# Innovative Development Associates

# *White Paper*

## Speeding Successful Products to Market

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# Speeding Successful Products to Market

## *Reduce Freelancing, Delays and Bottlenecks by Retooling Your Product Realization Process*

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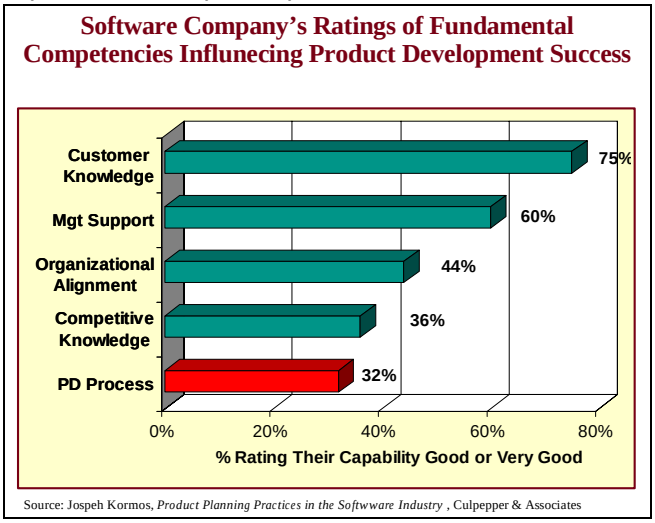
Product Realization Processes are among the weakest elements of a software company's product development capabilities. A recent survey of the product development practices of software companies found that "process" ranked lowest in effectiveness among 5 key product development competencies.




Yet many of us don't need a survey to verify this statement. Walk the halls of any software company. Few can agree on the status of a product development project. Fewer still believe schedules predicting estimated time of arrival at the next milestone.

## Advantages of an Effective Product Realization Process

A well designed product realization process can increase the flow of value to the market, shorten development cycles and reduce the time to ramp up revenues.

Well conceived processes do this by:

- focusing management attention at the appropriate time throughout the product's life - especially early when it can make a difference.
- Keeping good projects moving forward and killing losers early
- enabling new employees involved with product development and planning to get their bearings quickly and to understand their role.
- managing capacity so that resources are available when needed
- conferring status on project proposals and causing a commitment to staffing ramp up

*Figure 1*

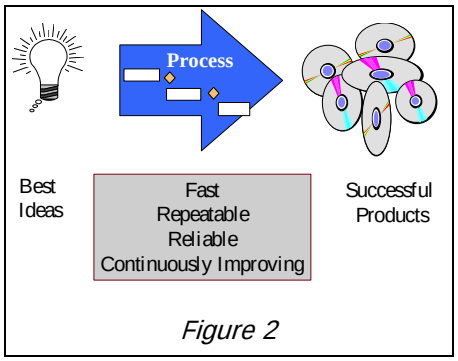



*Figure 2*

# Ten Characteristics of a Successful Product Realization Process

Building a robust product realization process that can consistently deliver these advantages requires focusing on ten specific process characteristics.

## 1. End to End

A successful Product Realization Process requires a Front End, a Middle and a Back End.

Most software companies focus only on what happens between the time clear authorization is given for a project and when it first ships to the customer - the Middle - or project execution phase. These activities - requirements, design, coding and testing - are clearly the heart of the effort but alone are not sufficient to constitute a process which can deliver products which are a business success.

A complete process incorporates all steps involved in the life cycle of a product - from it's initial germination as an idea for fulfilling a customer need, through the roll out of the product to the distribution channel, supporting customers and sales forces and beyond to a planned growth phase for improving the product and growing revenue.

Areas on the front end which tend to be omitted are :

- technology forecasting
- business case development
- idea harvesting
- product definition and market positioning
- competitive profiling

Likewise companies often forget to integrate the following back end aspects of product success into their process:

- documentation and training materials
- customer support training; customer training
- reference account development
- sales and distribution training
- launch materials and PR.
- multiple release planning

## 2. Phases and Review Points

A journey this broad needs some stopping points to review progress and to develop course corrections.

The most effective product developers subdivide their process into "phases" or "stages" with clear review points at the end of each phase.

An example of a basic phase review process with six phases and review points is shown in figure 3.

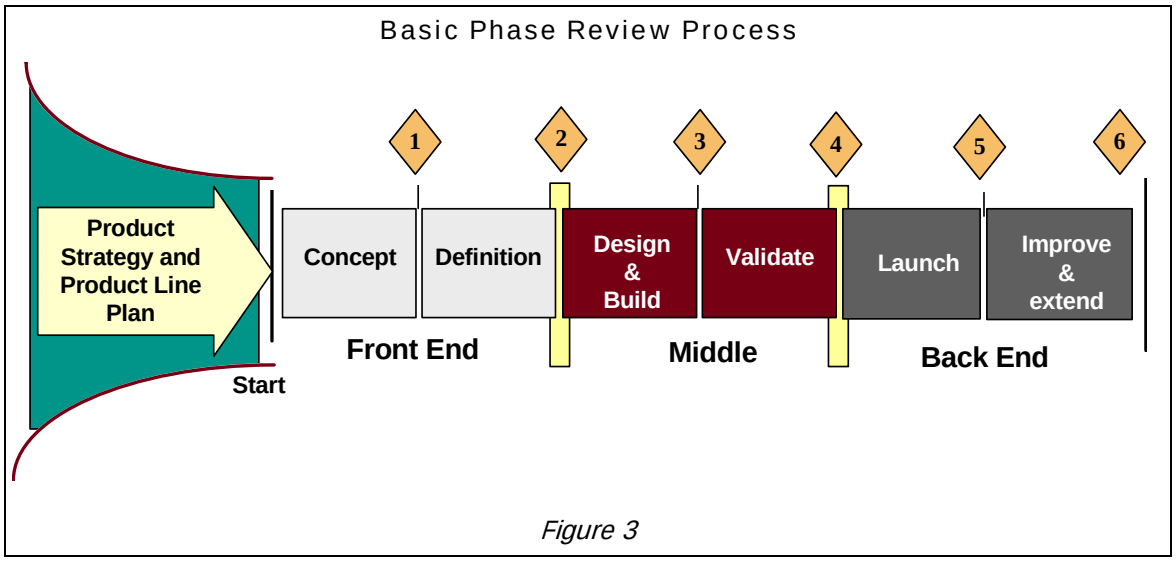



*Figure 3*

## 3. Decisions, Decision Criteria and Decision Makers

While many companies claim to have a set of defined product development phases often these phases are ignored in practice. Passing from one phase to another becomes a rubber stamp executed by low level management or the team itself. Review meetings are perfunctory evaluations of the current project lineup often focusing on technical issues only. Specific decisions are not required or made. Once a project is sanctioned it's ability to win in the marketplace is assumed.

To make sure that a phase review system has teeth, engage upper management throughout the process. This can be effectively done by establishing a team of " executive gatekeepers" representing marketing, development and customer service functions. Ideally the team should be chaired by General Management. This group reviews the status of product development projects at the conclusion of each phase and authorizes resources for the next phase.

In this system the gatekeepers (decision makers) need to – get this – *actually make decisions!* Individual product review meetings should allow only three potential outcomes: passing to the next phase; failing (killing the project) or recycling for further effort in the previous phase.

To assist the gatekeepers in performing their review function the process needs to define specific deliverables for each phase and specific concrete "exit criteria" which must be met for the product to be authorized to move to the next phase.

To engage management's insight, these criteria need to deal less with technical progress of the new product but should rather force an updated examination of the business and strategic aspects of the effort to be sure that:

- the proposed product is truly meeting customer needs
- the product's features, positioning and value proposition continues to differentiate itself against the competition.
- this development effort continues to offer a strategic and business case which is consistent with the needs of the company's product portfolio.
- plans for downstream activities - Marketing Communications, Customer Support, Training etc. have made appropriate progress and will be ready concurrent with the completion of development

## 4. In Writing

Most software companies are not enamored with cumbersome, high overhead, rigid process codification. Marketing types don't have the time or the discipline for it and developers fear a loss of freedom which a defined process can bring.

Nonetheless if you're adding new people at a regular rate, you probably need to commit something to writing. In the beginning err on the side of too little as opposed to too much codification. Select only the elements of the following which are most important to your organization. These include:

- Goals, essential activities and deliverables for each phase
- What roles do the following groups or individuals play in various phases of the cycle: President, CFO, Product or Project Management, Design/Architecture, Coding, QA, Customer Support, Training, Marketing Communications, Customers
- Exit criteria for each phase
- Sample templates for requirements documents, risk analysis and test plans.

## 5. Vernacular: Defined Terms and Progress Milestones

One of the most important reasons for having a defined process is to provide a clear definition of product's status in its life cycle and to provide a common vernacular for comparing projects. It saves a lot of time and confusion if your process includes written definitions that make it clear to the exact meaning of the following terms and progress measures:

- "authorized" or "approved"
- "feature complete"
- "QA Build"; "Engineering release" and "Prototype"
- Beta test and Field test
- Ready to Ship

## 6. Categorize PD Projects

No matter how well you initially handle the balancing act between over and under-codification you will observe that a certain portion of product development efforts just don't seem to fit the process. As a result the team ignores the process and makes it up as they go.

To reduce the portion of your projects that fall outside the standard process you will need to identify common classes of product development project types. Review your current portfolio of projects to understand the differences between each project in terms of risk, project size, duration, overall objectives and where the project falls in the product's overall customer life cycle. The following are typical categories of product development efforts in software companies:

- new products
- sustaining and maintaining existing products
- platforms and porting
- interface development
- customer specific customization
- new architectures development.

- technology exploration

As you define your project categorization system consider the following tips from successful product development organizations:

- define the types of objectives that are typical for each project type. Make sure future projects in this category fit these target objectives.
- begin to collect information about typical resource requirements and typical process bottlenecks for each project type. Use this information to estimate resources for individual projects, to size your product development pipeline and to plan process improvements.
- insist that future new products be assigned to one category. Resist projects that fall in the gaps and instead work to redefine them to fit cleanly in an existing category.
- examine success and failure rates by project type. Use this data to identify project "sweet spots" which define the types and sizes of projects which your organization does well - or not so well. Adjust your project selection process accordingly.

## 7. Customize the Process

Once you've adopted clear categories for projects, begin to customize your process to fit the needs of the most common project types.

For example, the process for a maintenance release - selecting which bugs to fix, fixing them, testing them and bundling them into a release - is different than the process for a major feature release of an existing product or a brand new product.

Each type of project will exhibit differences in how it gets approved, what phases need to be executed and to what depth.

In addition the way you manage the trade-off between schedule, features and defect reduction will vary significantly based upon a products life cycle position. When products are first being introduced the tendency is to emphasize time to market. With no installed base defect reduction and feature content can often take a lower priority.

Once a product moves into initial product acceptance and begins to "Cross the Chasm" into mainstream usage feature content is usually the highest priority. As the product matures and gains an installed base the emphasis may shift to make increase the priority of quality and defects.

## 8. Connect the Process to the Customer

The need to be "customer oriented" in developing products has become a cliché. Unfortunately as with many cliches familiarity breeds complacency. As a result product realization processes typically fall short in helping to truly create customer inspired products.

The assure a link to the customer the process needs to:

- define how customer inputs and feedback will be harvested and continuously connected to the process at each phase.
- incorporate time and resources for customer research into product development schedules.
- identify tools for collecting information on customer needs
- specify methods for organizing and prioritizing requirements.

## 9. Learn and Improve

No matter how effective your Product Realization Process becomes, each project that passes through it provides an opportunity for improvement. Likewise as your organization grows or contracts, technologies change and product lines expand the process should adapt.

To allow your process to renew itself make it a practice to capture learning from each project. A good rule is that a product development effort should not be considered complete until a cross functional post project review has been completed.

Merely learning to conduct project reviews is often not the only bottleneck to process improvement however. Many organizations conduct reviews only to find their real improvement pitfall is a lack of ability to follow through on implementing improvements. To overcome this barrier many organizations work to synthesize learning from post project reviews and present it to upper management once every six to twelve months. After hearing the lessons learned from a number of projects, management is encouraged to find common themes and select one issue which is the focus of improvement initiatives for the next period.

## 10. Product Development Measurements

Maintaining a consistent focus on improving your process requires more information than just what went wrong on a specific project.

To supplement lessons learned and guide your improvement initiatives a set of product development process metrics becomes an important tool. Many organizations are working to build "product development balanced scorecards" consisting of five or ten metrics which monitor internal process efficiencies, customer acceptance and business success of products. Metrics data is used to determine if they are becoming more effective at product development; how fast improvements are occurring and if the rate of improvement is consistent with the strategic and competitive needs of the business.

No universal set of metrics applies across the board to all software companies. The correct set of metrics is based on your specific business goals and objectives, your existing relative product development strengths and weaknesses and your product development strategy. An example of one software company's selected set of metrics is shown in figure 5.

### *Product Development Metrics Scorecard*

After a thorough review of it's product development issues and bottlenecks and defining its goals, one software company defined the following 9 metrics for continuously evaluating the progress it was making in improving it's product development capabilities:

1. **Product Flow** - Number of Products for each category type released per period compared with previous year. Target Based on long range plans.
2. **Timeliness:** Average Schedule Compliance… Ratio of actual months to planned months for all projects completed in last period. Target : Continuously improving;< 15%
3. **Completeness:** Requirements Coverage…Requirements delivered at First Customer Ship as a % of those in frozen requirements document. Target : > 95%; Varies with product type
4. **Requirements Churn**: % of requirements change per month of project schedule. Target < 2% month
5. **Productivity:** Developer person months expended for each type of product/ project type compared to previous period. Target: Continuously improving
6. **Quality**: To measure the degree to which products are complete and reasonably defect free at time of release the chosen metric was the cumulative post release maintenance & development cost for existing products divided by the cumulative lifetime revenue for the same products. Target < 10%
7. **Product Business Success**: Average Time to Break Even for products released in last x years. Target continuously improving
8. **Process Compliance :** Percentage of projects which "followed the process". Correlate with product success rates. Target: Continuously Improving; 90%
9. **Best Practices Utilization:** % utilization of a set of predetermined effective practices as measured in a yearly audit of the Product Realization Process. Target: Index dependent

*Figure 5*

## *Benchmarking: Key to Improvement*

Keeping a focus on ten key elements of product realization process improvement can be tough to say the least. Many companies are using participation in focused industry groups which are designed to share best practices and metrics as a means for expanding corporate commitment to strengthening their product development methodologies. The Product Masters Collaborative offers a structured approach to building commitment to improvement.

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*Joseph Kormos is author of Product Planning Practices in the Software Industry, published by Culpepper and Associates. Innovative Development Associates helps high tech companies benchmark and improve product development processes to boost the payoff from their R&D investment.*