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The adoption of technological change: why vendors see customers as tortoises and customers see vendors as hares...

The race...

IT and technology vendors desire to *win the race* to serve the needs of their customers, but their expectations about the length and pace of this race often differ wildly. Vendors tend to think that IT moves at the pace of a tortoise, and IT thinks that technology vendors expect them to move like a hare. Whether it is software (e.g. virtualization) or hardware (e.g. blades), IT tends to adopt technology more slowly than vendors expect.

Why is that?

Several overlapping processes create tension between IT, their users, and outside vendors, which affect the pace of technology adoption.

The view from the Tortoise:

First, IT must serve two masters: end-users as well as upper management. Users often demand:

- 100% up-time of everything
- Fast adoption of new, exciting technology in a seamless fashion
- Few limits on what software or hardware they can use
- Access (faster) to whatever information they desire
- Faster IT response to whatever they need

IT and the corporation they serve require:

- 100% up-time of everything
- Compliance with government regulations and IT audits
- Empowering users with hardware and software to access information they need to work effectively
- Reduced cost
- Improved security

IT tends to live day-to-day in the trenches, buffeting end-user demands and upper management requirements, so they feel beleaguered. The need for stability, reduced cost, less staff, etc. are often at odds with the need to meet end-user demands for faster IT response and new tools.

IT seldom has the resources to think about future problems. It is naturally reluctant to test, much less deploy new technology, no matter how grandiose vendor claims for reduced cost, or enhanced performance, or reduced carbon footprint. Testing new technology often requires resources that IT cannot afford to allocate, and any promised benefits need to be balanced against increased costs and the risk of increased downtime.

The Hare's perspective:

Software and hardware engineers are often working on exciting technologies perhaps years ahead of potential market introduction. A software or hardware marketing manager is often under pressure to bring a new technology or product to market as quickly as possible so the company's R&D expenses can be recouped as quickly as possible. Toward the end of the development process, marketing managers become deeply involved and enthusiastic about the new products. Not surprisingly, they tend to lose focus on the ultimate end-users and their somewhat more mundane concerns.

This inward, product focus is reinforced by the IT trade press, whose job is to identify and promote exciting new technologies. They learn of these new technologies from the manufacturers, who in turn read about the new technology in the trade press. As a result, marketing managers then tend to overestimate market awareness and enthusiasm for a new technology. How many times, for example, have headlines proclaimed someting like, "The year of the X" (e.g., SAN, Blade). Often many years go by before indeed it is.

Given the time lag between the development of new technology and deployment in the market place, vendors have to think about the needs of IT that may be several years out, whereas the IT manager generally does not have time for that. Thus, the technology vendors push new technology that solves problems that IT may not realize they will face in the future. Vendors tend to forget that.

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Examples...

Our technology clients are often baffled when IT reacts so cautiously to new ideas, even those with "obvious" benefits.

However, once IT has a solution in place, even if it is inelegant, they tend to leave it in place until it breaks, because IT does not have the resources of the incentive to search for an optimum solution. As one IT respondent said in a focus group, "I don't get paid to try to save money; I get paid to keep my servers running." When searching for solutions to immediate problems, IT tends to adopt the first solution that minimally meets their criteria, rather than continue to search for the optiumum one.

- For example, a surprising number of companies with 1,000 or more PC's use static IP addresses for their desktops. They started with static addresses maintained in a spreadsheet. It ws never worth their effort to change to DHCP. They assign IP addresses when they configure and setup the PC. It never moves. Why bother with dynamic addressing for a PC that will sit on a desk, never moving, until it is retired?
- When we did the first research on blade servers, we presented IT decision makers with a description of the concept, because there were no x86 server blades in the market yet. Many respondents rejected the concept out of hand; they found it too different and were concerned with single points of failure. The quick acceptance desired by our vendor was met with resistance. Now blades are a more widely accepted technology. What had changed? Several things:
  - First, as blades began to be introduced, vendors could point to companies that had successfully adopted the technology, thus reassuring other IT decision makers
  - Industry analysts, unlike the trade press, had the opportunity to evaluate them, and often these were positive evaluations, providing additional reassurance.
  - The need for greater density and manageabiity had increased among IT, thus increasing their interest in a potential blade solution.
  - There was much more upper management pressure to reduce energy and hardware costs, so it became easier to rationalize the expenditure of blades to upper management.
- Virtualization now has serious momentum, but for the longest time one common point of resistance to server virtualization was "all your eggs in one basket". When challenged with respect to the costs of managing multiple underutilized servers, they came back with a single point of failure argument against virtualization. It wasn't wrong-headed, but was a hard argument to refute.

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Yarnell Difference

There is not an easy solution for dealing with IT's reasonable caution, but there are approaches that can help our clients conduct research and market into that cautious attitude. We can help respondents envision alternate scenarios/futures. Often the response of IT to new technology or solutions is based on their current situation and the current technology and business environment, which can change in the future. This is one reason why respondents in focus groups will often say,"It depends" before giving their reaction to something. We can help our clients construct and present alternative environments/scenarios to respondents to help our clients better understand and overcome barriers to trial as well as to identify triggers for purchase.

Role of research

One of the roles of research is to help marketing managers assess market acceptance of a product. By obtaining customer reactions to potential new products and technologies customer views and concerns shape both product features and marketing communications.

The research on blades illustrates a more significant role of research when investigating new technologies. As we noted, initial reaction to the concept of blades was negative. It explored the barriers to consideration that would have to be overcome as well as identifying the conditions under which IT decision makers would find the concept more appealing.

The role of industry media in the adoption of new technology: Trade Press vs. Trade Analysts

Unlike other media, the trade press is hungry for "now" content, and technology vendors are eager to oblige. Many vendors representing many technologies work hard to feed a flurry of content to the press in the form of PR releases, interviews and testimonials to help generate awareness and excitement and hopefully momentum for their new products and solutions.

But as we have seen, IT pros tend to move more slowly. They know that many headlines overpromise, and that often hyped technologies today never come to fruition at all. They do not ignore the trade press entirely. IT pros are responsible for knowing what's going on in the industry today, so if they notice a new technology that's "getting a lot of ink" and chatter, they can mark it down as something to follow, much like a hot stock might bear watching, just in case.

On the other hand, analysts tend to take a more measured and long-term approach to new technologies, and market themselves as offering thoughtful, empirical analysis of a relatively few relevant technologies so they can give objective recommendations based on experience and testing.

When it comes to actually bringing in new, important technologies, IT Pros tend to match the pace of the analysts by relying much more heavily on the analyst's sometimes slow to be produced, but more likely to be on the mark recommendations, thus reinforcing their image as Tortoises to the vendor Hares.

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