

Honeywell FM&T

# Program Management Maturity Model

*Development and Implementation of a  
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### **Introduction**

In 2006, Honeywell Federal Manufacturing & Technologies (FM&T) announced an updated vision statement for the organization. The vision is “To be the most admired team within the NNSA [National Nuclear Security Administration] for our relentless drive to convert ideas into the highest quality products and services for National Security by applying the right technology, outstanding program management and best commercial practices.” The challenge to provide outstanding program management was taken up by the Program Management division and the Program Integration Office (PIO) of the company. This article describes how Honeywell developed and deployed a program management maturity model to drive toward excellence.

Honeywell FM&T is the prime contractor for the National Nuclear Security Administration’s, Kansas City Plant (KCP). Honeywell is responsible for the management and operation of NNSA's facility and is assigned the mission of providing nonnuclear components for the US nuclear weapons complex. Honeywell and its' predecessors, Bendix and AlliedSignal, have managed the KCP since 1949. The plant provides approximately 85% of all components and assemblies for nuclear weapons and has supported every nuclear weapon program since 1949.

For most of the plant's history, managing weapon programs involved working with the nation's national laboratories to obtain weapon systems designs, managing the supply chain for custom parts and raw materials, and executing the required manufacturing processes. All of this was done with detailed plans and a focus on executing the work and delivering high quality products, on schedule. Government funding for the work was typically provided in a lump sum generally sufficient to perform the work requested. The scope of work to be performed was constantly changing, and funding was moved around as needed. Spending controls were in place primarily to ensure that the total budget was not exceeded.

As the cold war ended, the nuclear weapons complex saw its workload and funding drop dramatically. Congressional control over specific weapon program budgets increased, and funding began to be authorized by weapon system. Reporting requirements increased. Suddenly, Honeywell’s program management and financial management processes were strained to support the detail reporting requirements and increasing program scrutiny.

It was in this context that the vision for program management excellence was announced. The Program Management division decided to utilize a maturity model to define and pursue excellence. Program management maturity goes hand-in-hand with performance results and customer satisfaction. Program management is of even heightened importance to Honeywell, given the make-up of the enterprise in which it operates. The company must work

collaboratively with both federal entities and other contractors to successfully achieve its mission. In this environment, disciplines such as risk management and communications management take on vital significance.

This article discusses the strategic value and uses of a maturity model, the tactics employed to develop the maturity model, and implementation lessons-learned.

## Strategic and Tactical Value

Why create a program management maturity model? The answer is to provide a plan and framework for achieving excellence in program management. The maturity model fills both strategic and tactical value. It can be used strategically to set goals and evaluate priorities. It can be used tactically to guide and organize improvement efforts, and communicate results.

The Honeywell program management maturity model was developed with the following goals:

- Communicate goals, identify gaps, and demonstrate maturity
- Identify actions/steps for organization improvement
- Serve as communication tool

Furthermore, the maturity model must be accompanied by an assessment protocol, which included the following goals:

- Credibility
- Repeatability
- Accountability of business segment leaders

Tactically, the maturity model was developed by a cross-functional team of subject matter experts from within program management and the PIO. Before beginning the team collaboration, a literature search and benchmarking analysis were done. The results of that analysis showed some common features of project management maturity models, which could be incorporated into the Honeywell version. However, program management leadership at Honeywell wanted to tailor the application and specifics to the enterprise model at this facility. Further, they wanted the development of the maturity model to serve as a process for setting priorities and communicating goals.

Accordingly, a team was chartered in May of 2007 and provided with the above goals, as well as the results of maturity model benchmarking. The team first established the major “axes” of the maturity model: the levels of maturity, and the major processes of program management. These were validated with organizational leaders. The results are shown in Table 1.

Five levels of maturity were chosen for use in the KCP model, consistent with other industry models. Five levels were judged to be a sufficient number for providing separation, but not so many as to create difficulties in distinguishing between the levels. To identify the key program management processes, a list of high-level KCP program management processes was developed. Using the PMBOK as a guide, the KCP key processes were grouped and summarized. Six major process areas were determined to be appropriate for use in the model.

Next, the team “filled in” the model by describing what a given maturity level involved for each process area. This resulted in a matrix of 30 cells: five maturity levels described for each of six different process areas.

## The Maturity Model

The Honeywell Program Management maturity model includes five levels of maturity and six process areas. The maturity levels are:

- **Level 1: Crisis Management (Isolated)** The organization recognizes a need for project management knowledge and processes, but is just starting to determine what project management involves. Senior management strategy for project and program management is lacking. The efforts around project management are functionally isolated, as each person and organization attempts to perform project management their own way. Project management data are not consistently collected or analyzed.
- **Level 2: Reactive Management (Initial Processes)** Informal PM processes are defined, and a common language around project and program management has been created and implemented. A process framework has been constructed for project management, and some processes have been created. Senior Management has communicated a strategy as to goals and directions for project management. Functional isolation is still prevalent, with each organization formulating its own approach. Project management data needs have been identified, but data are obtained informally.
- **Level 3: Project Management (Organizational Standards)** Formal project planning and control systems are managed. The organization has systematic and structured project planning and control for the individual project. Project management processes are implemented and executed, and are being integrated into a cohesive approach. Senior management has engaged the process, and is integrated as appropriate for project management decision-making and execution. Cross-organization interfaces and processes have been defined. Project management data are defined with formal methods of generating and communicating data.
- **Level 4: Program Management (Integrated)** Project management data and processes are integrated. Business decisions are made at the program or portfolio level, not just at the individual project level. The organization is planning and controlling multiple projects in a coordinated manner. Data regarding the project and program management processes are quantitatively analyzed, measured, and stored. Project and program management ideas are integrated into business processes, so project management is part of organizational culture. The Program Management organization ensures that classical PM best practices are consistently embodied in business practices. Integration across organizations has occurred. Program management data are used proactively to support future planning and analysis.
- **Level 5: Managing Excellence (Continuous Improvement)** Program management processes are fully understood and are continuously improved. The organization is project-driven, dynamic, and adaptable. ("Dynamic" means responsive to changing programs and to continuous improvement efforts. "Adaptable" means processes can be applied across a changing

business environment.) Lessons learned are captured and addressed on an ongoing basis. Senior management is engaged in ensuring that continuous improvement activities receive priority and resources, and that business practices continue to evolve with optimized processes. Organizations work collaboratively to develop and implement improvements. Program management data are optimized and sustained.

The six process areas are:

- **Scope Management:** Program Formulation & Scope Management encompasses the work to formulate, document, baseline, and manage the scope of a program. Specific tools and/or processes in this category include program and project charters, work breakdown structures, customer authorization documents, program scope documents, baseline creation, and a change management process.
- **Budget and Cost Management:** Program Cost & Budget Management encompasses the work to forecast and develop the budget and cost profiles for the out-year and near-term or current program work as well as the monitoring and management of these items. Specific tools and/or processes in this category would include budget planning, cost and resource forecasting, program plans, actual performance analysis, and earned value measurement.
- **Risk Management:** Program Risk Management encompasses the work to identify potential problems before they occur so that risk-handling activities can be planned and invoked as needed across the life of the project to mitigate adverse impacts on achieving successful completion.
- **Communication Management:** Communication Management encompasses the work to develop, implement, and manage communications for a project or program. The specific processes in this category would include generation, collection, distribution, storage, retrieval and ultimate disposition of program information.
- **Resource Management:** Program Resource Management encompasses the work to plan for and manage the resources needed to perform a program. The specific tools and/or processes in this category would include production forecasting and project forecasting. This includes both the labor and material requirements to support project and program needs.
- **Schedule Management:** Program Schedule Management encompasses the work to develop and maintain a program schedule. Specific processes include order management, production management, and the baseline management process.

The result of the maturity model was essentially the process and organizational framework for program management. Although at the time the level of maturity was not yet known, the maturity model codified what program management excellence encompassed and cast a vision for future potential.

## Implementation and Lessons Learned

The program management maturity model was utilized to assess the organization in November and December of 2007. The goal was to establish a baseline maturity level, so that plans could be made going forward. In the six months during which the maturity model was being developed, improvement efforts had already been undertaken. Most significantly, a separate PIO organization was created, and an organizational risk management process had been developed.

Therefore, when the baseline assessment was performed, the organization had already undergone multiple significant changes.

The assessment approach consisted of a few key elements:

- Maturity levels would be determined by business segment (the Kansas City operations of Honeywell included three main business segments for maturity assessment).
- Maturity levels would also be determined by program management process area within each business segment.
- Assessment would be obtained by having organization staff fill out questionnaires to indicate the extent and consistency of processes, tools, management engagement and data outputs for the areas and segments in which they are involved.
- Wherever a level 4 or 5 maturity was obtained, that finding must be verified by partner organizations. Since level 4 is about integration and collaboration, the Program Management division cannot credibly claim that level or higher without buy-in.

The assessment resulted in a credible baseline maturity level, by both business segment and process area. The initial assessment result was reviewed by the maturity model team and other senior leaders within the organization. The result was considered to be reasonable and credible given the state of current processes. The initial assessment identified differentiation between processes that had been in place for several years and had been positively evaluated by third party assessors, and newly developed and less stable processes. In one area, maturity was rated at level 4, which indicated integration with other organizations. Accordingly, for that level 4 rating, the Program Management division conducted a validation review with Engineering, Supply Chain, and Finance organizations.

While the ultimate goal of a maturity baseline was achieved, the exercise yielded multiple lessons-learned. The language, which was purposefully generic and standardized, confused some of the staff, which may have affected their answers and scores. The questionnaire approach yielded results that were a collection of individual, subjective evaluations, which did not document evidence of organizational maturity, or capture the processes being used.

## Roadmap to Organizational Improvements

Both the maturity level results, and the lessons-learned from the assessment process, were used to drive organizational improvements in 2008. First, the Program Management leadership established desired maturity goals, both in process areas and by business segment. Next, the maturity model team created objective evidence that would be used to demonstrate maturity at each level and for each process area.

The objective evidence approach was based upon the idea that organizational maturity should be reflected by process attributes and outputs. In other words, the organization should be able to assemble a “case” that demonstrates and documents maturity. The maturity model team then began to document evidence statements appropriate for each maturity level. This evidence was stated generically, but each business segment could tailor the language and implementation. As an example; the questionnaire approach asked whether communication management was documented and performed consistently. The objective evidence approach required that communication management plans could be shown for the organization, and that they had a set of specific attributes such as roles and responsibilities definition, information which must be communicated, between whom, and frequency of communication.

Teams were then chartered within the organization, with business segment leaders accountable to ensure that process improvements for each process area were integrated for their business. Each team worked to implement improvements that could be demonstrated at the end of the year.

The 2008 assessment will be conducted in a matter of weeks. The organization expects to meet its maturity goals, and is compiling evidence of maturity. Next on the horizon is expansion of the maturity model into other Honeywell business segments, as well as organizing the processes created into a guide for training and communication purposes. Costs and benefits of further maturity benefits must be weighed, and priorities and goals for the coming year established. Although the 2009 specifics are still unclear, it is clear that the program management maturity model has proved a highly useful tool, both strategically and tactically to drive excellence in program management.

	Level 1	Level 2	Level 3	Level 4	Level 5
	Isolated	Initial Processes	Organizational Standards - Project Management	Integrated - Program Management	Continuous Improvement
Levels of Project Management Maturity	<p>No project management (PM) processes or practices are consistently available. There is a recognized need for project management knowledge and processes, but the organization is just starting to determine what project management means.</p> <p>Lack of senior management strategy for project and program management.</p> <p>The efforts around project management are functionally isolated. There is not an integrated approach at this point, as each person and organization attempts to perform project management their own way.</p> <p>No PM data are consistently collected or analyzed.</p>	<p>Informal PM processes are defined. A common language around project and program management has been created and implemented. The basic PM Body of Knowledge (PMBOK) process framework has been recognized, as to what processes are needed for project management. Some processes have been created for the PMBOK process framework.</p> <p>Senior Management has communicated a strategy as to goals and directions for project management.</p> <p>Functional isolation is still prevalent. Each organization is formulating their own approach.</p> <p>PM Data needs identified, but with informal methods for obtaining data.</p> <p>Detailed and specific PM training performed to support process development, implementation.</p>	<p>Formal project planning and control systems are managed. There is systemic and structured project planning and control for the individual project. PMBOK processes are implemented and executed, and processes are being integrated into a cohesive approach to project management.</p> <p>Senior management has engaged the process to become part of the project management process. They are integrated in the process as appropriate for project management decision-making and execution.</p> <p>Cross-organization interfaces and processes have been defined.</p> <p>PM Data needs identified with formal methods of generating and communicating data.</p>	<p>Project management data and processes are integrated. Business decisions are made at the program or portfolio level, not just at the individual project level. The organization is planning and controlling multiple projects in a professional manner. Data regarding the project and program management processes are quantitatively analyzed, measured, and stored.</p> <p>Project and program management ideas are integrated into business processes, so project management is part of organizational culture. The PM organization ensures that classical PM best practices are consistently embodied in business practices.</p> <p>Integration across organizations has occurred.</p> <p>PM Data analyzed and decisions made based upon that data. PM Data used proactively to support future planning and analysis.</p>	<p>PM processes are fully understood and are continuously improved. The organization is project-driven, dynamic, and adaptable. ("Dynamic" means responsive to changing programs and to continuous improvement efforts. "Adaptable" means processes can be applied across a changing business environment.)</p> <p>Lessons learned are captured and addressed on an ongoing basis.</p> <p>Senior management is engaged in ensuring that continuous improvement activities receive priority and resources, and that business practices continue to evolve with optimized processes.</p> <p>Organizations work collaboratively to develop and implement improvements.</p> <p>PM data are optimized and sustained.</p>
Program Formulation & Scope Management	Program Formulation & Scope Management encompasses the work to formulate, document, baseline, and manage the scope of a program. Specific tools and/or processes in this category include program and project charters, work breakdown structures (WBS), coordinated program plans, Program Control Documents (PCDs) and other customer authorization documents, the Integrated Programmatic Scheduling System (IPSS), program scope documents, project task agreements, and the baseline management process.				
Program Schedule Management	Program Schedule Management encompasses the work to develop and maintain a program schedule. Specific processes include Order Management, Program/Project Planning, and Production Management. Specific tools include source guidance documents, reimbursable orders (traditional/DP related and non-traditional/non DP), project plans, the Integrated Programmatic Scheduling System (IPSS), Enterprise Resource Planning (ERP) schedules, and the baseline management process.				
Program Cost & Budget Management	Program Cost & Budget Management encompasses the work to forecast and develop the budget and cost profiles for the out-year, near-term, and/or current program work, as well as the monitoring and management of these items. Specific tool and/or processes in this category would include budget planning, resource forecasting, program plans, actual performance analysis, earned value management (EVM), and product performance index measurements.				
Program Risk Management	Program Risk Management encompasses the work to identify potential problems before they occur so that risk-handling activities can be planned and invoked as needed across the life of the project to mitigate adverse impacts on achieving successful completion.				
Program Resource Mgmt	Program Resource Management encompasses the work to plan for and manage the resources needed to perform a program. The specific tools and/or processes in this category would include production forecasting and project forecasting, ERP planning, and the baseline management process. Production forecasting includes both the labor and material requirements to support program needs. The project forecast includes labor and material for production engineering, test equipment, and tooling.				
Communication Management	Communication Management encompasses the work to develop, implement, and manage communications for a program. The specific processes in this category would include generation, collection, distribution, storage, retrieval and ultimate disposition of program information. Specific activities might include stakeholder analysis and management, communication planning, and information distribution and performance reporting.				

Table 1: Maturity Model Outline