Discipline of Market Leaders and other Accelerators to Measurement

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Abstract. We often hear that it is difficult to get software measurement into practice. At least one important reason for this is that traditional software measurement is not aligned with the strategic objectives of the organization. When software measurement is aligned with an organization's market discipline then the implementation is accelerated.

One of the reasons it is difficult to get measurement implemented is that it is unaligned with organizational objectives. Measurement is traditionally used to increase quality, increase programmer productivity, and reduce costs. Oddly enough, these are not the highest priority objectives for a number of organizations, so therefore traditional measurement is difficult to implement in them.

The Discipline of Market Leadership is a survey of how 80 organizations out-achieved their competitors. The authors found that focusing on one of three market areas was the answer: operational excellence, customer intimacy, and product innovativeness. Operationally excellent organizations have a "formula" for their service or product. Their menu of choices is small, limited, and with that menu they deliver excellently. Standard examples are McDonalds and Federal Express.

Customer intimate organizations seek quite a different market niche, namely a total solution. Whatever the customer wants gets added to the menu. The menu is long and custom-made for each engagement. Financial service institutions might call customer intimacy a way of getting a greater share of the customer's wallet, there are few spending alternatives outside of the services offered: bank and savings accounts, certificates of deposit, credit and debit cards, travel arrangements, etc.

Product innovative organizations pride themselves on maximizing the number of turns they get in the market. They introduce many new products, selling innovation and features as opposed to, say, price. Examples are Intel, 3M, Sony, and Bell Labs. They measure their success by the number of new product introductions, the number of patents, and/or the number of Nobel prizes.

The authors of *The Discipline of Market Leaders* are quick to point out that all organizations have to have at least threshold characteristics of all three disciplines, but they have to focus on and excel at only one. One example of lop-sidedness cited was IBM's legendary customer intimacy being out-weighed by its inattention to price (that is, operational excellence), so competitors that were not as strong in customer intimacy could gain in-roads to IBM customers with price.

Measurement of the type we are used to, the type espoused by the Software Engineering Institute and Quantitative Software Management, applies almost exclusively to organizations wishing to be operationally excellent. We typically have nothing to offer to customer intimate and product innovative firms in our measurement or improvement methods.

Many software development organizations do not strive to become operationally excellent, so we have left them in the lurch, though we tend to treat them as resisters and of bad character! In fact, it is nothing more than a mismatch of goals. There is, for example, a large set of software development organizations that strive for customer intimacy and essentially will do anything their clients request. Those organizations get to know their clients very, very well, sometimes better than the clients knows itself. An example of this might be a payroll service that has seen every variation on payroll and knows more about payroll processing than any in-house payroll department could. The most customer intimate payroll service offeror would take over their customers' payroll departments!

What do you think Microsoft's market discipline is? I think it is product innovativeness. It touts its new, glitzy features, not its up-time or reliability. It wants to own/earn its clients based on new features, not offering software that is operationally excellent. In that context, the Software Engineering Institute's Capability Maturity Model for Software is silent on product innovativeness and customer intimacy: it applies only to organizations wanting to be operationally excellent. Same for traditional measurement.

What are we missing in all of this? A more global view, one that listens to and responds to our measurement customers. We need to see that the potential rejection of our measurement efforts is NOT an indicator of bad character or resistance, but may be an appropriate response to measures that do not fit the strategy. We need to joint problem-solve with our clients to develop new classes of measures that simultaneously meet our high standards for objectiveness and their high standards for relevance.

Examples. Let me relate several efforts in which I have participated:

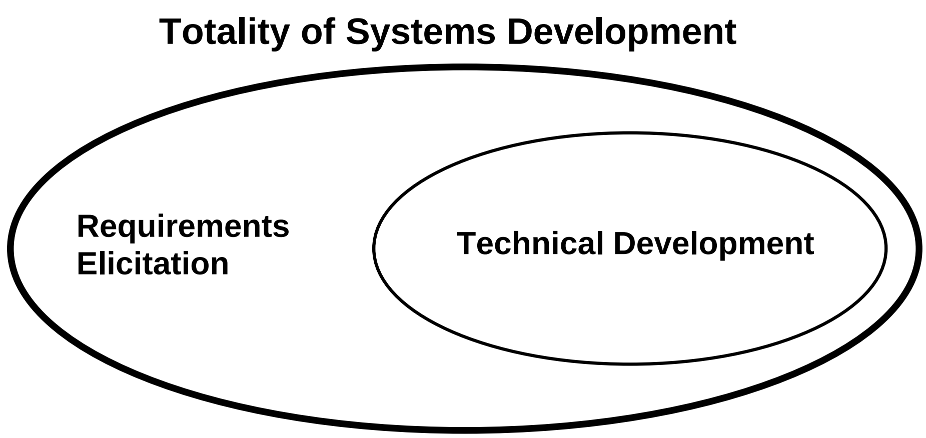
1. One brokerage house was not interested in software costs or quality, but rather what it called time to market. In fact, it was not speed that was so important, but rather during the frantic time that a deal (such as an initial public offering) was being put together Information Technology was being asked to respond quickly. The response had to be quick enough so that the broker could earn as much as possible by offering as many services as possible. It was a question of wallet share, which in turn is a customer intimate approach. The brokerage wanted the customer to maximize its spending with the brokerage so it had to have the longest menu of services possible. We settled on a measure of the percentage of the total deal that did not go to the brokerage. I/T's job, then was to offer a realistic plan for continual reduction of that (missed wallet share) figure.
2. One computer-oriented defense contractor said it wanted project measures, but when pressed it was clear that projects were not managed - and therefore not measured - in the traditional way. The government client wanted a provider that would do what it requested, not study the request and offer alternatives or push-back. Cost, quality, and duration were not important to the client, only that it got what it wanted in reasonable terms. This, too, is a customer-intimate approach, one that makes the menu of services just as long as the customer requests are. Naturally, the provider has to deliver the systems within a threshold value of cost, quality, and duration, but there were already many other providers that performed better in terms of cost, quality, and duration, but were rated too low in customer responsiveness to be considered! In fact, the client changed its mind often, rendering previous work inapplicable. This would cause rework that would traditionally be held against the provider. Traditional project-oriented measurement was irrelevant in this setting. We recommended several measures: of the total spent by the customer how much went elsewhere (to be minimized); time spent in adversarial settings (to be minimized); time spent with the customer understanding its business (to be maximized); and number of people on our staff with credentials like our client's (to be maximized).
3. A computer services firm had been the prime contractor for a long time for a government client. The computer services firm provided all of the computer programming and operations for a particular type of payment that the government entity made to deserving applicants. The contract was up for renewal and the incumbent wanted to propose a set of measures going forward that would indicate its operational excellence. The usual suspects were offered in discussions with the provider (now bidder), but those measures did not seem to resonate, even though they were "reasonable." It turns out that the government organization was feeling behind the times in terms of technology and really wanted a new, modern I/T provider, not a better, cheaper, faster provider of old technology. In fact, there was no business driver for the

desire for more modern technology, only a (vague) belief that such technology would reap financial benefits to the government in terms of lower costs and greater flexibility. The measures we settled on were:

- plan vs. actual implementation of a set of new technology introductions,
- hours spent training the government client on the principles of that new technology,
- reliability measures directly related to the government organization's business, for example, cost of government rework due to provider payment errors, idle government worker hours due to system downtime, and government time spent in meetings or on the phone with deserving applicants due to provider service failures.

These measures were instead of other, traditional measures, such as percentage system availability (e.g., 99.9% available), data entry error rates (0.1%), and a threshold number of ABENDs per day, none of which related to the government mission or daily reality.

New model emerging. There is a new model of systems development emerging. It is consistent with the lessons of *The Discipline of Market Leaders*. The place it is first seen is a new breed of systems developers: fixed price, fixed duration efforts. Their model is something like:



The totality of the systems development effort is internally divided into two phases: obtaining customer requirements and developing a system to meet those requirements. Obtaining requirements is an open-ended effort, difficult to estimate, and bid on a time and materials basis. Once the requirements are obtained, they are more or less thrown over a wall to a heads-down software factory. There the requirements are quickly transformed into an operational system.

Changes to the requirements are not allowed during the factory period. It isn't that changes are not requested, but rather they are queued and made candidates for the next release. A small percentage of high-priority changes can be accepted and passed on to the factory, but usually it is a single digit percentage, by contract agreement.

Because the factory can work with its head down, it is fast and good. It has learned how to be, perhaps by emulating/applying the best practices promulgated by the NASA-CSC-University of Maryland Software Engineering Laboratory, the SEI, Cleanroom, and others.

If the requirements need to change dramatically before the system is developed, then the whole arrangement changes back to what we traditionally have today: gather requirements, try to freeze (or at least chill) them, develop a system to meet the requirements, in the midst of that then change requirements again and try to absorb the newest changes, etc.

The newer[*] business model achieves several objectives:

1. People attracted to dealing with customers face-to-face do that and only that.
2. People attracted to dealing with the technical development of systems do that and only that.
3. People who like to span those boundaries get to do that, too, because they are part of both the requirements elicitation and the technical systems development so that, in fact, the requirements are not thrown over a wall.

Technology improvement and change management are different in the two areas. Technical development is the stuff we are used to seeing, but the technology of customer intimacy used in requirements elicitation is new, both in the technical aspects and in how change is introduced into a on-going working relationship between technology solution providers and their clients.

I see ever more organizations offering this newer model. What would be the downside to the client? Anyway, the measurement implication is that a wholly different set of measures would apply to the customer intimate activity than to the technical one; the technical one is more or less a solved problem. Now we as a profession need to turn to the other two disciplines of market leaders and offer them something!

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References.

Michael Treacy and Fred Wiersma. (1995). *The Discipline of Market Leaders: Choose Your Customers, Narrow Your Focus, Dominate Your Market*. Addison-Wesley.

Fred Wiersema. (1996). *Customer Intimacy: Pick Your Partners, Shape Your Culture, Win Together*. Knowledge Exchange.

[*] I hesitate to call it "new" because Winston Royce, that doyen of our profession, described it in a keynote address at the National Security Industrial Association Seventh Annual National Joint Conference, April 23, 1991, at Tyson's Corner. His talk was entitled, "A completely new software life cycle."