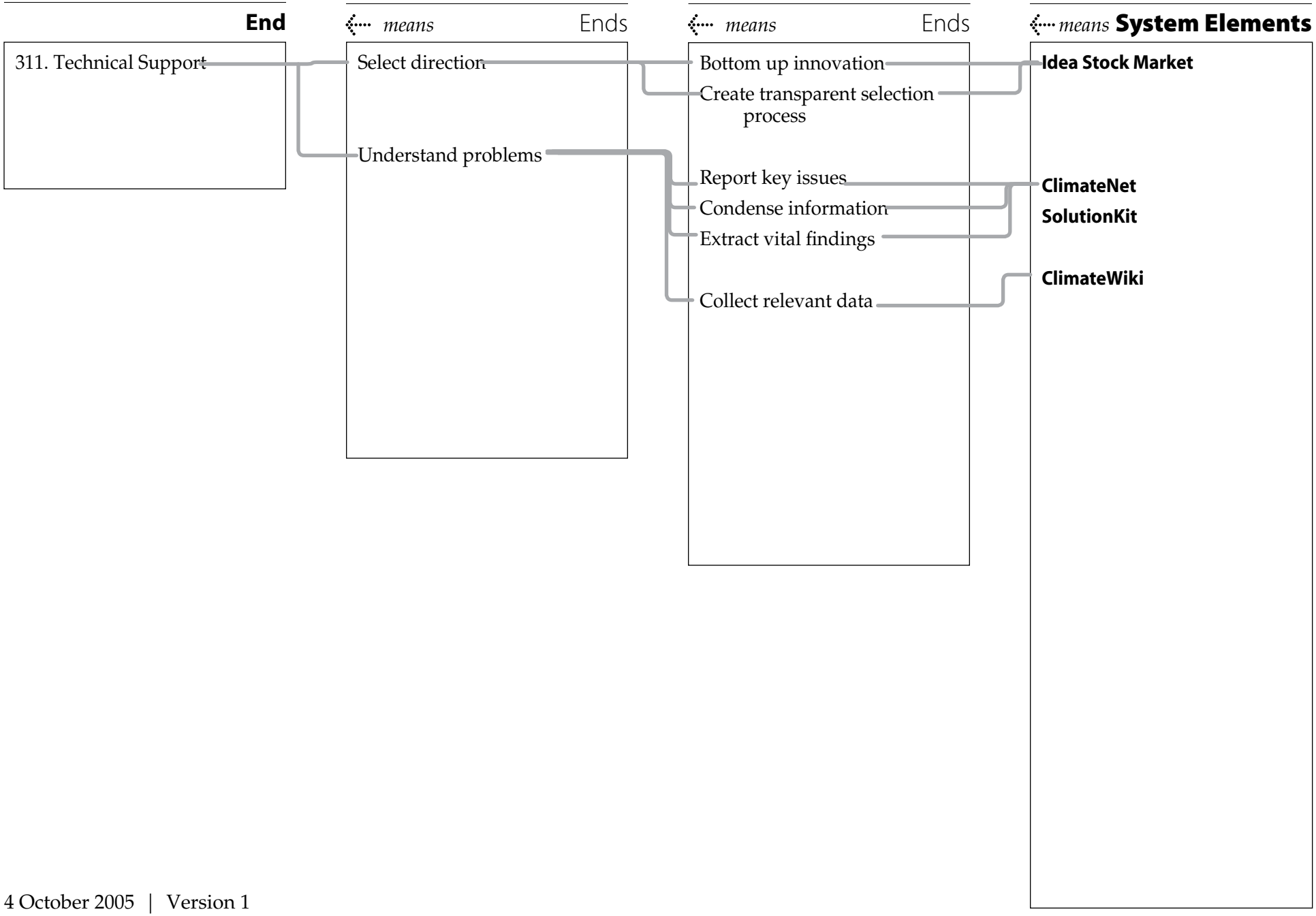
Cluster 406

Ends/Means Synthesis

End	means / Ends	means / Ends	means System Elements
406- Strategy	Leadership development	Monitor forums & emerging topics	3P's Training (People, Planet, Profit)
		Evaluate decision making abilities	
	Readiness Traning	Departmental preparedness review	Simulation Games
		Public sector acceptance	
		Set targets for development	
	Assessment & Planning	Track moving targets	Threats Prioritization Matrix
		Collect & compile research data	
		Set Timeline	
		Scalable solutions	
		Plan Alpha tests	
	Develop Roadmap for Implementation	Identify continuous imprvmt areas	Infrastructure assessment toolkit
		Identify radical improvement areas	
		Discover alternative use opportunities	
		Plan Beta tests	

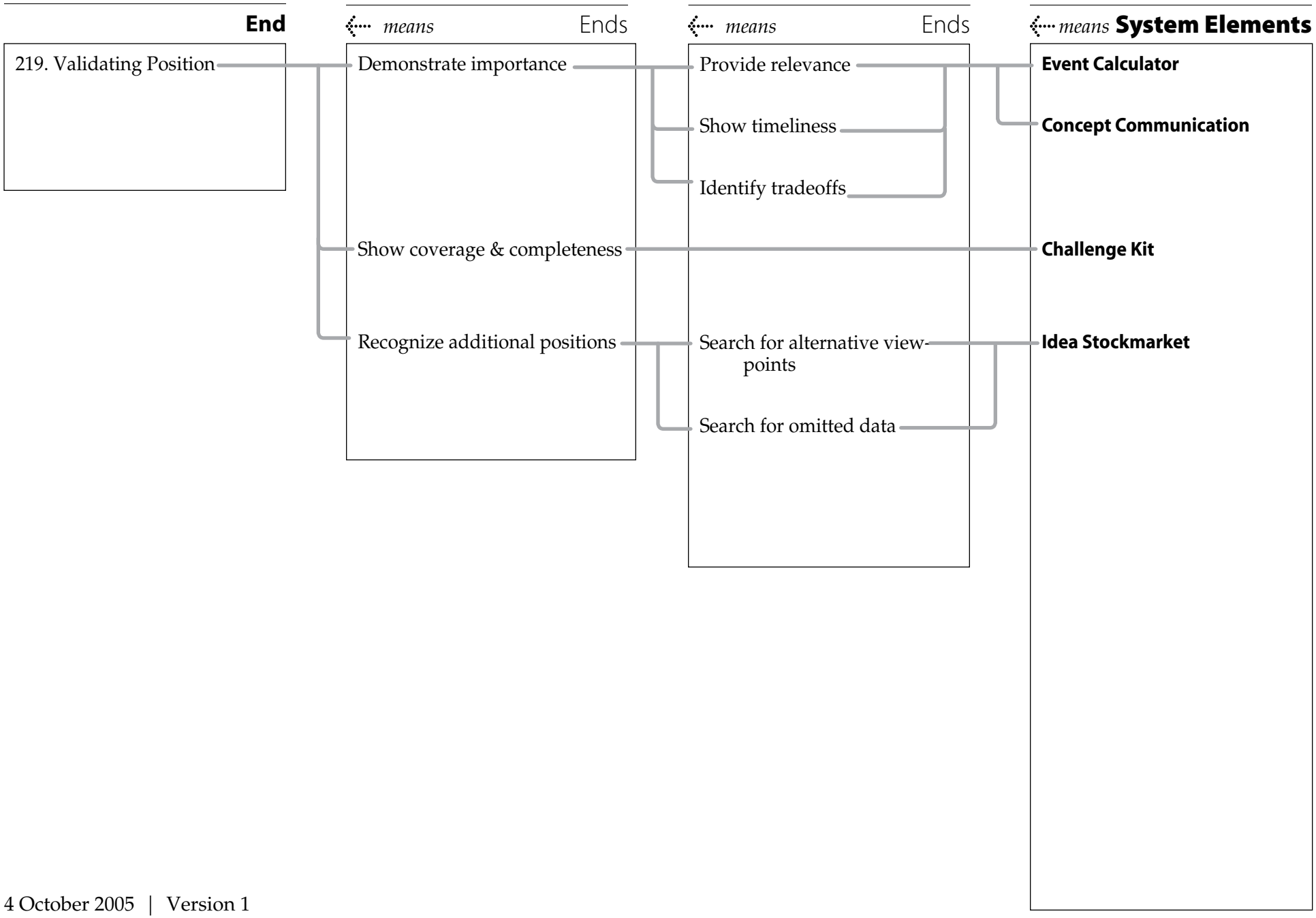
ProjectTitle Ends/Means Synthesis

Cluster 311



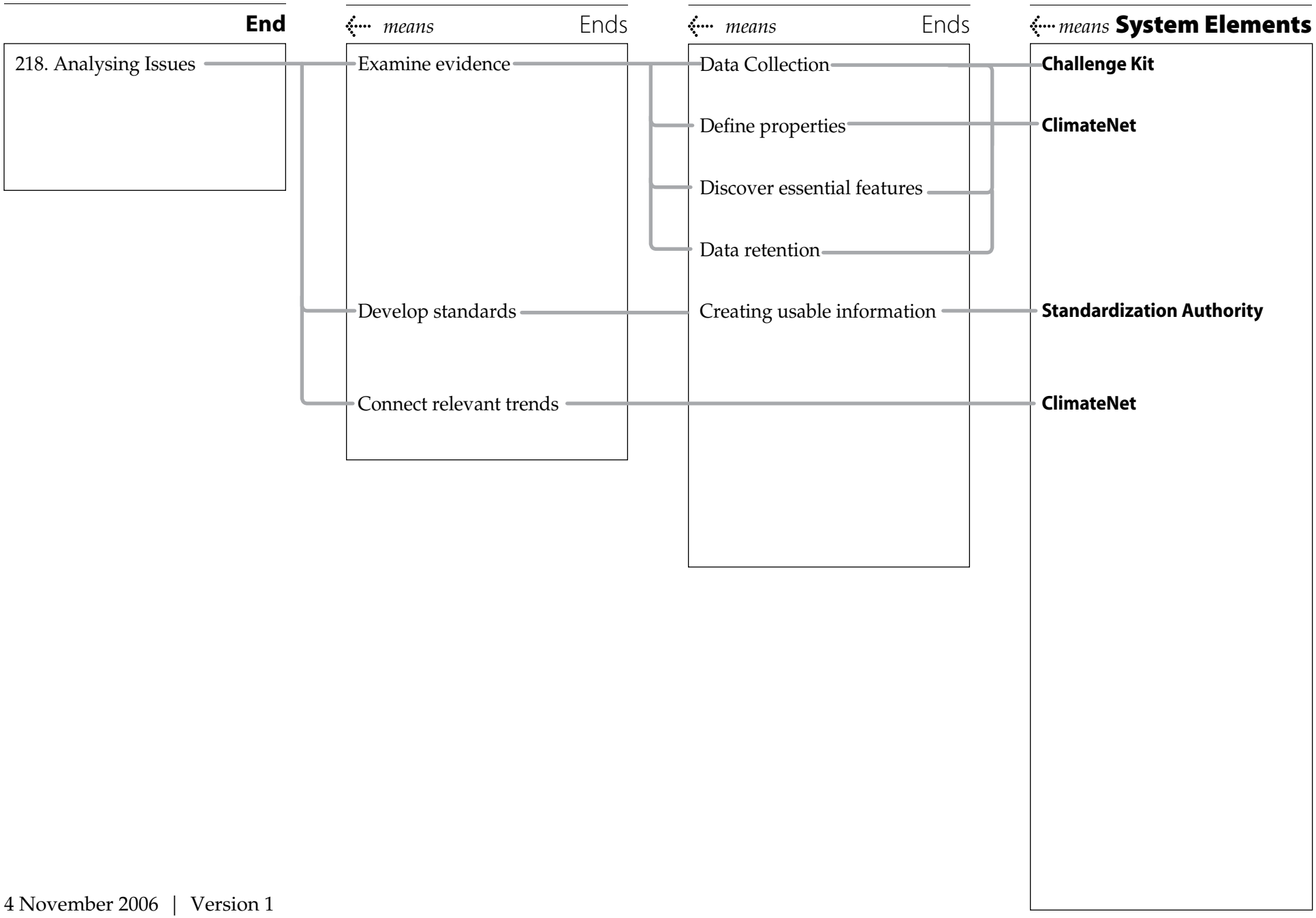
ProjectTitle Ends/Means Synthesis

Cluster 219



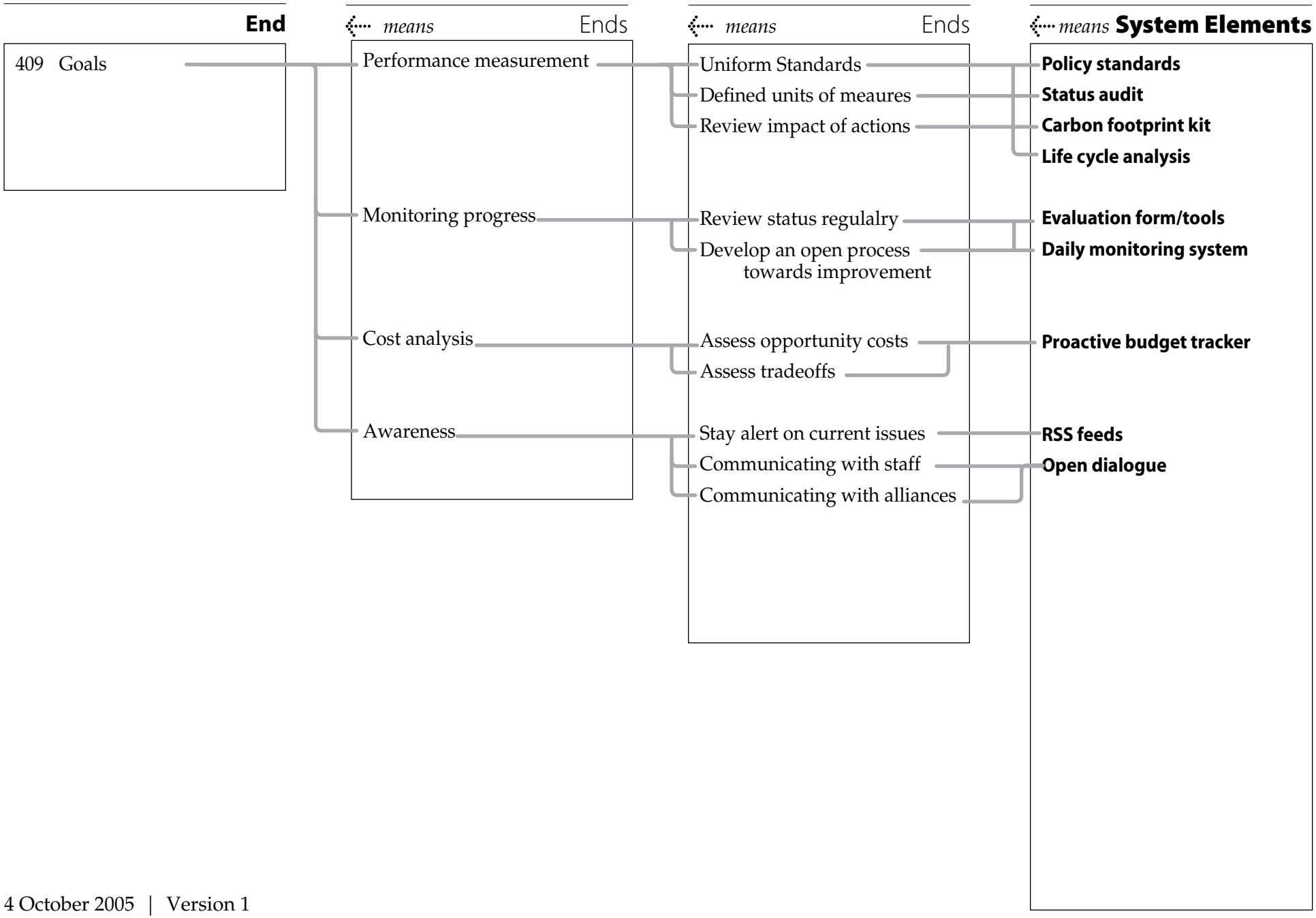
Urban Adaptivity to Climate Change Ends/Means Synthesis

Cluster 218



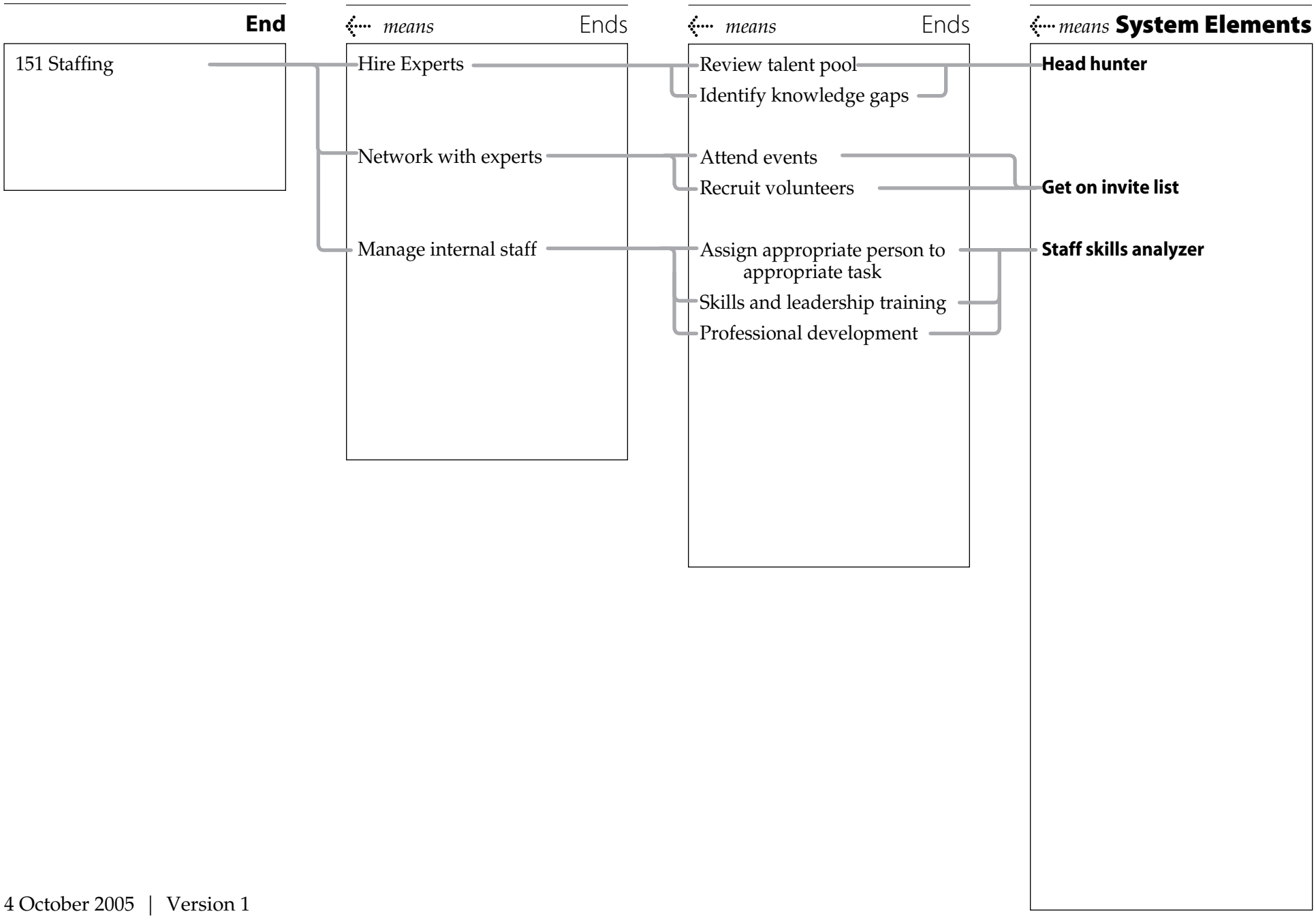
Adaptive Planning Ends/Means Synthesis

Cluster 409



Adaptive Planning Ends/Means Synthesis

Cluster 151



Adaptive Urban Planning for Climate Change

System Element Relationships

System Element Pairings: Rows **2–4** with Columns **5–7** Page **1**

		SCORE 0 1. **SystemElement1** does a good thing for **System Element Two.** 2. **SystemElement1** does a good thing for **System Element Two.**			
2	System Analyzer	SCORE 2 1. **System Analyzer** gathers data and analyzes current situation through **Public Opinion BLOG/Survey** 2. **Public Opinion BLOG/Survey** provides detailed sources for **System Analyzer**	SCORE 0		
3	Leadership Training	SCORE 1 1. **Public Opinion BLOG/ Survey** can be used as a reference for **Leadership Training** program	SCORE 3 1. **Leadership Training** provides crutial education for **Climate Change Group** 2. **Climate Change Group** utilizes **Leadership Training** for developing organizational competancies	SCORE 0	
4	3Cs Challenge	SCORE 1 1. **3Cs Challenge** uses **Public Opinion BLOG/Survey** for gathering other's ideas	SCORE 2 1. **Climate Change Group** needs **3Cs challenge** for generating ideas and making networks with other sectors	SCORE 2 1. **3Cs Challenge** needs **Advisory committee** to get external helps 2. **Advisory Committee** requires **3Cs challenge** to enhance capabilities	SCORE 0
		Public Opinion BLOG/Survey	Climate Change Group	Advisory Committee	
		System Elements 5	6	7	

System Elements

Score
3. Critical relationship
2. Strong relationship
1. Slight relationship
0. No relationship

Adaptive Planning

System Element Relationships

System Elements	Challenge Kit	Idea Stockmarket	ClimateNet	Climate Change Simulator
1 3C's Challenge	SCORE 0			
2 Leadership Training	SCORE 0	SCORE 0		
3 Climate Change Group	SCORE 2 1. Challenge Kit provides problems at an understandable level to those closest to the issues by giving them a platform to contribute. 2. CC Group issues utilize the Challenge Kit as platform for problem statements and solution generation	SCORE 1 1. Idea Stockmarket taps resources of those closest to the issues by giving them a platform to contribute. 2. CC Group agendas need to leverage Idea Stock Market as value proposition for problem solving	SCORE 2 1. ClimateNet provides specific forum and and ability to communicate specific problems to the city 2. CCGroup leverages ClimateNet as an arena to post challenges, and derive solutions from outside participants.	
4 Alliance Network	SCORE 0	SCORE 1	SCORE 2 1. ClimateNet provides specific forum and and ability to locate and communicate with partners for form alliances 2. Alliance Network utillzes ClimateNet as a meeting place to discuss, deliberate and problem solve.	SCORE 1
System Elements	5	6	7	8

Score
3. Critical relationship
2. Strong relationship
1. Slight relationship
0. No relationship

System Element

TITLE
Yellow Light

existing
modified
speculative **SE-10**

PROJECT **Urban Adaptivity**	SUPERSET ELEMENT/S	RELATED ELEMENTS
ORIGINATOR SANG-HO LEE	NONE	Disaster Communication Alliance Connector
CONTRIBUTORS		
SOURCE	SUBSET ELEMENTS	

DESCRIPTION

Yellow Light is educational TV programs for all the people, affected climate changes, to not only increase their awareness of regional climate changes, but acknowledge them how to cope with the changes. Yellow Light is impli mented in the programs, existing popular TV programs such as Sesame Street, Simpsons or CNN News. All the pro grams will be deliverd and organized by the tones, detemined in Concept Communication, and supported by alliance institutions, established by Alliance Connector. It is customized in terms of different geographical threats and age groups to increase their interests and comprehension. It will deliver the knowledge of climate changes, such as causes, changes, impacts, adaptive and mitigative soluitons, and etc. Moer importantly, it can deliver many different ranges of tones and subjects due to verious capabilities of programs.

PROPERTIES

- A communicational and educational channel
- A tool to increase public awareness

FEATURES

- Increase public awareness
- Acknowledge how to cope with climate changes
- Inform city's adaptive actions and achievements
- Select programs by different communication tones
- Costomize contents in terms of different geographical threats and age groups
- Interconnect with Alliance Connector

VERSION **1** DATE 12 September 05 DATE OF FIRST VERSION 12 September 05

FULFILLED FUNCTIONS

DESIGN FACTORS

DISCUSSION

Determining tones of communication is very important to achieve goals, and also determining communication channels is critical. There are many different communication channels. Each channels have strangths and weaknesses. A communicational and educational channel, Yellow Linght is one of communication channels. Yellow Light is implemented in the programs, existing popular TV programs such as Sesame Street, Simpsons or CNN News. It is very flexible to inform and educate verious ranges of tones and age groups because TV programs have different target groups ans tones. Following paragraphs are examples that how Yellow Light can be implemented in different kinds of programs with verious tones.

Next generation will be the victims of climate changes. We have a obligation to educate and train them to cope with acute situations. **Cartoon for Children** can do the role on TV. To increase young children's participation, programs directors and the managers of the Ministary of Education should discuss how to approach young children with the program and what messages the program delivers.

Yellow Light would provide various depth of messages by different programs to different age groups, even adults. In USA, King Of the Hill and The Simpsons have not only very high popularity ratings, but extensive audience groups. Even though the both cartoon movies deal with heavy topics, audiences don't feel a repugnance for the cartoons. Like other heavy topics, climate changes can be handled in a effective way by **Cartoon for Adult**.

Dacumentary should be delivered with a story. Knocking people's sensitivity is a highly recommendable approach to deliver knowledge and messages. **Dacumentary** could be watched various age groups. All the family members can watch it together and understand the threats of climate changes through the indirect experiences. For instance, **Dacumentary** tells a story of a penguin family, living south pole. Due to global warming, they are in danger of losing their roosts. Young penguins even die because of the difficulty of adaptation. Whole story could personify the penguin family.

Movies will deliver the messages of the urgency of climate changes. Most movies, handling acute global warming situations, are based on future events. Even though the stories are extrem and fiction, they are enough to warn audiences what might happen if we don't act now, or at least give people a chance to talk and think about whether the serious situations could happen.

News is to inform the laest events to audiences and to warn and commend what to do when the situation is urgent. It

DISCUSSION (CONTINUED)

also announces not only how city or government is doing to adapt and mitigate climate changes, but what government achieved.

SCENARIO [3 ENTRY SUBHEAD STYLE]

EXAMPLE

Program	Time	Audience	Approch	
Sesame Street	5:30 pm	4+ yrs	Fun	Being familiar with the topic
The Simpsons	6:10 pm	13+ yrs	Satire	Bring the topic to public
Documentary	7:00 pm	8+ yrs	Knocking Sensitivity	Develop emotional attachment
Game Show	8:00 pm	15+ yrs	Exciting	Educate knowledge of emergency, adaptation and mitigation
CNN News	9:30 pm	18+ yrs	Informing	Inform urgency of people's act and the newest events
The day after tomorrow	10:10 pm	18+ yrs	Fun & Exciting	Understand what would happen in the future

Jin is 10 years old elementary school student. One day, he comes back home from school with his friends, and they sit on the living room and turn on the TV to watch their favorite program, Sesame Street. They saw one character has a hard time using Green Bag, Separate Garbage Collection Campain. He and his friends laugh and giggle because they think they could do better. Few days later, Jin trys to help his mother seperate garbage. He learns how to seperate from the TV program.

Jimi is 20 years old college student and lives in Chicago. He goes to his friend's house to do geography homework together. Around 8 pm, they are tried, and turn on the TV to take a break. They watch Game Show, a quiz competition between three people. One competitor chooses a subject on the quiz category board. Subject is "Hurricane". All the questions are how to adapt climate changes. Jimi and his friend are also answering queations and competing each other. At the end of the show, they realize that they know very little about climate changs. And they decide to do research for Chicago's climate threats as a school assignment.

System Element

TITLE

Leadership Training

existing
modified
speculative

SE-01

PROJECT	Urban Adaptivity to Climate Change	SUPERSET ELEMENT/S	RELATED ELEMENTS
ORIGINATOR	Yoo-Jung Ahn	None	3Cs Callenge TeamBuilding 3P's training Leadership Development Series
CONTRIBUTORS			
SOURCE	LEAD(Inspiring leadership for a sustainable world)	SUBSET ELEMENTS Leadership Development Specialist training program Leaders among leaders Empathic training Group training sessions	

DESCRIPTION

A series of training program that provides consistent knowledge and useful information about environmental issues to project managers of each department. This program includes on-line and off-line education and also provides opportunities to attend special activities which build the qualities of good leaders for urban sustainability.

PROPERTIES

- A training program for management staff and project leaders
- On-line and off-line education relevant to leadership and sustainable development
- A course which builds up environmental specialists

FEATURES

- Conducts regular workshops and seminars
- Invites experts for special lectures
- Provides on-line education programs
- Sends managers on an environmental field trip (site visit)
- Role-playing game to understand others
- Provides mentoring program
- Provides cultural experience (place-based case study)
- Performs community service
- Strengthens cross-cultural communication skill
- Educates ethical dicision-making for sustainable development
- Offers credits and certificates if managers complete the program

VERSION **2** DATE 15 November 06 DATE OF FIRST VERSION 11 November 06

FULFILLED FUNCTIONS

58. Present deliverables within each department
59. Present management hierarchy
62. Delegate responsibility for task
63. Transfer knowledge from experts to program managers
64. Train internal managers

DESIGN FACTORS

51. Individual responsibilities unclear
52. Responsibility may overlap multiple positions
53. Training may require custom applications
54. Requires knowledge of other department systems
79. Manager's lack of knowledge in the actual works

DISCUSSION

The leadership role is very important in every project and every department of each organization. Leaders must manage entire projects including people, resources, communication, and schedules. Therefore managers need good leadership qualities along with a broad range of knowledge about their work.

Leadership Training is one of the necessary programs which develop the competencies of organization for urban planning under climate change. It is through **Leadership Training** that management will gain the abilities and knowledge that will carry them to success. Building leaders is a key, as they will be the driving force in creating an effective plan.

Leadership Training consists of several programs which collaborate to create a well-rounded and effective leader for city projects. Programs will consist of both online and offline courses, which will enable users to work both on company time, and away from the office. Online education will provide managers with a great amount of knowledge from various courses. All managers should complete credit hours every month and the result will be reported to chief managers. These programs are not only for improving managers' working efficiency, but may also be a type of evaluation methods.

Team leaders will be able to learn on their own schedule using the online courses, but will also learn in person from expert sources through special lectures. These offline courses will allow leaders to learn directly from experts in various fields, giving those proficient in the planning process the necessary background to accomplish their tasks. Managers can also discuss key issues and problems regarding their projects through workshops and seminars regularly. It will broaden their understanding about work that other managers are doing, as well create a strong network among different departments. If needed, managers will visit certain places to gain knowledge in the field and gain first hand experience. Through other programs such as mentoring programs, ethical decision-making sessions, and community service, managers will qualify themselves as good leaders. These courses will create environmental specialists of the team leaders, and allow them to teach their subordinates. When these programs are used as a system, the team leaders will be able to transfer knowledge to team members, delegate and evaluate them, therefore making a more effective team.

In the end, **Leadership Training** helps managers are able to fully understand their roles, and can execute an effective plan for the city's programs.

DISCUSSION (CONTINUED)

Structure of Leadership Training

SCENARIO [3 ENTRY SUBHEAD STYLE]

Jim Smith has been appointed as the chief manager of the Chicago Department of Environment, and has been given a new initiative to reduce CO_2 emissions from the city of Chicago. He has been given complete control over the cities public works and utilities as resources to complete his task. To complete this momentous task, Jim needs the help of many well trained individuals on his team. Jim will follow the principles used in **Leadership Training** to create a task force well trained enough to make an impact citywide.

The first action that Jim takes is to locate experts in the field of carbon dioxide emissions. Upon gaining their assistance, Jim sets up mandatory training sessions for the leaders of his task force. The task force will include managers of many different public departments including: Energy Management and Air Quality, Permitting and Enforcement, Natural Resources and Water Quality, Urban Management and Brownfields Redevelopment, Government Relations and Policy, Administrative, Fiscal and Communications, and Community Programming and Education Outreach. These managers will be taking a wide range of training courses on the removal of CO_2 emission sources. Jim decides that an effective way to teach his managers is to take them on a trip to Copenhagen, a city currently at the forefront of CO_2 emission reduction. Copenhagen has reduced CO_2 emission by 23% from 1990 to 2000 and still trying to reduce CO_2 emissions by 30% compared with 1990 levels. By viewing the successful example, leaders can see first hand what they hope to accomplish, and they will be able to meet those to have accomplished the task in the clean environment.

Jim also uses online software to create online courses to train team leaders during off time. This allows team members to learn necessary information at there own schedule, while Jim is able to dictate what is accomplished during work hours. Jim's training program is so strong that he creates his own set of requirements that must be accomplished so leaders may achieve accreditations. The certificates awarded will allow leaders to participate in future city programs, and at higher levels of management.

The **Leadership Training** that Jim provides creates a sense of team unity and common knowledge that the team will draw upon when forced to spend long hours working apart towards a common goal. Once Jim's team is properly trained to his specifications, he will be able to execute a much more efficient plan that can be properly delegated. The communication between departments should be stronger because of the common knowledge that the team shares, as well as the relationship that the leaders have developed. Jim will be lauded for his performance, as having strong leaders will insure the success of his carbon dioxide emission reduction plan.

System Element

TITLE

Advisory Committee

existing
modified
speculative **SE-02**

PROJECT	Urban Adaptivity to Climate Change	SUPERSET ELEMENT/S	RELATED ELEMENTS
ORIGINATOR	Yoo-Jung Ahn	None	Conference Networking Partner Task Force
CONTRIBUTORS			
SOURCE	N.A. (speculative)	SUBSET ELEMENTS Discussion group Expert conference	

DESCRIPTION

An association which consists of various experts, concerned with decision-making of city's environmental policy and gives professional advice with expert knowledge to the city's commissioners. They are not public officers but exercise an essential influence on the city's important policy decision regarding environmental problems.

PROPERTIES

- An advisory association which affects city's environmental programs and policy decisions
- A group of people who have professional knowledge regarding environment problems
- They are consist of ecologists, scientists, professors, CEOs, and environmental consultants

FEATURES

- Concerned with city's environmental policy decision
- Provides expert knowledge/advice to commissioners of the city
- Holds regular conference with various experts and city officers
- Studies and researches about environmental issues
- Communicates with other experts out of the city or country
- Promotes awareness of the dangers caused from environmental disruption

FULFILLED FUNCTIONS

55. Secure public private relationships
61. Present immediate scope of work
77. Align with key people in administration
83. Promote outside participation

DESIGN FACTORS

50. Work and educational load diminsish participation
70. Insufficient resources
73. Method for promotion are not determined

DISCUSSION

Although the city of Chicago has a Department of Environment, it is impossible for that department to predict and prepare for every upcoming problem related to environmental issues. Many problems require high-level expert knowledge and in-depth analysis. To solve these problems, the city organization must utilize people who deal with advanced research and study about the issues, provide expert knowledge, and help to decide policies or standards regarding the environmental issues.

The **Advisory Committee** is an association composed of prominent experts who have specialized knowledge about energy use, pollution, recycling, green city planning, etc. Also CEOs of large companies and citizen representatives are included.

The **Advisory Committee** will take on a wide variety of tasks all varying in depth. The main duty is to focus on upcoming city environmental policy. All decisions will be deliberated and can be appropriately decided by those with the knowledge to correctly decide a course of action. The **Advisory Committee** can also be used as a resource that can be called upon regarding environmental issues. Having a group of experts in the environmental field can be utilized in by many different offices, including the Mayors office, building commissions, Police and Fire Departments, as well as zoning commissions. The **Advisory Committee** will be a permanent entity that may will conduct research on their home city, and be able to compile data for comparison nationally and throughout time.

Members of Advisory Committee

DISCUSSION (CONTINUED)

The **Advisory Committee** will also be a national mouthpiece for the cities environmental concerns, and will be the group in charge of communicating with the media, as well as other experts throughout the world. Another major responsibility of the committee is to promote and raise awareness of environmental concerns. By having a united group of experts, the city will earn respect from the public as well as other cities and nations. This will show that the city has the environment as a priority and citizens should follow in order.

SCENARIO [3 ENTRY SUBHEAD STYLE]

The city of Chicago has decided to create an **Advisory Committee** to aid city policy when environmental issues are concerned. The group will be headed by the new chairman of the committee, John Lee. John Lee has assembled a team of experts from a number of disciplines, including chemical engineering, ecology, green architecture, etc. He has also assembled a "green team" with natural and renewable resource experts and recycling experts.

The team's first task is to adopt a new sustainable energy source which is not exclusively based on a fossil based fuel. Mr. Lee chooses to research many different possible energy sources. Through communication with other large cities worldwide, he is able to use a great deal of data on all available energy sources. Through cross analysis, Mr. Lee is able to focus his choices to several viable sources, including Bio-fuel, Solar Heat, Wind Power and Nuclear Fusion. The committee has been comprised of not only experts, but also business executives, representatives of NGOs, and citizens. A well rounded discussion ensues concerning the decision making, in attempting to select the appropriate fuel.

The experts involved in the creation of this initiative of sustainable energy sources are integral in briefing, not only the Mayor's office and city officials, but also the media and by extension, the public. Because of the group that John Lee has assembled, the final decision that was reached is under less scrutiny.

The **advisory committee** also must secure appropriate funding from the city and state governments. Mr. Lee must go before the city board to state his case for funding, and is able to gain sufficient funding for his project.

Once the final decision is made, the **advisory committee** is responsible for investigating the group and manufacturers creating the energy infrastructure in Chicago. Under the watchful eye of Mr. Lee, the committee has decided to lessen the dependency on fossil fuels while utilizing wind power. There is research that must be done on wind power suppliers, windmill builders and operators. Not only will experts in this type of fuel be useful, but the business executives have extensive experience in this selection and negotiation. Through discussion with other windmill friendly cities, such as Palm Springs California, a quality builder is located. Once building has begun, the **advisory committee** shifts its focus from decision making to one of its other main duties. That is the duty of promotion and increase of awareness of environmental concerns and disruptions. By making the public and other governmental departments aware of environmental concerns, the process of gaining funding and public approval in the future will be easier. Mr. Lee also makes it a priority for his team to interact with the public to educate the youth on the benefits of renewable resources and environmental issues.

By creating a system of wind power, Mr. Lee and the **advisory committee** are able to lay the groundwork for a fully sustainable energy system for Chicago. Through the decrease in fossil fuel dependence, and the development of sources including fusion and natural power, the **advisory committee** is working towards a cleaner and more responsible city for future generations.

System Element

TITLE

Real Time Detection: co2 Census

existing
modified
speculative

SE-9

PROJECT	Adaptive Urban Planning for Cimate Change
ORIGINATOR	Eric Wilmot
CONTRIBUTORS	
SOURCE	

SUPERSET ELEMENT/S

RSS Red Alert Dashboard
Threats Prioritization Matrix

SUBSET ELEMENTS

RELATED ELEMENTS

Real Time Detection: co2 Census

DESCRIPTION

A dynamic graphic display tool that sorts and displays carbon contributions from macro (Country, State, Region) to mico (city, industry, process) level.

PROPERTIES

- **A tool for monitoring past and present rates of co2 production with the goal of continuing reductions for long term economic, environmental, and social well being.**

FEATURES

- **Main screen feed for overall co2 output monitoring**
- **Sub panels for detailed information regarding specific activities.**
- **Historical monitoring capabilities for progress evaluation**
- **Provides reports per department for their activites and areas for improvement**
- **Provides track record of cause & effect relationshhip between improvement tactics and realized return on investment**
- **Allows different levels of access for different departments requiring information**

VERSION **1** DATE 12 November 06 DATE OF FIRST VERSION 12 November 06

FULFILLED FUNCTIONS

15. Determine city's carbon footprint
24. Develop scope
36. Identify major contributors to city's carbon output
44. Condense information
45. Associate issues
48. Develop report heirarchy
49. Summarize findings
50. Extract key findings
95. Assess project sucess

DESIGN FACTORS

DISCUSSION

Adaptive urban planning for Climate Change is a process focued on the mitigation and adaptation means necessary for urban centers to plan for the likely effects of climate change.

Given current scientific majority opinion and trends of climate change factors, enterprise is fast realizing the need to consider these factors in their planning strategies. City planners are especially interested in these trends given the scale and potential large scale effect climate change can have on a dense urban population.

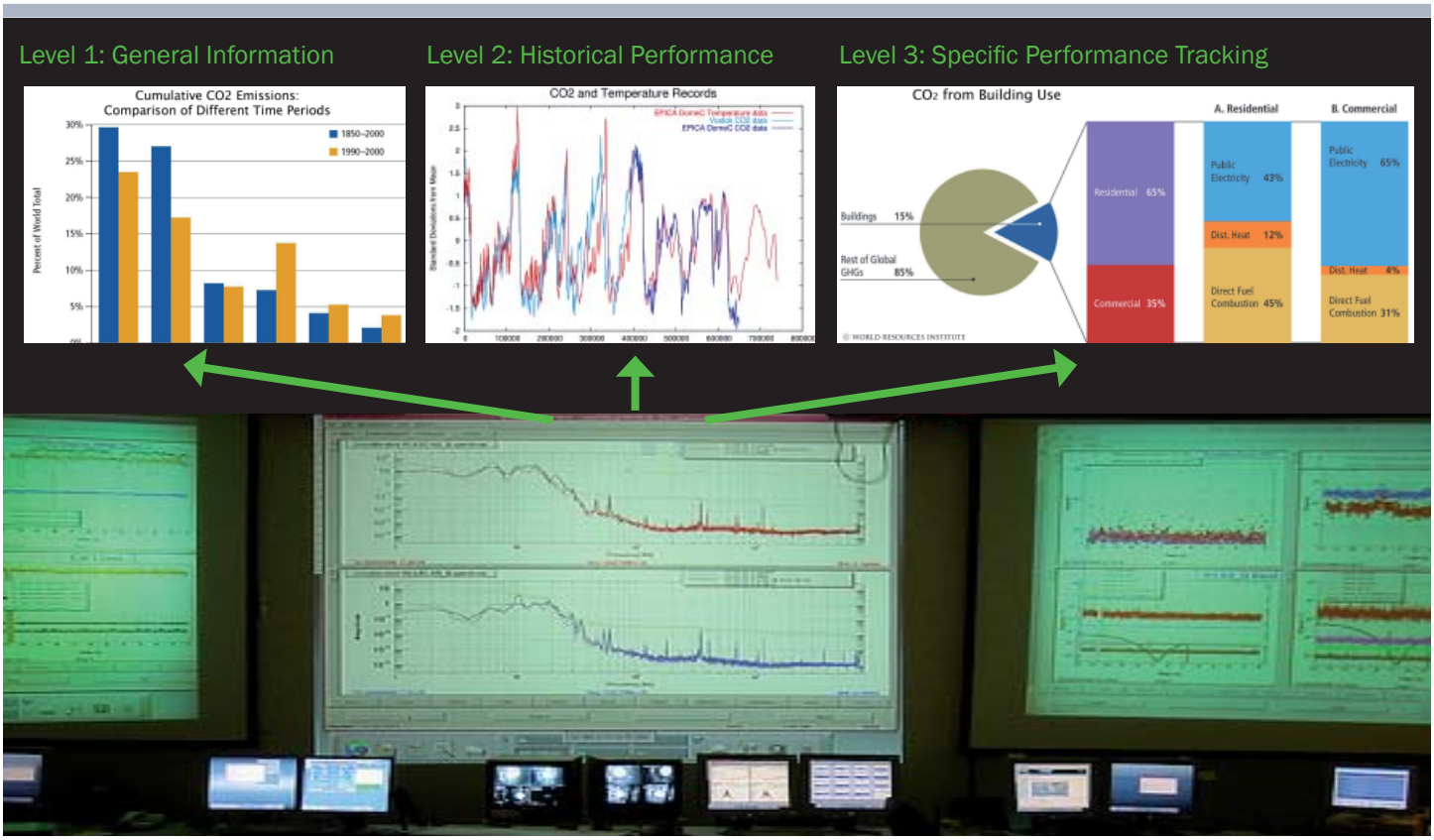
In the adaptive planning process, the need to convey the state of the art precedes any action. This proposed solution allows for a **co2 Census** in real time that allows a visual comparison of real data for the continuous reduction of co2 emissions as a contributor to climate change.

This tool is best used as a supporting agent with all future planning agendas. In the example shown, data is revealed from macro to micro level instruction. Having compiled a range of carbon contributions using inputs from the **Carbon Footprint Kit**, this database allows a visual comparison of violators against future reduction targets.

Although this could be utilized and referenced by any computer in a network, the full effect of this tool would be best displayed in a **Control Room** setting. The purpose of this tool is to provide a easy to understand, easy to monitor interface that conveys complex information in a simple manner.

Using carbon output data as initial inputs, visual identification of worst violators and fluctuating contributors can easily be identified and traced. Should the user need to identify more specific information regarding a sector, the **co2 Census** tool can organize by filters to provide in depth, specific information on an as needed basis.

Parallel with supporting proactive agendas, the detection tool can also support **RSS Red Alert** tool by sending high alerts when any performance metric exceeds an acceptable threshhold when compared with performance level benchmarks. Likewise, the **co2 Census** tool would dynamically update information on the **Threat Prioritization Matrix** which analyzes a wider range of threats facing a city structure. In this case short, midterm, and longer range outlooks would serve to inform policy and directives given a city center's ability to act, or need to temporarily offset carbon emissions with the purchase of Carbon Credits or similar trading schemes.



Scenario: Tracking co2 in the Real Estate Sector

From the control room: The above example highlights the capaicty of this detection and development program to access realtime information in order to provide accurate monitoring of co2 emissions.

Data contributions range from national historical averages to specific industry sectors for more holistic solutions development. In this hypothetical example, the detection tool is accessed in order to provide in depth information regarding the real estate sectors contribution to co2 output for an urban area. By accessing information on an increasing level of detail, the accuracy of action agendas can be validated by addressing poor performance areas.

System Element

TITLE

Green Text

existing
modified
speculative

PROJECT	**Foreign Direct Investment**	SUPERSET ELEMENT/S	RELATED ELEMENTS
ORIGINATOR	**Sang-Ho Lee**	ClimateNet	
CONTRIBUTORS			
SOURCE		SUBSET ELEMENTS **Register** **LevelSet** **Feeder** **Navigator** **Focus Discussion**	

DESCRIPTION

Green Text is a content distribution system. In general, searching or sending data is a very painful task due to no means to inform the latest update data or availability. Green Text provides members of ClimateNet a capability to avoid search ing the same topics or projects to check the latest news or achievements. It not only informs members the most relevant and latest information by simple registerations and distributions, but provides Navigator, a personal data storage, to check registered issues immediatly. In addition, Green Text provides Focus Dicussion, linked with Navigator, to discuss about the issues with others including publishers.

PROPERTIES

- A web based system
- Personal data storage
- A tool to distribute data
- A place to discuss about issues

FEATURES

- Get registrations from members
- Categorize updated data
- Prioritize updated data in terms relevancy
- Inform updated data information to registered members through emails with green text.
- Provide a personal data storage place to organize registered issues
- Provide group discussion places in ClimateNet

VERSION **1** DATE 01 Nobemver 06 DATE OF FIRST VERSION 01 Nobemver 06

System Element

TITLE

Green Text

FULFILLED FUNCTIONS

DESIGN FACTORS

DISCUSSION

DISCUSSION (CONTINUED)

Green Text is a data distribution system to help members of ClimateNet get specific information efficiently. Register receives registrations from individual members. Whenever network members are interested in specific topics or projects, they go to Register to be informed the latest information in the future. The process of registeration is consisted of two sections, listed as the catagory of issue and the level of relevancy; Members choose category by clicking boxes from broad to detail. Determining the level of relevancy is critical not to miss very important information by receive too many emails that not useful or irrelevant.

LevelSet is a tool to determine the relevant level of newly updated information. Setting levels of information importance or relevancy is very critical specially nowadays due to an information-oriented society; people spend too much time to search highly relevant data.

Feeder informs data updating news to registered members. Members are informed the updating news through emails. The subjects of updating news on the email are green text that members won't miss to check them or confused with other spam emails. Data updating news contains short descriptions of projects, updating dates, publishers and link to ClimateNet.

Navigator is a personal data storage place to organize registered issues. After informed updated projects, members go to Navigator to check the information. Simplely clicking the linked titles of projects, members can get the information.

Focus Discussion is an web place to share opinions with others, including original project publishers. Members have questions or objections after reading projects, but it is hard to meet others due to geographical distance. They can ask questions each other to understand the processes and ideas better.

SCENARIO [3 ENTRY SUBHEAD STYLE]

Minho is a member of ClimateNet. He started to work for Korean Adaptive Environmental Change three weeks ago. Recently, his team has been working on a project to find a better way to provide food to Seoul, capital city of Korea. During the research on the ClimateNet, he found that City of Chicago has been working on "Urban Green Roof Project" to increase food supply capability and reduce CO2 level.

Minho visited ClimateNet more than 5 times a day to check whether Urban Green Roof Project is updated or other similar projects are comming. Few days later, he felt checking and searching many times a day is very inefficient. And one of his team members told him about Greet Text. His team member said that Green Text is a content distribution system. It provides members of ClimateNet a capability to avoid searching the same topics or projects. It informs members the most relevant and latest information by simple registerations and distributions, provides Navigator to check registered issues immediatly, and provides Focus Dicussion, linked with Navigator, to discuss about the issues with others including publishers.

After the conversation, Minho simplely registered urban agriculture capability as a category, and set level two as a level of relevancy; one is the most relevant data and five is the least relevant data. One hour later, he got an e-mail with green text. There are lists of projects with short discriptions, update dates and publishers. He clicked one of them, linked to ClimateNet. He loged in ClimateNet as usual and visited to his personal place, Nevigator. There are all the issues and projects that he registered. He clicked Urban Green Roof Project. As reading, he found that there is a Focus Discussion button, linked to group discuss pages. He clicked the button and discuss the project with others, working on similar projects for other cities.

Without Green Text

You have to search for information

With Green Text

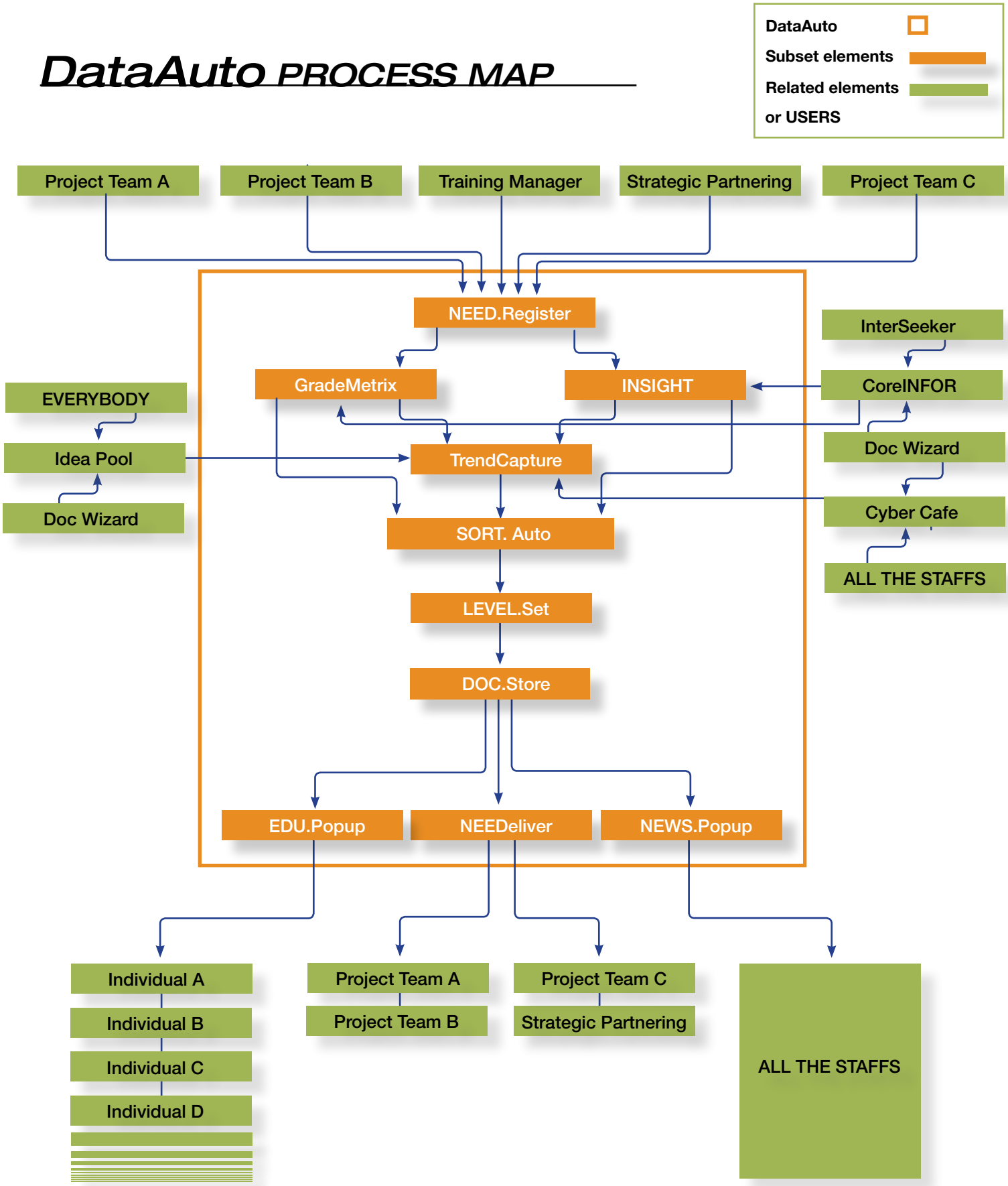
Information comes to you

System Element

TITLE

DataAuto

DataAuto PROCESS MAP



SCENARIO [3 ENTRY SUBHEAD STYLE]

Chanjae Park is newcomer, joined INVEST KOREA 3 weeks ago. He is belong to The department of FDI Incentives. He is doing a project with five other teammates to determine competitive incentives that attract foreign companies or countries to invest into biotechnology in South Korea. Due to studying English literature in his graduate school, he doesn't really know FDI incentives or biotechnology; INVEST KOREA requires applicants a general economic and linguistic test because civil service examinations in South Korea should not consider applicants' major or other background information. He had know idea where to start. Fortunately, he met one of his college seniors in INVEST KOREA, and he had a chance to ask him what to do. The senior said that INVEST KOREA has a education program, called **Training Manager**. It will set up his investment incentives and biotechnology education program based on the pre-test result. Chanjae logged in **Training Manager** website and described what, when and how he wants the 20 minutes program. two hours later he got a acceptance email from **Traning Manager**. Right after the lunch time, he turned on his computer and one pup-up window opened automatically with a short description; "It is your first day of program. Here is the reading materials that we need to know. Read them and if you have questions, please email **NEED.Register**. **EDU.pupup** provides your education materials."

Chanjae went to the project team meeting. As finishing team meeting, the team manager gave each individual tasks for the next step. Chanjae's tasks were to gather all the competitors' biotechnology incentive programs and potential investors' incentive preferences, and determine current incentive offering's weaknesses and strengths. After other members went back to their desks, the team manager taught Chanjae how to use **DataAuto**. Right after the meeting with his team manager, he went to DataAuto website to request what he needs. On the **NEED.Register** web-page, he describes his project shortly in terms of the period and goal, and provides the lists of information that he needs, listed as 1) the lists of competitors, categorized in terms of their economy and geographical location. 2) competitor prioritization based on their capabilities and strategies. 3) full description of competitors' incentive programs. 4) the lists of past 3 years biotechnology investors with the incentive agreements. 5) the lists of potential investors. Due to the urgency of time, he clicked a "within three days" button. 30 minutes later, he got an acceptance email with data opening password and a short description; "you will get all the request information within two days." **DataAuto** run **GradeMatrix** and **INSIGHT** to provide the requested information, transferred to **SORT.Auto** and **Level.Set**, and stored in **DOC.Store**. Two day later, a data received notice pop-up window, sent by **NEEDeliver** showed up on his computer screen. He put his data password on the log-in box. He read all the data he received and determine current incentive programs' weaknesses and strengths by analyzing the received data.

In the team meeting, he presented his opinion with supporting evidence. After all the individual presentation and discussion, the team manager also asked all the team members to do further research. Chanjae's tasks were to identify current biotechnology incentive trends, evaluate what Korean incentive program can not meet investors' demands, and determine what and explore options of how to change current biotechnology incentive programs. As he did before, he went to **DataAuto** and requested his project shortly in terms of the period and goal, and provides the lists of information that he needs, listed as 1) last 5 years biotechnology trends' changes with timeframes. 2) the reasons of missing FDI opportunities and at the time, the competitors incentive proposal, accepted by the investors. He also clicked a "within three days" button after typing the lists on the **NEED.Register**. 35 minutes later, he got an acceptance email, and two days later, he received the requested data which were produced by running **TrendCapture** and transferred to **SORT.Auto** and **Level.Set**, and sent by **NEEDeliver**. He examined the received data thoroughly, and did deeper analysis to identify what to do to meet the current biotechnology investors' incentive preference.

After all the analysis and determinations of incentive options, he reported it to his team manager. The manager liked Chanjae's idea. His logic is that tax incentives have been offered to foreign-invested companies and foreign investors to attract FDI in Korea. However, unlike those to domestic investment, tax incentives to foreign investment often fail to generate high rate of return to foreign investors because of taxation in their residence states.

SCENARIO [3 ENTRY SUBHEAD STYLE]

Based on the data from **TrendCapture, INSIGHT, Cyber cafe** and his further analysis, he suggested three things INVEST KOREA should do to attract foreign investors, listed as 1) the method of double taxation elimination adopted by the residence states of foreign investors is the principal factor. 2) tax incentives to income derived by foreign-invested companies in Korea are effective in attracting FDI except when the companies are invested in by foreign investors whose residence states use indirect tax credit method. 3) tax incentives to dividend income derived by foreign investors are not effective in attracting FDI except when they are granted to foreign investors whose residence states allow tax-sparing credit or use exemption method.

Increasing the level of protection of Intellectual Property Rights (IPR) is also critical factor to attract foreign direct investment that will create new jobs and opportunities for all their citizens. Specially, inventing and testing medicine takes very high financial budget and more than 10 years of time. Therefore, it is important to make stronger rules to protect foreign direct investors' IP.

System Element

TITLE

CityLink Solution

existing
modified
speculative SE-10

PROJECT **Urban Adaptivity**

ORIGINATOR SANG-HO LEE

CONTRIBUTORS

SOURCE

SUPERSET ELEMENT/S

ClimateNet

SUBSET ELEMENTS

Treat Mapping
CityInfor
Threat vs. Solution

RELATED ELEMENTS

DESCRIPTION

CityLink Solution is a tool to search possible solutions from other cities which have similar threats. If one city suffers by hotter and drier, there must some cities have same problems, but it is not easy to share knowledge or solu tions due to no place to consolidate all the information. CityLink Solution provides not only a simple mapping tool to search the city groups that have similar threats, but well organized information such as detailed city information, and solution description. In addition, CityLink Solution provides a function to compare one city to others in terms of general city information, threats and solutions.

PROPERTIES

- Web-based searching tool
- A tool to provide information
- A tool to categorize city groups

FEATURES

- Identify city groups, have same climate change threats
- Provide simple and efficient searching system
- Provide general information of cities
- Provide threat description to cities
- Provide solutions to cities
- Share knowledge or processes with other people
- Compare one city to the other

VERSION **1** DATE 12 September 05 DATE OF FIRST VERSION 12 September 05

FULFILLED FUNCTIONS

DESIGN FACTORS

DISCUSSION

Due to an information-oriented society, most information is available on the internet. Climate change project managers could search hours and hours to find climate change solutions on the internet, but it is hard to say they have all the information they need. In addition, visiting many website is not productive and time consuming. CityLink Solution will provide CityLink Solution provides not only a simple mapping tool to search the city groups that have similar threats, but well organized information such as detailed city information, and solution description. In addition, CityLink Solution provides a function to compare one city to others in terms of general city information, threats and solutions.

Threat Mapping is a searching tool to find a city group that suffers similar threats. Threat Mapping is an Important tool in CityLink Solution because it narrow down cities from hundreds to about twenty.

CityInfor provides all the cities' general information, listed
As demographics, culture, location, energy, weather, health care, transportation and etc. It is critical to under stand the other cities to adapt their solutions; even thought one city has the same threats as others, it doesn't mean they could have same solutions due to different city capabilities, culture or public awareness to implement solutions.

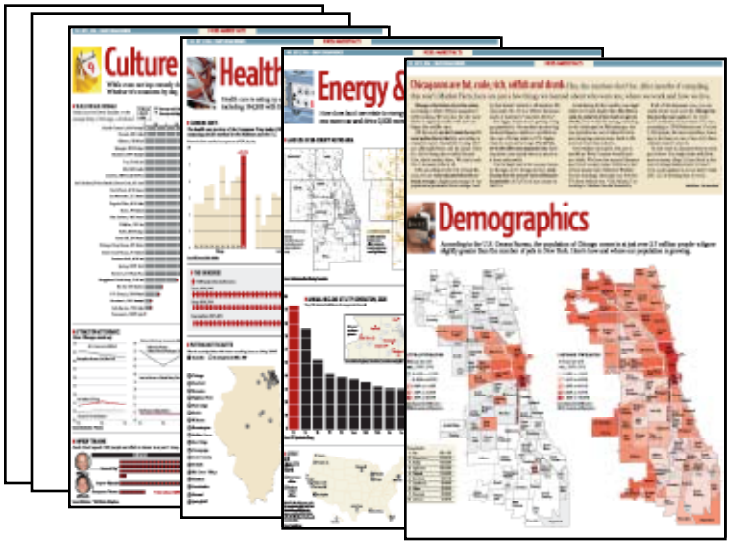
Threat vs. Solution is main information that project managers need. It starts with short description of major threats and solutions. By clicking the threats, managers can see the detailed information of threats. Threats are described in the chronological order. Managers will have full understand how the threats become serious and different from their own cities. Solutions are also chronological order in terms of detailed descriptions of solutions and implementation processes. It tell managers how solutions initiated and implemented. Project managers can adapt the solutions to theirown cities' capabilities, culture, and public awareness.

After search all the cities, managers can compare one city to others in terms of general information, threats and solutions to prioritize best-suited solutions for their cities.

SCENARIO [3 ENTRY SUBHEAD STYLE]
Jinho is a project manager in Korean Climate Change Adaptation. Recently, his country started a project to adapt climate changes. His team is in charge of finding solutions for sufficient water resources. He visited to CityLink Solution and typed insufficient water on the searching engine. Screen showed cities which has the same threats as Korea. He clicked Japan. He could see all the general information about Tokyo. He thought Tokyo has lot of similar capabilities, culture and public awareness to Seoul. He clicked Threat vs. Solution button and could see how the threat become serious and different from Seoul. Tokyo plans to develop underground water resources as a solution of insufficient water resources. Jinho could see all the information that how Tokyo initiated the project such as finance, information, technology and human resources,
and how Tokyo implemented it. Jinho understands what and how to develop underground water resources, and adds more ideas to improve the solutions.

DISCUSSION (CONTINUED)

Treat Mapping



CityInfor

Threats : Hotter & Wetter

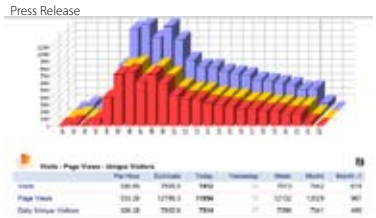
Water

Population

Food

Transprotation

Currently, over 1 billion people on the planet do not have regular access to fresh water. About twice that number, 2.4 billion people, lack adequate sanitation. Water-related diseases, that are preventable, kill one child every eight seconds, and are responsible for 80% of all illnesses and deaths in the developing world. See June 5, 2003 UN Press Release



the hydrologic cycle. It causes more

Solutions

Solutions : Rainwater

Rainwater

Underground

Water recycle

Reservoir

On the Harvard Law School campus, Robert France, associate professor of landscape ecology at the Design School, looks at ways that rainwater can be used in a more efficient way through building and landscape design. (Staff photo Kris Snibbe/Harvard News Office)

City Comparision

Threat vs. Solution

System Element

TITLE

Alliance Connector

existing
modified
speculative **SE-10**

PROJECT	SUPERSET ELEMENT/S	RELATED ELEMENTS
Urban Climate Change	Solution Database	
ORIGINATOR: Sang-Ho Lee		
CONTRIBUTORS		
SOURCE	SUBSET ELEMENTS: Ally.org, Data Trans, Ally Storage, Receiver, Dot Connector	

DESCRIPTION

Alliance Connector is a data analysis system to find the best-suited alliance combinations between private and public institutions. Alliances are critical to process projects and implement solutions efficiently and productively. Alliance Connector categorize and prioritize all the institutions in terms of strengths, weaknesses and capabilities, and connect the best-suited partners based on specific requests from project managers by satisfying other institutions' needs like technology, information, finance, and human resources.

PROPERTIES

- Proposal collection website
- Data analysis and prioritization system
- Data transmission process software
- Alliance data storage
- Customized alliance connection system
- Automatic data delivery software

FEATURES

- 1. Collect detailed alliance proposals from the out side private/public institutions
- 2. Transmit the proposal information to main alliance database
- 3. Categorize and prioritize the data based on technology, information, finance, and human resources
- 4. Receive alliance requests from project managers in terms of technology, finance and human/information resources
- 5. Search on the main database to determined best-suited alliances based on specific requests from project managers
- 6. Provide project managers potential alliance candidates¡¯ information in terms of what
- they demand and offer to establish an alliance

FULFILLED FUNCTIONS

Seek Human Capital
Gather Planning Data and Tools
Balance Human/Financial Resources
Establish likely partners and objectors
Establish partnership agendas
Maintain partnership with alliances
Generate external support

DESIGN FACTORS

Unable to find appropriate data
Inaccessibility of existing data
Unknown availability of human resources
Unable to access needed tools
Unorganized a mass of hard copy documents
Lack of tools and systems to improve capacity
Insufficient resources
Lack of trust

DISCUSSION

1. Alliance Connector
Alliance Connector looks for an agreement between public and private institutions to achieve different goals and interests by sharing each institution's advanced resources like technology, information, finance, and human. Most of public and private institutions try hard to establish good alliances with the institutions which have superior resources. Alliance seekers spend tons of time and money for that because they know even though an alliance is hard to achieve and maintain, it provides core capabilities once it set. Alliance Connector will be a tool to help City of Chicago establish an advanced alliance network.

Alliance Connector is consisted of 4 main functions listed as
1. Collect detailed alliance proposals from the out side private/public institutions
2. Transmit the data to Ally database, and categorize and prioritize the data based on technology, information, finance, and human resources
3. Receive alliance requests from project managers and search best-suited alliances
4. Provide project managers' potential alliance candidates' information

2. Ally.org
All the functions are operated by six elements. Ally.org is a website to collect proposals from out side organizations or individuals, alliance seekers. Proposals are submitted with a digital format on the web page by clicking boxes and writing a proposal and company summary. The boxes are categorized by two main groups such as OFFER and DEMAND. OFFER section is the information, what they can offer or contribute to City of Chicago. OFFER sector will give full information to understand alliance seekers' superior resources. DEMAND sector is the information, what they want from City of Chicago. Surely, there are some volunteers and donators to help City of Chicago in terms of technology, finance and human/ information resources.

3. Data Trans & Ally Storage
The submitted proposals are transmitted to Ally Storage by Data Trans. Data Trans is a data transmission system. It categorizes the proposals in terms of technology, finance and human/ information resources, and prioritizes each categorized group in terms of value and urgency and cost.

4. Receiver
Receiver is a tool to submit alliance requests from project managers in City of Chicago. After developing solutions in projects, managers identify what they need to implement best-suited solutions efficiently and productively, and evaluate their own capabilities of implementation in the organization. Whatever they come up with

DISCUSSION (CONTINUED)

needs, they submit their needs by using Receivers. A request can be completed by submitting a description of project and insufficient resources.

5. Dot Connector
Dot Connector is a search engine to find the best-suited public and private institutions to ally with City of Chicago. After identifying and prioritizing potential institutions in the Ally Storage, Dot Connector gathers more information about the selected institutions or individuals on other business intelligence websites to increase the possibility of successful alliance establishment.

SCENARIO [3 ENTRY SUBHEAD STYLE]

Mark is a project manager, Climate Change Department in City of Chicago. Two months ago, he received information from Threats Analysis Department that by increasing temperature, Chicago will become significantly hotter and drier by the end of the century, causing severe air pollution, a drop in the water supply and up to six times more heat-related deaths in major urban centers. Among the threats, dropping water supply is the most urgent.

Mark's team look for possible solutions to reduce the level of threat, dropping water supply. At the end of the project, they end up few possible solutions listed as saving water campaign, developing underground water resources and building reservoir. City of Chicago has capacities to implement two solutions, saving water campaign and building reservoir, but they are lack of resources to develop underground water resources; no technology to find underground water resources and pump up the water, insufficient finance, and no experts to plan the project.

After the capability evaluation, Mark submits a description of project and insufficient resources. 20 minutes later, a screen opens with well organized potential alliance institutions' detailed information, categorized and prioritized in terms of technology, finance and human resource. Mark establishes an alliance with UNCOVER WATER COPERATION, which has an advanced technology to find underground water resources and pump up the water by accepting their demands such as City of Chicago's future projects involvement priority. Mark also ensures sufficient finance from David Foundation, financial donation, no demands. In addition, five individuals, experts in developing underground water, volunteer for help to plan the developing plan.

DISCUSSION (CONTINUED)

Alliance Connector Process Map

Explore alliance, donaiton or volunteering opportunities with government organigations

Collect detailed alliance proposals from Alliance Seekers. Donaiton, Volunteering or Alliance. Technology, Information, Equipment, Finance, Human resources.
CO2 Emission Trade, Payment, Future project Priority, Tax incentives, Resource exchange, and etc.

Alliance Seekers

Give and Take, Establish Strategic Resource Network

Ally.org

With all the data they gather, contact potential alliances

Best-suited Alliances

City Hall

Searching Engine to find the best-suited public and Private institutions

InforLink

Dot Connector

Rathers more information about the selected institutions or individuals on other business intelligence websites