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Case Studies in How Organizations Become More Mature

We were recently asked to describe some organizations that were at various levels of maturity and how they sought to become more mature.

Case studies are difficult to uncover for a variety of reasons. Many organizations prefer not to disclose their successes. Some organizations are too busy to document their successes. Senior managers are rewarded for obtaining results—not for writing up case studies. Vendors often work with clients to create "case studies" but these are typically half page write-ups that focus on the software tool and not on the details of the case study. And, finally, companies don't necessarily agree on what process improvement is. Frequently, we see case studies focused on a particular technique, like analytics, or a specific methodology, like Lean, that could easily have been written about as a process change case study.

Occasionally, however, an individual wants to tell a story and gives a talk at a conference or writes a book with detailed information about practices at an organization. Every so often the business news media gets excited by the results a company is obtaining and sends in mainstream reporters who manage to develop detailed information about an organization's success. Those of us who are trying to understand the development of Business Process Management live for those occurrences. Even when a burst of transparency occurs, however, readers need to be aware that organizations often don't follow through to sustain the new process. A company will make major progress for several years and then a new CEO will arrive and shift priorities or reclassify the effort to emphasize something else.

Process Maturity

Before looking at specific case studies, let's pause and recall the structure of the CMM approach to maturity. The basic model postulates a series of steps that begin with organizations with no defined processes and no process discipline, and then describes how organizations tend to move through a series of steps as they acquire more knowledge of their processes and use them to manage their work. The CMM model defines the evolution of an organization's maturity in five Levels. The CMM overview is pictured in Figure 1 below.

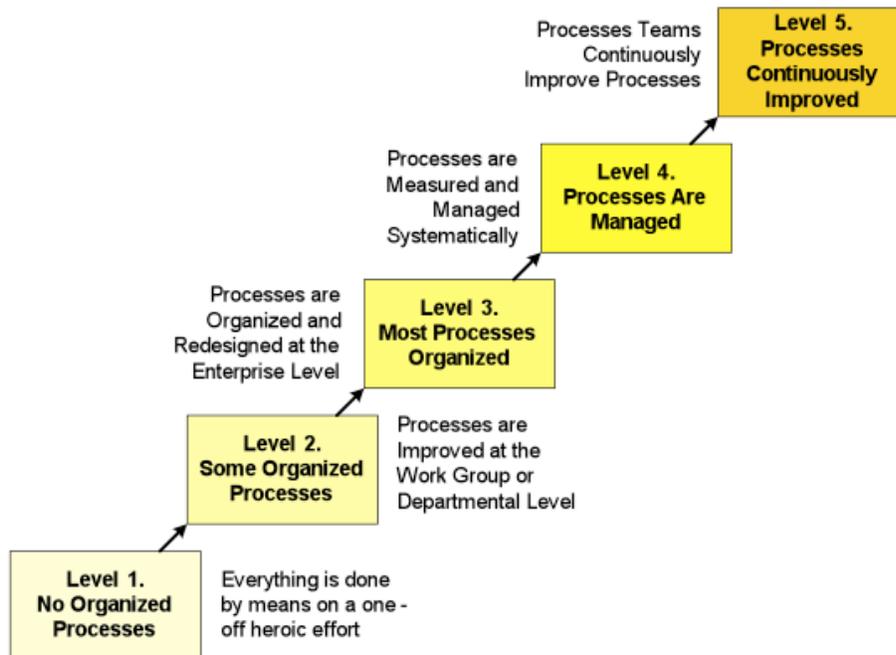


Figure 1. The Capability Maturity Model as Defined by SEI and Carnegie Mellon University.

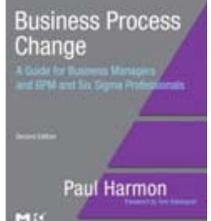
Level 1. Initial The process is characterized by an ad hoc set of activities. The process isn't defined and success depends on individual efforts and heroics.

Level 2. Repeatable At this level, basic project management processes are established to track costs, to schedule and define functionality, and the discipline is made available to use on



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similar projects in the future.

Level 3. Defined The process is documented for both management and engineering activities, and standards are defined. All projects use an approved, tailored version of the organization's standard approach to developing and maintaining software.

Level 4. Managed Detailed measures of the software process and product quality are collected. Both the software process and products are quantitatively understood and controlled.

Level 5. Optimizing Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

Obviously, the CMM approach was very much in the spirit of the quality control tradition, and assumes that maturity is a property of how well the managers at an organization know and use process concepts.

Nine Case Studies

We have briefly described nine case studies below. These are case studies we have heard described at conferences and we have discussed them with those who were directly involved. We don't have as much information as we would like to have, but we feel we know enough to describe the cases in some detail. In essence, each one began at a particular CMM level and then worked to achieve at least one level higher.

1. Air Products (now AP)

Major supplier of chemical gasses

Time Frame: 2000-2006

Driver: Need to standardize common processes throughout all divisions to support move to a single instance of ERP.

Effort: Created corporate process architecture, relying initially on SCOR. Pulled all managers from all divisions responsible for process together to create standard versions of each major subprocess. Defined metrics as they defined common processes. Assigned a Division Manager to be responsible for each major process area, with an assistant to focus on process. Classes for all managers in how to read process diagrams which were made available online. Had SAP/IT manager for each process on redesign team. Put ERP installation on hold while they undertook process work. BPM CoE already existed but went from a few members to over 100 employees in the course of the project.

CMM: Before-After: Company began as CMM 2+ and ended as CMM 4. The emphasis was on developing a business architecture in order to standardize processes throughout the organization.

Benefits Reported: Reduced 1000 instances of ERP to a few and began reporting on common processes throughout the organization.

Tools/Methods: SCOR framework, initial Visio diagrams developed by redesign teams were transcribed to ARIS diagrams by BPM analysts.

2. Arizona Public Utilities

State Utility Company

Time Frame: 2005-2009

Driver: Initial process work began when fire left 400,000 customers without power.

Effort: Improved several processes before considering business architecture. Started bottom-up modeling specific processes. Then, borrowed another utilities' architecture which they modified. Has BPM CoE

CMM: Before-After: Began as Level 2 organization doing specific processes. Borrowed architecture with processes and metrics and extended it to end as a CMM Level 4 organization.

Benefits: Feel they understand their processes much better now and can recover much faster from future disaster.

Tools/Methods: Borrowed and extended another utilities' process architecture.

3. Boeing, Global Mobility Systems

Division that Manufactures the C-17 Aircraft for military.

Time Frame: 1993-1998

Driver: US Air Force threatened to cancel contract for time and cost overruns.

Effort: All processes in GMS modeled and replaced functional units. All processes have specific measures aligned with ultimate goal—production of C-17 aircraft. All line managers are process managers and report up process hierarchy. Employee teams organized for each basic activity and supervisors work with teams to achieve metrics. Support processes are managed by Boeing Corp IT and HR groups. Very strong BPM CoE group that reports performance directly to Division head. Used Baldrige Award as incentive to rally division and chart progress.

CMM: Before-After: Went from CMM 2 to CMM 5 (Certified by SEI). All Boeing is considering shifting to GMS model.

Benefits: Went from failing organization to best in industry.

Tools/Methods: Created internally or borrowed from Baldrige standards.

4. Cosmote

Leading TeleCom Operator in SE Europe

Time Frame: 2007-2009

Driver: Standardize process efforts to support organization-wide optimization effort. Then shifted and used standard processes to evaluate several acquisitions, one after another.

Effort: Began by modeling their own processes to establish metrics for internal evaluation. Selected eTOM as a general framework/ methodology. Rapidly characterized all processes in organization, using top-down approach. eTOM model goes down 2 levels; BPM group drove down 3 more levels. Defined measures. Assigned process managers. Information on processes available to managers and employees on web. Identified Risks (SOX), aligned major IT systems. Had a BPM CoE (located in IT) at beginning of effort. As company acquired other companies, the team modeled each new company's existing processes to decide what to keep or change. As a result of doing architecture CoE team identified quick wins, defined merger plans, and identified opportunities for major improvement.

CMM: Before-After: Cosmote began as CMM 2 organization and evolved to a CMM 4 organization.

Benefits: Improved internal operations. Successfully managed a number of acquisitions in very efficient manner.

Tools/Methods: eTOM framework, ARIS modeling tool.

5. Denmark Local Governments (LGDK)

Agency jointly created by federal and local governments to coordinate efforts to make local governments more efficient and effective

Time Frame: 2006-2009

Driver: Need to make municipal governments more efficient and effective.

Effort: LGDK identified and then defined 180 core processes and 20 generic processes that local governments were required to use to implement Danish laws. Danish Government decided to create business process architecture for all 98 Danish Municipalities. Initially created general processes, then generic subprocesses, down to level 5. Developed ideal (To-Be) versions of each. Trained 2000 consultants to help local governments use processes. Processes are aligned with software services.

CMM: Before-After: Created repository of 100 generic subprocesses that can be assembled into core processes by specific government units. In essence, all Denmark local governments evolved from CMM 2 organizations to Level 3 or 4 organizations, depending on how thoroughly they implemented the program.

6. Royal Pharmaceutical Society of Great Britain

Agency responsible for policing complaints against UK pharmacists.

Time Frame: 2006-2009

Driver: Need to reorganize how work is done to make the organization more efficient.

Effort: Developed overview and then defined each process. Leading KPI was backlog: They wanted every case resolved in 6 months.

CMM: Before-After: RPS went from CMM Level 2 to Level 3 and are working on Level 4

Benefits: Backlog eliminated. All cases now resolved in under 6 months.

7. Shell

A major international oil company

Time Frame: 2005-2008

Driver: Need to standardize common processes throughout the world.

Effort: Developed organization-wide overview and then drilled down in one process area and looked for generic processes. Identified metrics for each generic process. Initially allowed each regional group to do process its own way and just compared results. Once data was in hand, selected best approach and standardized. KPIs used as measurements. Installed extensive process management system. Standard training. Standard software chosen. BPM CoE in place and active.

CMM: Before-After: Shell went from CMM Level 3 to Level 4+.

Benefits: Major generic processes are now standard throughout world.

8. Swedish Armed Forces

Time Frame: 2008-2009

Driver: Need to reorganize Swedish Armed Forces to better support new missions—specifically growing number of UN peacekeeping missions and to support an ERP effort.

Effort: Swedish Military required its SAP implementation consultants to create a business process architecture prior to proceeding with ERP installation. Created organization diagram for Swedish military, identified value chains and then drilled down to L1 and L2 processes. Performance measures were established. Processes were aligned with ERP systems. Consultants relied heavily on SCOR and ARIS.

CMM: Before-After: Military moved from Level 2 to Level 3 organization.

Benefits: Swedish military now knows and measures all major processes in ways it couldn't before this effort.

Tools/Methods: ARIS, SAP

9. University Of California at San Diego: Auxiliary & Plant Services

Maintenance Services Group at UCSD.

Time Frame: 2007-2008

Driver: Need to make A&PS more customer and process oriented.

Effort: Sought to improve Auxiliary processes. Defined intent and then a process architecture. Drilled down in each process area to identify problems. Defined KPIs from intent and used balanced scorecard to define for each process. Created a BPM CoE in A&PS.

CMM: Before-After: Went from Level 2 to Level 4 organization.

Benefits: Marked improvement in customer orientation. Won OMG Process Award for effort.

Tools/Methods: BPTrends Architecture Methodology

As we have noted elsewhere, a process focus, like any good management approach, is a journey, not an end. We have described what happened at organizations during a time period in which we studied them. Some have probably moved forward. Others may have regressed. Getting to a given level of maturity only pays dividends while the organization continues its process focus. We have not addressed maturity maintenance in this Advisor.

Notice that we have not mentioned Toyota in our list. **Toyota** is the most commonly cited example of a CMM Level 5 organization. Unfortunately, it is hard to generalize from Toyota. Toyota was probably a Level 2 organization sometime before World War II, when it first began its drive to create a modern auto company. Since the Toyota story has been publicized, however, it has been a Level 5 organization. There are lots of stories about what Toyota does today, but few about how it started and matured.

Similarly, there are a number of other companies that are famous for having divisions that are Level 5 organizations. **IBM, HP**, and several Indian software groups, for example, have such divisions. In these cases, however, like Toyota, we know about the mature divisions, but don't know anything about the efforts they made to get there.

Notice, too, that we didn't mention organizations that are simply working at Level 2. We get lots of calls from organizations that are working at the departmental level and are trying to improve a sales process, or trying to develop a new procurement process, or even a process to identify qualified suppliers. After a brief discussion, it becomes clear that the organization is a Level 2 organization. The organization, as a whole, isn't focused on process redesign, but the particular department or group is very interested in improving a single process. In some cases, they are very new to process work, and in other cases they have been doing process work for 2-3 years. In both cases, however, they are focused on a single project and have the concerns that any organization has when they seek to redesign a single business process. This isn't to downplay the importance of process redesign work at Level 2 organizations. This is, after all, the kind of process work that most organizations are doing. But it doesn't provide too much information about how organization's improve their process maturity. It simply provides information about one specific level of maturity.

Some Conclusions

The organizations we described in this Advisor vary in terms of size and industry and goals. Similarly, they vary greatly in terms of approach. Some invent their own approaches and software, others use standard tools and still others rely on specific methodologies or business process frameworks.

Figure 2 illustrates the results the organizations achieved and suggests how long each journey took. All began as CMM Level 2 organizations—they had some departmental processes defined and went on to describe processes throughout the organization thereby creating a business process architecture. Most also developed a process measurement system so they could track process results. Some stopped there while others pressed on to establish management policies that would support the use of process metrics in the day-to-day management of the organization. Size didn't seem to make much difference. Some large organizations moved fast and others moved relatively slower, and vice versa. Similarly whether the organization in question was a for-profit or a governmental agency didn't seem to make much difference.

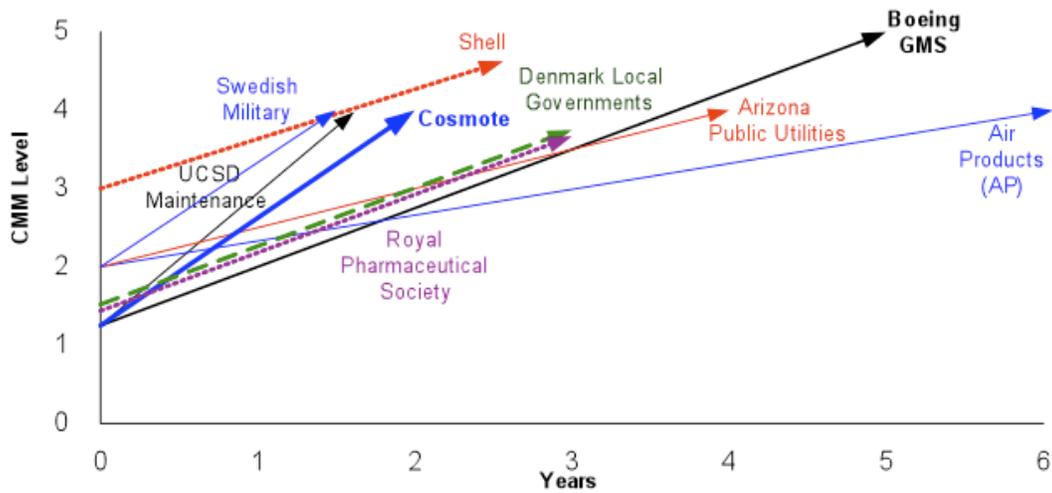


Figure 2. Some Timelines for Various Projects.

As a generalization, although obviously based on a very small sample, organizations that were focused on moving from CMM Level 2 to CMM Level 4 managed to accomplish the transition in about one to three years. In passing, it is worth remembering that Boeing completely transformed the organization of the division, and AP brought people from throughout the world to develop common processes in special sessions, and both took time.

I don't know if this Advisor really answers the question as it was originally stated. It does provide information about the CMM levels of eight organizations, and does suggest that most organizations start at CMM level 2. It also suggests that all types of organizations can transition from Level 2 to Level 4 in a reasonably short time if they are willing to make a major effort, and it suggests some of the benefits that accrue for those that make the effort.

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If any readers can provide pointers to documentation for other case studies that illustrate the transition, we'd certainly appreciate it.

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