



First Things First

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Abstract

A major flaw in the advanced development process is the failure of organizations to explore adequately the concepts they are about to develop. Development begins with an already-formed concept and proceeds to the determination of how to realize it. In a truly competitive global business environment, this won't be good enough. Organizations will have to routinely obsolete their own products to remain competitive – and they will have to do so with market-leading new concepts. To achieve this, it will be necessary to reform the development process; a part of the answer is a two-step process in which the exploration of concept is given full attention. The goal is concepts of reliably high quality, generated predictably as they are needed.

Why is it that the "what" part of new product development gets such scant attention in the development process? *What a new product should be* is a question seldom seriously explored. In the world of advanced planning, the notion of "concept" is pretty narrowly constrained. True development of a new concept more often than not is ignored in favor of detailed investigation of variations on already-formed ideas introduced intact at the beginning of the process! The "concept" in this all-too-common model is most likely (1) a designated evolutionary replacement for a product already in production, (2) a preconceived idea that has occurred to a senior executive, or (3) a competitor's new offering whose qualities must be met or exceeded. What happened to exploration and innovation at the concept level?

Competition

I am reminded of the old saw from operations research. A crack mountain climbing team is assembled to break the world's record for climbing the highest mountain. With speed and efficiency they quickly reach the top, only to gaze on a nearby higher mountain. Moral: find the right mountain before you climb.

In a relaxed world, the team could move to the higher mountain and repeat their skillful climb. But in a highly competitive world, another team might have already found that mountain. The situation isn't much different in the business world; there is little time for conceptual mistakes.

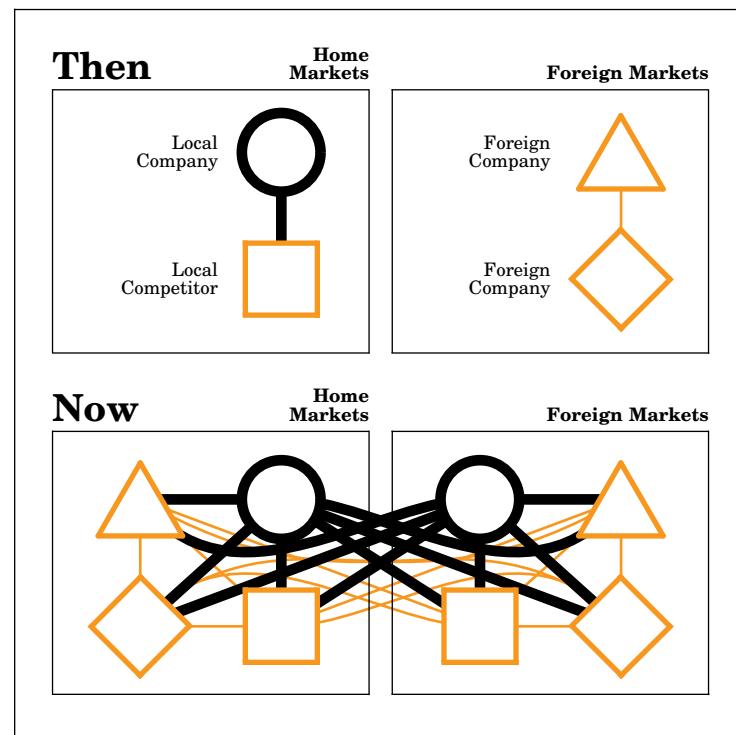


Figure 1 Competition Has Increased Multifold

Competition in most business fields has increased multifold in the years since World War II and the cold war. In the good old days,

markets were relatively isolated and discrete. If your company was in the U.S., your markets were probably there too, and your competition was most likely similarly contained. In our global economy, a company faces competition from abroad in its home markets and probably has foreign branches of its own competing with foreign companies in their home markets. And all this is in addition to competition at home and now abroad from local companies also with foreign branches (Figure 1). The growth in competition has not been linear.

Coupled with the dramatic increases in the capabilities of information technologies, this has put severe pressure on the development process. To stay competitive, a company must now upgrade its product offerings at a frequency that mandates almost continuous change. And that doesn't guarantee success. An obvious question is, what can be done to improve product development effectiveness? Or better stated, how can innovation be applied to the innovation process itself to create products with greater return over a longer life cycle?

The Development Process

I think the answer lies in rethinking how efforts are distributed in the development process. If the process is viewed as what takes place from initialization until achievement of a new product specification, it usually now is a one-step process in which the focus is the realization of a given concept. The range of exploration is limited by the commitment to concept, and the primary development activity is "giving form". Not unexpectedly, the innovations produced are at the design detail and craftsmanship levels (see the Quality Pyramid in my article, "Another Look at Quality"). Innovative improvements in function, human factors and cultural fit are examples of the former; innovations to improve quality control in production are examples of the latter.

Reflecting on the experience of the mountain climbers, development should be redefined as a two-step process in which a separate, front-end innovation effort is devoted to finding, exploring and developing a concept (Figure 2). The *concept* in this model is a *result*—the end product of a dedicated *planning* phase of the process. It is, in essence, a highly refined charter or project brief for a follow-on team that will conduct a

second *designing* phase of the development process.

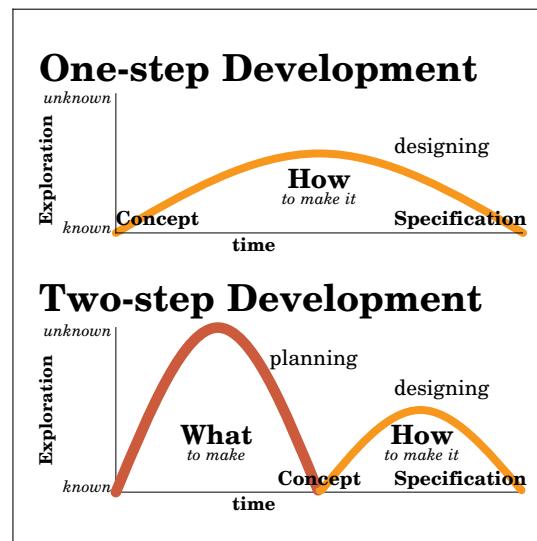


Figure 2 First Things First: Concept Before Details

Concept vs Details

This model forces concentration on innovation at the concept level where ideas can range broadly and the revolutionary may be as likely as the evolutionary. In an environment where new ideas are expected and sought out, an innovative concept is much more competitive than innovative details. Witness Apple's new iPhone, or from a longer perspective, the Sony Walkman.

A good concept, however, doesn't have to be revolutionary. In fact, it is possible to get so far in front of potential adopters that the concept fails. The Xerox Star system that preceded Apple's Macintosh was too far ahead of its time. It took Steve Jobs' clear recognition of its value as a concept and clearer view of how to develop it to turn it into the interface system we all use in various versions today.

So what makes a great concept? A great concept is complete; it has integrity. It also may be surprising—better if it is. But for sure, it fits needs and aspirations like a glove.

Needs and aspirations infer users, and meeting their expectations is a major part of what builds integrity into a concept. We all hear about designing for the "customer" and meeting the needs of the "end user", but these users are but two of many whose needs should be considered. The *customer* is the buyer; the *end user* is the operator. Meeting the needs of the user means

meeting the needs of these users—and: the user who ships the product, sells it, cleans it, maintains it, repairs it, adapts it, recycles it and retires it, to name just some. To each the product looks uniquely different.

Great concepts usually are also systemic in that, besides meeting the needs of multiple users, they have multiple ways of operating, embrace multiple component elements, draw on multiple functions, services, policies and organizational constructs, and generally perform as you might expect a system to perform. Systemic concepts are hard to copy simply because they are complex. And this translates to longer life and greater return in a highly competitive market.

Development for Today

So, first things first. A development process for today needs first to put serious effort into finding good concepts to develop. Back to the mountaineers—finding the right mountain is a prerequisite to winning the mountain climbing award. The two-step process provides a much more reliable means for establishing a concept worth developing. At the concept level, exploration can be broad and the costs of changing direction are minuscule in comparison with course changes later in the development process.

Development time need not be extended, either. Beginning with a concept carefully thought

out can be a time savior downstream. Schedule extensions not uncommonly are traceable to mistakes resulting from uncertainties in how an initial concept should be interpreted. Combining a conceptual planning phase with a detail designing phase shortened because it doesn't have to reinterpret and redevelop the concept typically means no significant increase in development time. In practice, it may actually shorten the time because there are so many fewer opportunities for wrong turns.

Using Structured Planning, a process for concept development, graduate student teams at the Institute of Design routinely produce innovative system concepts in fifteen weeks. My experience in industry is that the process takes longer—more like six months. The difference occurs because corporate planning team members usually are on loan from their home departments and have responsibilities there that continue to require their time.

Ultimately, the message is: when the competition is tough and competitors are numerous, a company may well have to obsolete its own products. To do that successfully, it will have to have concepts of reliably high quality ready predictably when they are needed. Reliability and predictability are not the hallmarks of seat-of-the-pants innovation. Getting the concepts right and on time will require focused concept development, free ranging planning teams, and a planning process tailored to the job.