M*A*P YOUR BEST ROUTE TO PRODUCT VALUE

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INTRODUCTION

Why does one company consistently succeed with its new products, while another, clearly capable of brilliance, turns out a blockbuster only to follow up with a nonstarter - or two or three? Think of Apple and Motorola. Apple's success is stunning - Macs, iPods, iPhones, and iPads. Apple customers eagerly queue up to buy the latest gadget from the Jobsian works. But Motorola, whose long and admirable history of innovation predates Apple by nearly five decades, has had a spotty record in recent years – and certainly not for lack of genius. Rather, the company that developed and manufactured the transponder that transmitted Neil Armstrong's first words from the moon when Steve Jobs was still in grade school lacks consistency.

Motorola's 1996 StarTAC mobile phone made Time magazine's list of all-time great gadgets. Eight years in the wilderness followed. Then it introduced its sleek and stylish RAZR cell phone. It sold more than 50 million units and won acclaim from PC World magazine as one of "the 50 greatest gadgets of the past 50 years." Fast forward to 2010, when Motorola's Droid got off to a promising start. So that's three hits in 14 years. Not bad, but what about those dry spells in between?

Why are enormously talented companies like Motorola trapped on a roller coaster of product development peaks followed by long stretches of mundane meanderings? It's not for lack of competency. Just imagine the heights Motorola (and others like it) could reach if it could consistently bring to life its dazzling ideas. It's been estimated that nearly half of all the resources spent on product development are devoted to products that fail. Waste should never be accepted gladly, but in a super-competitive global marketplace, it's a burden with potentially disastrous consequences.

PTC, the company I lead, has devised an approach for developers and manufacturers that can stem their losses by putting much greater emphasis on process. Called the Value Roadmap, this tool provides direction that can help correct inconsistency by connecting strategic opportunities with the business initiatives needed to capture their value, along with the supporting processes and capabilities needed to make everything work. The map brings a company's already available but unrecognized opportunities and initiatives into view. And it shows managers how product development processes can help or hinder a company's ability to achieve its business objectives.

Leaders hoping to add value to their organizations often set their sights on revenue and profit growth, and they expect their product development departments to deliver it. Twenty-five years spent working with developers has convinced me that those leaders are right - a company's product development process is the key to its consistent success. And the great product that devolves into a one-hit wonder does so only because the company that designs and manufactures it lacks an equally great process for refilling and executing its stock of successful product ideas. As a result, innovation lags, reputations suffer, and strategies fail.

Contrast that disheartening scenario with the year-after-year wins posted by companies like Harley-Davidson, Whirlpool, Lifetime Products, and Synthes, to name but a few. Their product development processes take into account not only customer wants and needs and business goals and strategies, but also the capabilities and actions required to bring those ambitions to life. These companies are using their accumulated knowledge to chart a course lined with one successful product after another.

How did they find their way to this land of consistent achievement? They fixed their sights on a guiding light, the Value Roadmap.

For decades, technology providers have tried to create a piece of software that would enable process change and augment a business' value, quarter after quarter, year after year. But their efforts nearly always fell short, not least because business executives got lost in the thicket of acronyms: How to distinguish between ERP and CAD and PLM and the benefits they promise? Now, my colleagues and I have found a way to help a company maximize its value on a continuing basis, taking advantage of CAD and PLM technology to revamp key business processes.

Based on exhaustive research conducted at more than 900 companies around the world and input from leading consultants and academicians, we have unraveled the common threads that run through the processes of successful product developers. And we've used those insights to create a map that shows manufacturers how to align their goals and processes to gain competitive advantage.
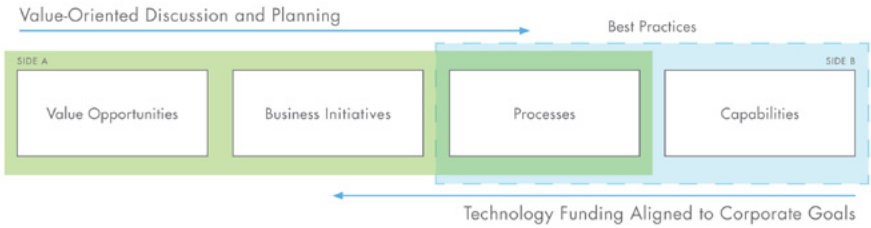
Figure 1: A two-way path exists within any organization between that company's high-level strategic initiatives and the processes and technical capabilities needed to help realize them.

The Value Roadmap has been fine-tuned through six iterations and has proven its worth in nearly a decade of practical use by thousands of our customers. In fact, the map helps turn the product development processes into an asset that sets a company apart from its rivals. Better yet, by using a scientific approach, we have been able to devise a method that is scalable and not just dependent on a few brilliant designers.

In the pages that follow, I will describe how the Value Roadmap can help you identify opportunities, prioritize business initiatives, guide planning and strategy sessions, and meet financial objectives by singling out the processes and technological capabilities – i.e., best practices - that play a central role in delivering consistently great results. ✿

WHY YOU NEED A MAP FOR PLM

Product Lifecycle Management (PLM) is fundamentally a process application. It is designed to deliver competitive advantage at the earliest possible moment, the point at which your company first conceives of a new product and begins planning to develop it. Its core premise is not about making one person or even one department more productive than the next.

Instead, PLM revolves around the notion that value is created by improving product development processes. And to do that, it works to make sure that information flows smoothly from person to person, upstream to downstream, and back. From the beginning to the end of a product's lifecycle, people are given the knowledge they need to do their jobs without breakdowns or interruptions.

In its idealized state, PLM is bliss. But if you stand back and look objectively at a process that involves hundreds or even thousands of people within a company working to develop products, the reality can be chaotic. Ask a company's employees about their product development process and they will likely tell you that it's somewhat disorganized, mistakes are made, and time and energy are wasted.

Just consider how most companies manage product design changes. An engineer develops a product or feature idea and then passes it to a colleague in purchasing who identifies the supplier that can deliver the part at an acceptable cost. The idea is then readied for manufacturing, where pre-production activities are set in motion.

Everything appears to be proceeding apace until the team realizes that the engineer who originally conceived the idea has modified its parameters. Enormous resources have been squandered because of a failure to communicate, and those who have been working downstream on what is now an incorrect version of the product are forced to regroup and start again.

Change management, it almost goes without saying, is the fundamental process an organization must master before it can become proficient at anything. When scores of people are working together across multiple organizations and time zones, perhaps moving up and down a supply chain, the system breaks down if they can't communicate changes effectively and determine whether those changes are good ones. But, ironically, change management is the process most in need of repair at many companies.

Organizations like the one in my hypothetical change-management snafu already have a process in place, of course; otherwise, they would never be able to get to the point of breakdown. The problem is that their existing product development processes are deficient.

To address this issue, we designed the Value Roadmap. Once a company learns to use the map, its development process – what my colleagues and I call the "as-is" version – can be transformed into the "to-be" version, a successful way to carry out product development and manufacturing.
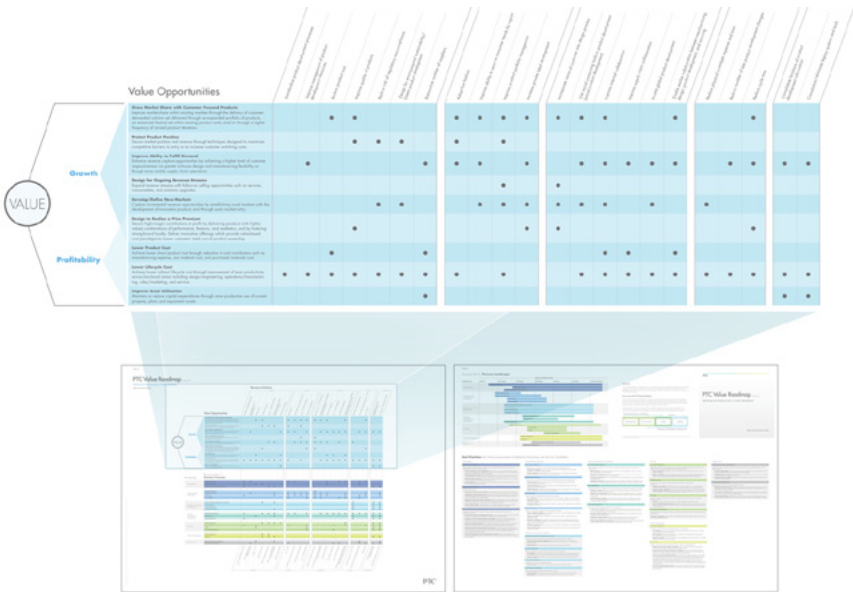

Figure 2: The Value Roadmap is a poster-sized, two sided document designed to engage a manager or designer on what matters most within their organization, and what challenges they are facing in their current product development processes.

Clients who use the map typically discover opportunities to create value while broadening their competitive advantage and increasing their revenues and profits. The method becomes a guide of sorts for launching value-oriented discussions about products and their planning.

Figure 3: The Value Roadmap is intended to be an interactive discussion guide designed to help managers and designers determine where they are with the product development processes and where they want to be in the future.

Put another way, the Value Roadmap gives you a greater understanding of your company's strategy – knowledge that can then be used to link that strategy to the best value-creating opportunities.

IDENTIFYING AND BUILDING GREAT PRODUCTS

Fact: Your customers don't buy your products because you have a brilliant team of executives or a top-notch marketing department. They buy your products because those products satisfy their needs and provide value. And as the producer, you know just how difficult it is to plan, coordinate, and gather the resources, both human and financial, that are necessary to making the products your customers want.

Innovation in product development is a mix of insight and process. For every light bulb that glows in someone's head, scores of other people have to do their jobs before a finished product leaves the factory floor. Innovation remains critical, but it will pay meager dividends if processes are weak.

Questions: Do you have enough bright bulbs in your organization? And if so, do you have a process and the people who can follow it so as to allow those ideas to become successful products?

Having studied the topic for years, we recognize where value resides. Accordingly, we believe product development should be at the heart of a business' strategy by creating an adaptable framework for allocating assets, building customer relationships, and perfecting supply-chain workings – all of it aimed at filling manufacturers' pipelines with the products customers want.

Caterpillar, which uses our software downstream in its service operations, shows how challenging change and configuration management can be. In the course of servicing the backhoes, excavators, generators, and other pieces of heavy equipment, Caterpillar's mechanics must pore through a mass of data created by upstream engineers to determine how to maintain and repair that equipment. Ongoing product and service updates by the engineers can run to hundreds of thousands of discrete pieces of information in a single year. The people downstream are charged with processing all these changes and determining which ones apply to their service operation and which ones don't.

In the Value Roadmap's "Change and Configuration Management" process overview, which incorporates industry best practices, users are first reminded that products should evolve in an orderly fashion, from conception to retirement. Then, to carry out the "standardized, automated change process," product developers are directed to "implement a closed-loop...process. Adapt routing workflows according to change severity. Automatically capture change history, electronic signatures, and audit trails. Notify affected parties of change effectivity."

Generally speaking, the closed-loop process moves along three paths: Someone identifies a problem but offers no solution; someone is contemplating a change but needs to conduct an impact analysis before proceeding; all involved agree that the proposed change is a good one. With all in agreement, the change is then made simultaneously. Otherwise, if someone in the service department, let's say, consults the manual to repair a part that no longer exists, he or she will be completely ineffective.

The Value Roadmap suggests that an automated process be put in place to guarantee that everyone, upstream and down, is aware of any changes being made. Equally important, the person making the change is automatically tasked with considering the impact of his or her actions, both in terms of time and overall cost. He or she must then determine if the proposed change makes sense.

The directives continue down a list of "cross-discipline change management," "partner change integration," and so forth, providing comprehensive solutions to longstanding problems.

Change management best practices, then, are among the keys that will enable you to pursue some of your company's core business initiatives and value opportunities. ✿✿

THE VALUE OPPORTUNITIES – ONE BY ONE

As I noted previously, CEOs looking to increase the value of their companies, whether public or private, typically choose to grow revenue or profit or both, and they expect their product development departments to contribute in a material way. No matter what kind of company you are running, we have identified nine fundamental opportunities to create additional value for your organization.

VALUE

Growth
- Grow share w/customer focused products
- Protect product position
- Improve ability to fulfill demand
- Design for ongoing revenue streams
- Develop and define new markets

Profitability
- Realize a price premium
- Lower product cost
- Lower lifecycle cost
- Improve asset utilization

Figure 4: Growth and profitability become the central strategies for adding value to a company, and the nine Value Opportunities are aligned with these core principles.

1. Grow market share with customer-focused products.

"Customer-focused" is the key phrase here. Your company stakes out a market segment, figures out what its chosen customers want and what they value, and builds a product that can be customized to fit a certain segment of buyers, perhaps even a single customer. In other words, you make your product highly competitive in a market chockfull of generic products. The product attracts business, thus increasing your market share, which equals increased revenue. You have seized the first opportunity.

The Otis Elevator Company focuses on its customers by offering a slew of configurations – from the style of wall panels and floors to lighting and elevator speed. For instance, a buyer can specify a chandelier or recessed lighting, mahogany doors, stainless steel, or white-wood panels. Doors can open on one side only or at both front and back. Virtually every feature can be set to meet a customer's specifications.

You might say that Otis thinks of every one of its customers as a unique individual. And by thinking in terms of a market of one, Otis gives its customers the flexibility to tell it what they want. That approach allows a company to appeal to smaller and smaller customer segments that its competitors cannot satisfy.

2. Protect product position.

How? It's all about creating barriers to entry. If your idea is a great one and you hold the patent (think 3M), or if you have unassailable customer loyalty (think Harley-Davidson), or if you've developed a suite of products that work together seamlessly (think Apple), you stand to reap the rewards.

Research in Motion (RIM), the maker of the BlackBerry, learned the hard way about patent protection when NTP, a small, Virginia-based patent-holding firm, sued for infringement of its wireless e-mail technologies. The judge in the case ruled that NTP did indeed hold the relevant patent, and RIM ended up paying $612.5 million to settle NTP's claim. It had no choice if it wanted to continue moving forward.

As I alluded to earlier, companies like 3M are voracious collectors of patents. Their success depends on product exclusivity, and the more patents an employee holds, the higher the pedestal he or she occupies. I know that for a fact because I'm married to a Ph.D. engineer whose colleagues at 3M held her in high esteem – not exclusively for the seven patents she holds, but they didn't hurt her reputation.

Another barrier to entry arises when an established competitor runs a capital-intensive business. Intel, for instance, invests so much money in the fabrication of its X86 chips that most newcomers wouldn't try to challenge its preeminence.

3. Improve ability to fulfill demand.

This opportunity requires a product developer to respond to market demand more quickly, less expensively, and, if possible, with a better supply-chain strategy. The best way to do that is to remain flexible so that you can design anywhere and build anywhere (the concept's acronym is DABA).

At many businesses, supply-chain flexibility already plays an important strategic role. Say a company like John Deere wants to produce tractors in China for Chinese customers, surmising that manufacturing locally will get its goods into the market quicker and with lower transportation and labor costs. By using more locally built components and native workers to produce slightly different tractor configurations on Deere's basic platform, the company can lower its costs and increase its value.

Dual sourcing is another way to improve your ability to meet demand for your product. You don't want to depend on a single supplier for a critical component if the supplier operates in only one country. Should you decide to start building your product in another country, you'll likely have a difficult time negotiating for the parts you need, not to mention the added costs for shipping.

Relying on a single microchip source effectively killed Ericsson's mobile-phone business. The trouble started in 2000 when a fire broke out in a Philips plant in New Mexico. Ericsson and Nokia were both affected, but Nokia moved quickly to fill its chip needs by contacting several other suppliers and reengineering some of its phones to accept different kinds of chips.

Ericsson, meanwhile, assumed the problem would soon be corrected. By the time it realized otherwise, there were no chips to be found. Had Ericsson not wedded itself to a single chip supplier (Philips) as a way to simplify its supply chain, it could have better weathered the crisis.

Disruptions can occur tragically and without warning anywhere in the world, as the 2011 earthquake and tsunami in Japan has shown. At this writing, there are similar fears about the stability of the worldwide supply chain. Manufacturers of products ranging from foodstuffs to automobiles and technology have been affected. Names like Nestle, Ford, Sony, and scores of others are feeling the impact. In early April, Ford Motor was forced to halt production at its Louisville, Kentucky, truck plant for lack of Japanese-made parts.

4. Design for ongoing revenue streams.

If you buy a Hewlett-Packard printer and watch it consume printer cartridges, you will quickly realize that HP really makes its money by selling those cartridges. Like Gillette with its patented razor design that is only compatible with Gillette blades, HP has created demand for an ancillary product.

Selling one product that creates demand for another is an interesting and frequently used downstream revenue opportunity. But if you choose that route, make sure you protect demand for the second product by either patenting its critical features or otherwise protecting them by branding. Protection can take various forms, such as Harley-Davidson's initiative to produce its own line of clothing, thereby bestowing exclusivity on its expanded offering.

Coming back to the HP example, if another company tried to step in and intercept the cartridge demand, HP would certainly file a lawsuit, claiming patent infringement. So once the company convinces a consumer to buy its printers, it is guaranteed an ongoing stream of cartridge revenue for the life of the printer.

The key to this strategic opportunity is the protection provided by patents. Potential competitors would shy away because the risk is high and the cost of mounting a challenge prohibitive.

Another, sometimes overlooked way of producing an ongoing revenue stream is to provide after-market service. If you choose to do so, consider building in product features that can only be serviced by your company. Carmakers have caught onto this advantage. Late-model Audis, for example, have to be returned to a dealer to reset the computerized codes that prompt the check-engine indicator to flash on.

All three examples of designing for ongoing revenue streams could do double-duty as ways to protect product position. It's not a coincidence; the second and fourth strategic opportunities on our list are frequently linked. Gillette protects its razor blades, HP protects its cartridges, and Audi protects its after-market service.

5. Develop and define new markets.

Apple has mastered this strategy. Witness the iPod, iPhone, iPad, and who knows how many other new gadgets are percolating in the minds of Steve Jobs' product design team. They aren't copying anyone. They are coming out with products no one else has thought of and creating a sensation every time. This kind of raw innovation keeps inventors way ahead of competitors.

E Ink is another example of new-market development. It came up with a novel technology, electronic ink, used in electronic books and readers (Kindle and Nook), newspapers, watches, and shelf labels that allow retailers to display product prices, discounts, and coupons on LCD screens placed around their stores. The information on the screens can be changed quickly and easily from a remote location.

It goes without saying that radical ideas must be protected by patents or trademarks or both to keep competitors from appropriating your ideas and manufacturing them more cheaply. 3M erected a protective barrier around its Post-it Notes, and Apple has an impressive track record of doing the same by protecting its incrementally innovative iterations of iPhones and iPads.

6. Design to realize a price premium.

This opportunity is mapped to both growth and profitability. If your higher-priced product sits on a shelf alongside someone else's and you get people to pay the premium, you will generate more revenue and more profit per sale, because the production cost and the price are probably not tightly correlated with each other.

You can realize that price premium in various ways, not all of them overly expensive. For instance, you might combine performance features with aesthetics, such as embossing a logo on the back of a car seat. Toyota captures value with its Lexus brand. A car carrying a Lexus nameplate is more profitable to the company than a similar vehicle with the Toyota brand, and, on a per-vehicle basis, the Lexus also generates more revenue. Of course, Lexus must add in some luxurious features – wooden steering wheels, leather seats, more chrome, and less plastic – to justify the higher price.

High prices are frequently used as a branding strategy, and Harley-Davidson motorcycles are a perfect example. They cost $20,000 to $30,000 each, while a Kawasaki is half that much. But people are willing to pay the higher price because they want the prestige of owning a Harley. Any time you see high-end and low-end brands, this phenomenon surfaces, because one manufacturer is using a counter-strategy by lowering the product cost.

7. Lower product cost.

This is nearly the opposite of the previous value opportunity. Companies pursuing this strategy reduce their direct product costs by cutting expensive items that drive up material and manufacturing expenses.

The makers of low-end automobiles do it with less expensive labor and the removal of unnecessary features. They build stripped-down cars with fewer and less-durable components – no navigation or high-quality sound systems, for instance. A simple hand crank makes the windows go up and down, and there are no remote controls to lock and unlock the doors. It's what I call de-featuring.

8. Lower lifecycle costs.

Reducing the cost of products with a long lifespan by improving productivity in functional areas such as design, manufacturing, marketing, and service can cut two ways. The savings can be paid to the producer or passed through to the consumer.

This value opportunity can reduce lifecycle cost for the manufacturer by building in more reliability. If a product is under warranty or covered by a service contract, for example, you will want to make sure those products rarely fail or require service. Higher quality components should translate into less time and manpower spent fixing problems, thus reducing lifecycle costs for the producer.

On the consumer side of that opportunity, Xerox is currently promoting its inkjet printers as the less expensive alternative to HP's products, claiming that, over the long haul, Xerox's ink cartridges cost less than HP's. Basically, Xerox is saying that even though HP's purchase cost seems attractive, the lifecycle costs will eat up the customer's savings and more.

Xerox isn't saying how it cut its printers' ink consumption, but it's a great marketing angle, nonetheless. By choosing to pass on to consumers the value of its lifecycle cost reduction, it has created greater incentive for customers to buy its product.

9. Improve asset utilization.

An expensive piece of equipment that performs only one function can be made more cost effective if you can design additional products that need that function. But the common denominator is not always apparent at first glance, as the Lifetime Products' saga demonstrates.

Lifetime started out making basketball hoops attached to plastic bases. The product was successful, but the company wanted to expand. Its leaders determined that it was good at two things – working with slitted-roll steel used for tubing and making blow-molded plastic products. But it turned out that expensive, specialized manufacturing equipment was needed.

Capitalizing on that information, Lifetime branched out from basketball hoops to folding picnic and banquet tables, which have tubular steel legs and blow-molded plastic tops. You may have seen these popular folding tables at use in airport security check-in lines. Today, Lifetime makes numerous products that depend on that combination of technology and underlying assets.

As you consider the opportunities and company examples, you may have noticed that most companies can mine more than one opportunity. Harley-Davidson, for example, has a firm grasp on growing market share with customer-focused products, but it has also taken advantage of number six, designing to realize a price premium, and its apparel business allows it to design for ongoing revenue streams.

Audi (and other car makers, too) designs for ongoing revenue streams by making its computerized engine codes accessible only by Audi dealers. Its aftermarket service provides recurring income, and the computerization example also works to protect product position. And the Lexus example mentioned alongside value opportunity number six, design to realize a price premium, also fits into the ninth category, improved asset utilization.

Toyota's re-leveraging of the Camry platform to produce the premium-priced Lexus improves asset utilization, the ninth opportunity, and that, in turn, lowers production costs. Similarly, the Lifetime example, improve asset utilization, could also be cited for lower product cost, because Lifetime's reuse of assets makes its products less expensive.

Saying you've determined your strategy means you've decided on a unique combination of activities you are going to do differently than anyone else. But if you are trying to do everything, your combination is probably impractical to carry out because your value opportunities will be in competition with one another.

Conversely, Harvard Professor Michael Porter, the well-known expert on competitive strategies and a PTC board member, says the first test of whether you have a strategy at all is a list of trade-offs – that is, things you've chosen not to do. So if you try to adopt all nine value opportunities, you will be lost without any strategy at all.

The value opportunity framework also helps leaders ascertain their organizations' strengths and weaknesses. ✿

Chapter 4

GAUGING YOUR STRENGTHS (AND WEAKNESSES)

Once you've identified the value opportuniies, you must do the hard work to make them actionable. Many companies have only an implicit strategy that has never been explicitly documented. But if you already have an explicit strategy that everyone understands, you will focus on identifying the opportunities, initiatives, processes, and capabilities – the best practices – that will animate that strategy.

Imagine a scenario at a hypothetical company that is similar, let's say, to Harley-Davidson. Further say that one of its key initiatives is "improving aesthetic appeal," by which we mean the look and feel of its motorcycles. The brand is, to a great extent, rooted in aesthetic appeal. By linking that initiative with the most important corresponding business processes and the most essential related capabilities, the company's team could create a clearly delineated map showing how to effectively strengthen its brand among current users.

To get a firmer grasp on the problems involved, let's suppose that I have decided to talk about change management with a company executive, a manager, and an end user. With the executive I would discuss the company's strategy for selling after-market add-ons, pointing out that the motorcycle maker's difficulty managing the change-management process is wreaking havoc at the retail level. It keeps changing its product mix, leaving its after-market add-ons to sit on store shelves. No one has yet spread the message that the various products aren't compatible. For example, someone may have changed the logo on one of the bike models without telling the people who make the apparel and collectibles. So now the logo on the shirts doesn't match the logo on the bike.

Turning to the manager, I would emphasize that revenue growth and market share are at risk because the change-management process is broken. The company's brand-building initiative is apt to fail unless the manufacturer and its partners rally around a standardized, automated way of closing the loop, implementing cross-discipline change management and making sure that all its vital processes and capabilities are in place and operating properly.

For the individual contributor who receives outdated, time-wasting information, we would work to get him or her a standardized, automated method for receiving change directions. To help justify the cost, we would take his or her complaints upstream, pointing out that when people can make changes without going through a notification process and without understanding the impact of the change, both the brand-building capability and the ability to sell add-ons are at risk.

When we engage clients with the Value Roadmap, we devise solutions and help justify them to management. At the management level, we explain that the executives' cherished high-level concepts will never see the light of day if they don't implement process and technological changes. It may involve a bit of persuasion, but it's necessary and it works.

Change and configuration management is always important and it typically demands the most attention. But in recent times, concern about the lack of quality and product reliability has gained more attention. The once wholly reliable Toyota brand, for instance, hit a rough road in 2010, most of it related to the infamous floor-mat/gas-pedal entrapment issue. But even its Lexus nameplate suffered recalls related to leaking brake fluid, defective valve springs, and steering shaft problems.

What it all comes down to for Toyota or any other company that has spent years nurturing its reputation is simply this: Designs have a certain degree of inherent quality or lack thereof. It's not unusual to see a complex design fail. So in assessing quality, we have to ask what could go wrong with a specific design, how likely is it that problems will appear, and what will be the consequences if the design does fail. Does the design need minor adjustments to head off problems? A manufacturer should certainly validate a design before moving into large-scale production.

Process quality is separate from design quality, but it's equally important. If, for example, you are planning to make thousands of copies of a product design, you will want to make sure your manufacturing process will play out the same way every time. No untested parts or new ways of doing things can be allowed into the process, because the process must be both efficient and highly predictable.

DESTINATION: SUCCESS

So how good are you at responding to problems, closing the loops, updating designs, replacing parts if necessary, and chasing down problems before they spiral out of control? It's all part of quality management in the world of product development.

If people took a good look at their as-is development process, most of them would probably say they need to do better. That is why we created the Value Roadmap. But it covers 24 processes, and you can't change that many processes all at once. It would be too disruptive. So the journey from ugly reality to something better must be prioritized and broken into phases.

If producing low-cost products is the centerpiece of your strategy, you won't begin by undertaking initiatives related to quality, because quality is not the highest priority in your product segment. Instead, you may want to adopt de-featuring – substituting less expensive components for pricey ones that drive up material and manufacturing expenses.

But as those companies that have already made the journey can attest, moving away from your as-is product development process to capture your to-be state will not come without pain and effort. You will have to figure out both your as-is and your to-be, and how much value will be created if you decide to switch. It will be up to you to determine if the greater value attained will outweigh all of your costs, both monetary – for software, outside services, retraining, and so forth – and the psychic cost of internal change management and the disruption to your operations. If the value to be created outweighs the cost of change, then do it. If not, don't.
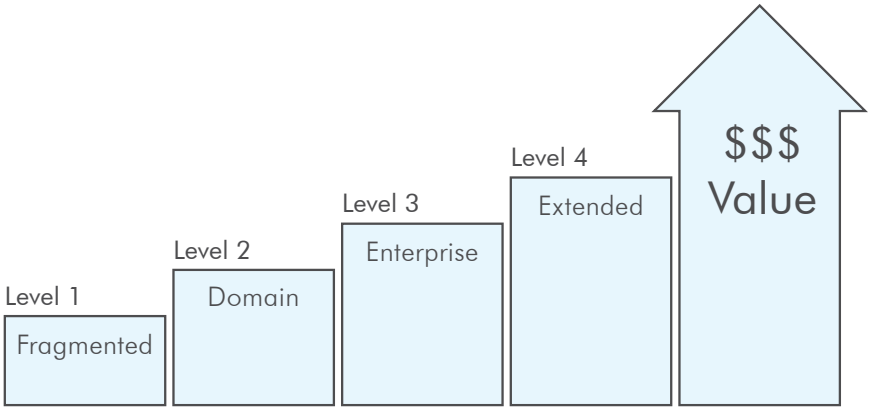
Figure 5: As a company's process capability matures, it creates more value for the organization.

Why engage in the value discussion in the first place? If you accept the premise that you go to work each day to create not just revenue but value or profit, then you will absolutely want to deliver that value because that's why the company is investing in you. At its highest level, your company exists to create value.

In the heat of day-to-day competition, you may think you don't have the time to answer the value question. Sure it will take you some time to figure out a baseline from which you can accurately compute the benefits of your to-be state, but the Value Roadmap is structured so as to lead you step by step. In fact, the approach can deliver value incrementally.

Some of our public-company clients start with their stock price, the market's day-to-day gauge of their value. But no matter how you compute your company's value, if you choose to pursue your to-be state of product development, you must be prepared to devote a significant amount of time to it. In fact, you may have to wait one to two years before you feel totally confident with the choice you have made. But we can promise that once you've settled into the process change, you will never look back.

Visit the PTC Value Roadmap page for more information. ⚙
PTC.com/solutions/value-roadmap

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Jim Heppelmann is president and chief executive officer of PTC, a leading maker of software that helps 27,000 corporate clients manage their product development processes. He has worked in the information technology industry since 1985, developing and deploying large-scale information systems.

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