

Creating Innovation Management Processes

HOW TO DESIGN SUPERIOR INNOVATION PROCESSES USING
AN INNOVATION MANAGEMENT MATURITY MODEL



A TIM Foundation Guidebook Publication, No. 4

David Williams | Gert Staal | July 2016

© TIM Foundation, all rights reserved, 2016



Table of Contents

Table of Contents.....	1
Introduction	3
1. Processes are a hygiene factor.....	4
2. Designing Innovation Decision-Making Processes.....	5
2.1 Discovery	5
2.1.1 Discovery: Early Development or Front-End Description	5
2.1.2. Processes, and management styles around Discovery.....	6
2.1.3 Discovery process development since the early 2000's.....	8
2.1.4 Discovery and the PDMA model.....	8
2.1.5 Discovery, Serendipity and Connectivity.....	9
2.1.6 Processes and Radical Innovation Types.....	9
2.1.7 Processes Can Become Defense Mechanisms.....	11
2.1.8 Process and Idea Management	11
2.1.9 Recommendations for Implementing Discovery Decision-Making Processes	11
2.2. Development.....	12
2.2.1 A Typology of the Linear Model of Decision-Making Processes.....	12
2.2.2 Gated Decision Criteria.....	13
2.2.3 Modern Short-Cyclical Processes.....	14
2.2.4 Recommendations for Implementing Development Decision-Making Processes.....	15
2.3 Deployment.....	16
2.3.1 Process Design in Deployment Phase	16
2.3.2 Recommendations for Implementing Deployment Decision-Making Processes.....	16
3. A Management Summary of the Innovation Management Standard and Maturity Model	17
Why have an innovation management maturity model?	17
What is an innovation maturity model?.....	18
What does the innovation maturity model cover?	18

Creating Innovation Management Processes



How does an assessment work?.....	18
Can you innovate with an innovation maturity model?.....	18
Applicability and Scope	19
More relevant reading.....	19
Conclusion	20
What is the TIM Foundation?.....	20



Introduction

Innovation Management is an improbable marriage between chaos and structure. Most larger organizations today have structured activities around innovation and product/service development decision-making and activity flows into processes. On the one hand, they have to because, among other things, only a proper framework of decision-making for activities can minimize your risk, avoid re-work, put activities in the right sequence, and relate all the activities to each other. In a way, a restaurant is a nice analogy: it has a chef (a manager), a kitchen team, a team of waiters, and a set of processes (recipes, work procedures). Without a proper sequence of activities in the recipes and work procedures, a list of ingredients, etc. the kitchen team is almost by definition destined to fail consistently at producing a proper meal, and the team of waiters would consistently fail at serving dishes to clients with a minimally acceptable degree of predictable quality.

That is where the analogy breaks down.

“Innovation Management is an improbable marriage between chaos and structure..”

“Processes can also inhibit innovation and actively block the development of new initiatives, that any organization also needs.”

For radical innovations, you should likely break free from deeply engrained process constraints, not go down the trodden paths. Innovation management is about connecting the impossible: radical and incremental innovations require diametrically opposed methodologies and toolsets.

Processes can also inhibit innovation and actively block the development of new initiatives, that any organization also needs. Running a really good restaurant goes far beyond well-established process and experiments, which great chefs like for example Ferran at e.g. El Bulli, or Passard at l’Arpège have shown us.

Finding the proper balance between structured approaches and freedom to experiment is a key predicament. For those involved with building fitting processes for established ways of working, and simultaneously need to create experimental settings, selecting a mix of methods and tools suitable for both environments. Or rather: a matching toolset adapted for use in both circumstances (connected, but not necessarily identical).

I. Processes are a hygiene factor

Regular innovation and NPD processes in themselves are what you could call a hygiene factor. This means that you need to have processes in order to be successful as a basic requirement, but it will not get you much further than that. In and by itself, good processes alone *will not deliver you a single new product or service*, let alone ensure that this particular product or service will be successful. *There has not been a single organization in the world that has created a brand new product with excellent processes alone.* No orchestra in the world has delivered a top performance simply by playing the right musical notes as displayed on the sheet music in front of them. At best, it will be mediocre. At worst, it could sound horrible. Not having any installed base w.r.t. processes at all, however, is equally risky, having too little of it can lead to chaos. Having too much process might slow you down or even suppress radical innovations when you need them. How to set up these matters properly? There is no single hard-and-fast rule and there are no silver bullets. Your processes need to be relevant (appropriate and cut to your measure), timely (meaning current, so adapted over time), and contextual (suitable for the situation in which you intend to use them).

“There has not been a single organization in the world that has created a brand new product with excellent processes alone.”

Since organizations do need to have these matters organized in some fashion, one way or the other, we will first describe what processes usually look like. Many organisations over time have developed different variations of innovation and NPD processes for their own purposes. Some organisations will have highly complex processes because their activities are very intricate and the technology is advanced (e.g. high-tech microchip producers), or because their projects require large capital investments (e.g. energy companies when they set off exploring new oil fields or build new refineries). Other organizations may be forced to keep processes simple and streamlined because their processes are not that complicated, their market conditions change continually, the competition they face is intense, such as fast-moving consumer goods organizations or Internet companies such as Google, eBay or Amazon. Some organizations, such as public services, may have very slowly developing but elaborate processes. There is a pragmatic simple yardstick in that the more complex, capital-intensive your environment is, the more steps processes are likely to have to curb risk and deal with exposures. The more competitive and changeable your environment, you may be forced to keep processes simple and straightforward.

Different types of processes need to co-exist. Organizations may have a basic linear process for the maintenance and further upgrades of existing products and services, and fast-track cyclical processes for new developments with more room for experimentation, particularly in the front end. Both need to be there at the same time.

The elementary question is this: does it hurt to have multiple processes? It does not if you have an overarching innovation management system with its components (processes, tools, methods) working in synch. An analogy: Eric Ries commented in his book *The Lean Startup* it is sometimes necessary to protect the parent company from the start-up activity, and not the other way round. There may be many organizations that require different (and adaptable/flexible) process models for support releases, incremental changes, and radical change.



2. Designing Innovation Decision-Making Processes

We will look at designing decision-making processes for the three important phases of innovation of the Innovation Management Maturity Model and Standard: Discovery, Development and Deployment. Each comes with its own specific set of characteristics and recommendations.

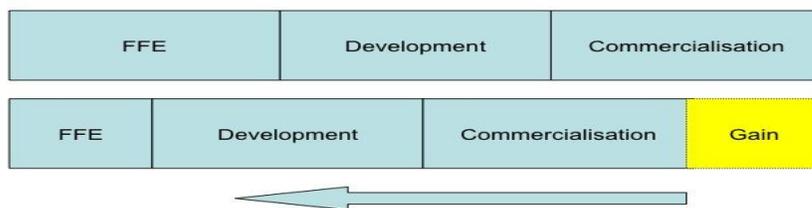
2.1 Discovery

2.1.1 Discovery: Early Development or Front-End Description

Discovery (often called Front-End or Discovery for short in NPD jargon), is an important concept in New Product Development. It is precisely the area in which larger more organized and established organizations run greater risks of failure even if they set up sand-box environments. This is even more perceptible if organizations are under considerable financial constraints (such as publicly traded organizations) or if they have implemented rigid product development processes, either out of necessity because e.g. of the level of investments or regulatory reasons as pointed out above, or because they have a very formal culture of decision-making.



The term Fuzzy Front End (FFE) was first coined by Preston Smith and Don Reinertsen in their seminal work: *Developing Products in Half the Time*, originally published in 1991. The original idea was quite simple and straightforward: how to accelerate product development in the front-end to deliver you immediate advantages at the back end (launch) in terms of time.



13

Figure 2. Discovery compression

Literally taken: product development time is money, and the more you could accelerate in the Fuzzy Front End, the earlier you will be able to profit from revenue streams flowing from the new product. At the time the study



was a milestone, but rather financially and technically oriented. The analysis in itself revealed a truism about an apparent problem in the front end, but the book did not offer any tools with which to achieve that acceleration properly. In essence, it signalled the importance of effectiveness in the Front End, but it did not offer any solutions. Only in the last decade a host of toolsets has become available, and have become usable, to accelerate the pace of development in the Front End.

2.1.2. Processes, and management styles around Discovery

The Discovery phase has proven to be a troublesome area for decision-making process development. Front end activity may be difficult to embrace for people with rational management styles, who are process-oriented or operational managers who tend to adhere to principles of operational excellence and think in structures that are elaborate, but fixed. The difficulty is, there is not always a linearity, sequence, or a structure, associated with front-end activities to begin with, that you can fall back on, nor has there traditionally been much drive for efficiency. *In many organizations Discovery activities are implicit, in other words, not addressed as a key activity.* Only in recent management literature, we find more systemic approaches to Discovery delivery, particularly in a start-up setting (internal venture program, or external). Connected to this development, we have seen the rise of short-cyclical decision-making and project management, beyond the waterfall (linear) model, such as Agile/Scrum.

By its very nature, Discovery activity and decision-making can be much more chaotic, non-linear, and therefore inefficient and ineffective than we would find desirable: all kinds of strange loops, backtracking, and cross-overs might occur. Or rather: *should occur*. Some people will indicate there is expense in repeats and mistakes. By all means. For sure, from a pragmatic, traditional management point of view, that is correct: yet there is always a *degree* of non-avoidable loss and inefficiency involved in any Front-End activity because of its experimental, hypothetical nature. The issue is not the experimental nature, the issue is where to allow for experimenting, and where to be hard and fast. Sometimes even, errors, loss and inefficiency are inescapable to arrive at the right result, as the story of the 3M Post-It™ has shown (such feats may be rewarding for few projects).

“In many organizations Discovery activities are implicit, in other words, not addressed as a key activity.”

There has been a great acceleration in thinking about the Discovery in recent years. In the early days of FE, as a result of a lack of shared language and terminology across industries, there were considerable challenges managing the Discovery and its terminology. *Why has this taken so long?* There are certain aspects of Discovery work that do not fit traditional patterns of thinking we find in classic management literature:

- Discovery has its own non-linear, inefficient, inconsistent, ambiguous terminology, processes, tools (see above).
- Discovery may not always have a clear rationale that links early Discovery goals to requirements in current development
- In any organization, Discovery may be a very vulnerable phase. Either as a strategic, long-term decision-making subject it is blinking strongly on senior management radar screens (but there is little contribution or linkage to short-term ROI) or they are not present at all, when Discovery / R&D are not part of your core business and therefore not addressed as a separate phase. There are indications, that even especially engineered sandbox environments for Discovery work don't deliver expected results, and that they are consequently in the danger zone.



As such, Discovery activity has often been regarded as not very purposeful or productive particularly by those types of organizations operating under highly competitive market conditions that are determined by operational excellence as their key driver. The issues have always revolved around FE's relevance to the current activities and development or its immediate payback. Discovery activity on many occasions has been a vulnerable area when budget cuts were easily made in times of financial constraints. No customer starts complaining if you cut back on research budgets. In the short run, cutting traditional Discovery activities



such as R&D like we have seen in the '90s and the '00s had its advantages: R&D seemed 'disconnected' from markets and operations, and as cutting there did not eat your current performance, it made the senior manager look in control while it did not bite short-term performance, it was usually not that much visible as a glaring gap once it was gone, and the decision could be rationalized swiftly by arguing that these departments were not contributing to bottom-line targets, which of course as a matter of fact they did not. To replace this activity, large corporations started with open, start-up like environments and web-based crowdsourcing. Using multidisciplinary development toolkits, they opened up the traditional funnel of innovation management.

Why did this happen? The real underlying cause lies much deeper. Discovery activity is somewhat incompatible



with management theories propagating traditional concepts like command-and-control, operational excellence. These are principles that many managers were taught in business schools, and they take a long time to erode. Business schools today may still propagate an attitude entirely focused on authoritative leadership, short-term efficiency and effectiveness, and rationalization by specialization. There is no doubt, that these have been beneficial, created prosperity for many businesses, but there are downsides too. The biggest one being, that op-ex myopia

keeps you doing tomorrow, what you are doing today. That, is not a sustainable strategy for many organizations if they shoot for higher gains. More balanced approaches (servile leadership, allowing freedom to experiments) are required.

In some instances, well-executed Discovery activity has become a goal in itself. This is the main driving force behind research-driven arenas like e.g. the biotech industry, building new chipsets, or the renewable energy sector. For some companies you could even argue that start-ups have made Discovery the core of their business model. You sell out and leave, end of business, as the sale concludes the project.



2.1.3 Discovery process development since the early 2000's

With the Internet as a substantial driver of change, the subject area of Discovery has attracted much attention in the last decades, and management thinking around Discovery has evolved with it. Many organizations have seen their natural growth decline as a result of years of rationalisation. In the early 2000's, the hey-days of Internet, thinkers like Hamel tried to generate acceleration in the Discovery through use of creative tools, re-orientation of employees, through a self-search into orthodoxies that limited your perspectives, and insights into external, market/customer-driven factors, and focus on new core competences. Hamel's philosophy was that by broadening your organization's perspectives (divergence), you can then synthesize and learn to arrive at new insights about your organization and its surroundings. You could develop a portfolio of ideas (again diverging: i.e. gather as many as possible), which you will then condense into selected concepts ready for execution and concept testing. Hamel's basic idea is centred around developing and exploiting core competence of the organization involved, and changing an organization's self-image of the world (what are we good at and what should we focus on?), and taking away any inhibitions. This attitudinal/behavioral change implies you question assumptions, and go on a discovery journey to find answers to new questions around current and new business practices, go hunt for unarticulated needs of your customers, and soul-search your own core competences and beliefs as an organization.



Hamel's central themes focused around the following:

- Current orthodoxies limit growth perspectives
- Try to find new insight through customer/market orientation
- Engender/stimulate creativity, entrepreneurship, develop new competence
- Stimulate entrepreneurial behavior, but curb risk by phased investment
- Continually question the status quo.

If business growth were, as some economic theorists claim, entirely driven by rationality, efficiency, and economies of scale, and thereby focused on just generating more shareholder value out of current portfolios, then innovation and entrepreneurship would definitely be out of the window, and real growth a *fata morgana*. Many of today's products would simply not exist. However, if Discovery is disconnected from market inputs, organizations can also fail. A balance between connected Discovery activities and back end operational excellence is not a desirable, but an elementary goal of designing innovation management and product/service development processes. They have to go together, difficult as it may be. Hamel's models may be helpful particularly if you have a large organisational setting with a rather static, risk-evasive culture that clearly needs restructuring and freshening up, but you need more. Many established organizations still struggle with this balancing act. Also see the Guidebook on Venturing Programs on this topic.

2.1.4 Discovery and the PDMA model

In successive editions of its Handbook and in the Toolbooks, the PDMA has also devoted more and more attention to the Discovery phase of innovation. Increasingly in its handbooks, PDMA editors tried to marry Development phase process to Discovery:



- Many best practices (examples of successful methods of work) are well-known for NPD processes (a.k.a the middle part), but similar research on best practices in the Discovery is still hard to find
- Many of the best practices in the middle or back end processes are not applicable to the FE. They fail because of the nature of the work, funding levels, activities, and measures of progress is different.
- The Discovery is therefore often one of the most promising areas of improvement.

2.1.5 Discovery, Serendipity and Connectivity

There is a strong association between Discovery and the phenomenon of 'serendipity'. The American Heritage Dictionary describes serendipity as “the faculty of making fortunate and unexpected discoveries by accident.” Let us unravel this phenomenon a little bit further. As we have seen earlier, there are some factors at play that make it possible for people to discover new insights expressly. Hundreds of toolsets for brainstorming, customer safaris, card games, etc. exist to generate ideas, and expand their volume, realign them, shape the results into insights to fuel new business activities. One could say, that even Discovery methods have become a commodity. The existence of new toolsets underlines, that big, 'accidental' discoveries definitely not always happen by chance: they can be supported by methods, stimulated by the right kind of organizational setting, although there are no guarantees. A big issue around serendipity is: you can only accidentally find, if you have an open mind. Only when you have an open mind you are ready to discern weak signals, signify their meaning, and find opportunity for its application. This faculty of 'open mindedness' requires the presence of a few important factors:



One could say, that even Discovery methods have become a commodity. The existence of new toolsets underlines, that big, 'accidental' discoveries definitely not always happen by chance: they can be supported by methods, stimulated by the right kind of organizational setting, although there are no guarantees. A big issue around serendipity is: you can only accidentally find, if you have an open mind. Only when you have an open mind you are ready to discern weak signals, signify their meaning, and find opportunity for its application. This faculty of 'open mindedness' requires the presence of a few important factors:

- proper access to abundant information sources (even in the age of Internet not all information is reliable or has the appropriate quality you need) to generate ideas and insights
- an inquisitive, open world orientation (a mind that is prepared for the unexpected as Louis Pasteur said)
- proper toolsets to generate ideas and unravel insights from them, elaborate them into new concepts
- access to networks of people you know with similar attitudes and preferences that you can exchange and share your ideas and concepts with
- a mental attitude and way of living that is *connected* to current developments and demonstrates that you are prepared to embrace new solutions.

The concept of serendipity is linked with connectivity: being in touch with your surroundings will definitely help you to make a discovery journey much easier. Without connectivity, a journey of exploration can be entirely fruitless, and serendipitous moments will be few and far between, for lack of an inquisitive, connected mind.

“The concept of serendipity is linked with connectivity.”

2.1.6 Processes and Radical Innovation Types

Discovery processes often incubate more radical innovations. To some degree, industries create their own paradigms. If established organizations want to be in the game of radical innovation the motto would have to be: try to break some corporate rules, transgress industry barriers, defy conventional wisdom, and this is what many



organizations do *not* do, for fear of their current established positions, or because of sheer complacency. To succeed with something new, you need to be prepared to undermine or break down what is old. Organizations function by conventions. Worse even: any 'industry' exists only as an industry because of its self-defined boundaries which the participating organizations themselves helped shape! They recruit from the same talent pool. They go to the same conferences where they wine & dine with the same old acquaintances. They buy the same research reports from the same research companies. They hire the same consultants and go to the same business schools having beers with the same industry soul mates. This industry-wide rule-setting comes from the outside *and* from the inside. Restaurants consider themselves restaurants because that is what they call themselves, and that is what visitors will call them. They all have tables, chairs, menus, servants, a kitchen which minimally distinguish one restaurant from another. The message to restaurant owners is that they are actually in the entertainment business, and that for a good evening out they compete with a wide array of businesses such as cinemas, theatres, and online on-demand video services, has often not really sunk in. Real challengers of the conventional, like Ferran with his famous restaurant *El Bulli* realized that if they wanted to make a difference and offer sublime experiences, they *should* be different, by *transgressing* the boundaries of what is feasible with conventional cooking and running a restaurant. By offering continual delights, and an exceptional experience. Before it closed a few years ago, *El Bulli* had a waiting list longer than any restaurant owner in history had ever known. Probably one of the reasons it closed, was because Ferran found they started repeating themselves.

Sometimes an innovation strategy is quite destructive, eliminating entire product platforms, or even industries in their wake. Christensen shows us this clearly in his early studies where he studied different cycles of innovation in various successive product platforms in the hard-disk drive industry. Even though the subject of this landmark study is now somewhat outdated because of the development and launch of the solid-state drive or SSD (which renders obsolete the entire string of mechanical hard drive product platforms by replacing them with solid-state chip technology). Yet even here the same principle applies: disruptive SSD technologies, while creating new products with initially a worse performance than the older product on some fronts (lack of storage capacity being a clear downside), has superior traits on other aspects (e.g. data loading speed and compactness) and then improving them above and beyond the old product generation, meanwhile possibly finding new applications in different market segments mean-time. This can be highly worthwhile to pursue.

“Real challengers of the conventional, like Ferran with his famous restaurant *El Bulli* realized that if they wanted to make a difference and offer sublime experiences, they *should* be different, by *transgressing* the boundaries of what is feasible with conventional cooking and running a restaurant.”



2.1.7 Processes Can Become Defense Mechanisms

Organizations that have been very successful in the past with a particular product or business model, will naturally have developed ‘antibody mechanisms’ to build, expand and defend a successful formula. The more successful organizations have been with products and services in the recent past, the harder it will be to evict an existing process model from an organization and inject something entirely new. *An organization is its own worst enemy in this respect.*

2.1.8 Process and Idea Management

Perhaps it is a good idea to make some distinctions on terminology used.

Ideas are commodities. Contrary to what many people may think, individual ideas are worthless, are generally just a bulk good. Good ones are rare still, though even the good ones sell by the pound as many never get executed. *Idea inception* can be the result of large volumes of information processed, and raw ideas generated by group work in e.g. brainstorming. Consider ideas as constituting the raw material for early phases of innovation. In isolation, and out of context, ideas are of no value, not only if they remain unused and undeveloped. It is in recombination of ideas, that they gain value.

“Ideas are commodities. Contrary to what many people may think, individual ideas are worthless...”

Insights are elevated, boiled-down, distilled residues of ideas, describing deep underlying meaning and significance. Insights place any new raw ideas into a proper situational context for the organization. Insights can kick off initiatives to start whole new products or even new ranges of products and services, or can be the cornerstone of whole new businesses.

Connectivity will help place ideas into their proper context elevating them as insights for further development and deployment, by unravelling and revealing the underlying opportunity, and testing its validity. Entrepreneurship will help bring that opportunity to fruition.

“...there is not a lack of good ideas, and of toolsets to sift through a haystack of good ideas to find the best. There is a lack of people with the capabilities to execute on the good concepts...”

Concepts are the recombination of several ideas into meaningful hypotheses of new products, services or processes. They are idea sets of new initiative.

In many instances, *there is not a lack of good ideas, and of toolsets to sift through a haystack of good ideas to find the best. There is a lack of people with the capabilities to execute on the good concepts*, people who are willing to take some risk and bear the exceptional strains of properly developing and launching a product or service, which is no minor task. Sometimes, it is very hard to produce a truly winning concept. But even so: without good follow-up and execution, even

the best concepts will still not make it to deployment.

2.1.9 Recommendations for Implementing Discovery Decision-Making Processes

Discovery process design elements should be geared towards:



- *Bringing the outside-in, bringing the inside out: 'Connectivity', is an important common Discovery starting point: whatever methods you apply on your search for new ideas concepts thereafter, the starting point is almost always new fact-finding on customers, markets, ourselves*
- *Allow room for serendipitous behaviour where you can. Create an environment, work atmosphere, labor conditions, where that is happening*
- *Stimulating cultural exchanges in your organization. Bring diversity of people, of minds, of cultures.*
- *Conduct critical self-evaluation in an attempt to change and broaden your world orientation, steer away from existing, blinding self-images from the past.*
- Focus on creating continual learning cycles
- Stimulate cross-disciplinary collaboration
- Stimulate cross-functional collaboration.

2.2. Development

2.2.1 A Typology of the Linear Model of Decision-Making Processes

The phase of Development, is also called the 'middle phase'. In this phase, many organizations deploy a common, basic linear process model. A linear decision-making process is a sequential set of decision making activities and activities that support it, which are performed across all functions of the organization with an identified beginning and end. As you can see illustrated in the accompanying figure, these are core process steps that you will find in many organizations. These generic steps could be characterized in the following way:

- | | |
|-----------------------|---|
| • Ideation | Idea generation/management/selection |
| • Concept generation | Develop ideas into more elaborate concepts (combinations) |
| • Concept selection | Evaluate & select concepts as identified/qualified opportunities |
| • Development | Develop concepts into products or services |
| • Deployment & launch | Roll, out, operations start, perform sales & marketing activities |
| • Evaluation | Evaluation of Deployment & Launch, and Evaluation of processes |

For each of these steps, typically any number between 3 and 6/7 for basic processes, the most important decision-making moments are lined up. They are often judged by a decision-making team (a line management team or an Innovation Board) before the project (however vague a project may be in the early stages of its development) can move forward to adjacent steps or be allowed to continue as-is. Evaluation moments are often called 'gates' or 'hurdles': the project needs to clear the gate before it can move forward. In processes modelling tools sign language, this gate event is often indicated by a diamond- or widget-shaped symbol. There is also a set of what are called 'gate' or 'hurdle' criteria that helps the decision-making team to evaluate whether the project has sufficiently met the set requirements, to be able to pass on into the next stage or continue. Sometimes, the project team is sent back to the drawing board. Sometimes, a team can continue anyway conditionally, even though all activities have not been completed, with the implied or explicit promise that these activities will be executed in the near future. Sometimes the project or activity is temporarily or completely stopped. An abundance of literature exists that describes these linear forms of processes which we do not attempt to reproduce here. By far the most important and widely used technique is that of Stage-Gate™ by Dr. Robert Cooper. It is very common in many organizations to have at least a simple version of a linear process in



place, at least in Development and Deployment phases. An all-too-straightforward implementation of a linear process has serious drawbacks. *Simple linear decision-making processes suggests a simplicity and linearity, where sometimes these events are neither simple nor linear. In other words: even though this is the most widely used form of structuring decision-making, more so in the Development phase and into Deployment, using purely linear process models overall as the single instrument of decision-making is not recommended.*

Sometimes people may assert that anything in terms of process is better than having nothing at all, as having a process by itself makes you think about what is required at each step along the way, in terms of omissions, avoid mistakes etc. That needs qualification though. It depends on your perspective, there are serious drawbacks with an ineffective process in place, most clearly so in early phases when suggesting a linearity and straightforward pattern which does not exist.

“Simple linear decision-making processes suggests a simplicity and linearity, where sometimes these events are neither simple nor linear.”

2.2.2 Gated Decision Criteria

The biggest advantage, if you have a gated process in place, is that it forces an organization to think about specific criteria, information requirements, and demands it wants to set at each stage. Some typical decision criteria for early gates are:

- Strategic implications: how important is this development for us, in the light of our strategic direction as expressed in the vision statement, and in view of our identity as expressed in our mission statement and values?
- Can we identify who our stakeholders are, and what their present and future requirements are?
- Opportunity size: can we quantify the idea/concept's opportunity value?
- Action plans: have we planned our actions appropriately?
- Show stoppers: what could kill this project instantly if it is not addressed or mitigated?
- Feasibility: how feasible is this product/service idea anyway?
- Risk and reward: how big are the risks and what will we earn?

Some typical criteria for later stage gates are e.g.:

- Production and operational issues: are we ready for production, or for planning for production/when is production planning starting? Does the plan scale?
- What is the outcome of testing any of the prototypes or tested services/processes?
- Have our early assumptions been verified, are they correct? If not when will they be?
- Have we prepared ourselves fully for deployment and launch, are there no oversights?
- Have we envisaged competitive or environment responses, and have we prepared ourselves for these?

When organizations start defining and implementing processes as described in the Basic Implementation Guideline, a careful design will deliver you a basic structure that you could implement, but which definitely requires continual updates as the organization learns. There is an abundance of sources for innovation management and product development processes development, but one should avoid getting stuck on implementing what can be described as one 'monolithic' process to govern it all.



A light-hearted but insightful article to pitfalls of linear, gated processes was written by David Nichols: ‘Why innovation funnels don’t work and why rockets do’, published in *Market Leader*, Autumn 2007. Although this article is written in a popular style and aimed at propagating again a prescriptive method of ‘innovation rockets’ to the reader which may not be very helpful, Nichols clearly identifies numerous downsides to classic linear methods with stages, phases, and decision gates. A summary of his findings about gated processes:

- The focus is on picking the winner, not on creating one
- Administration of flow is at the core, not the ideas themselves
- It promotes a ‘not invented here’ syndrome: everything is in a funnel
- Senior expertise is focused on evaluation of what is presented, not on its improvement
- It makes development longer and more expensive
- Assumes that good ideas are easy to come by, which is not always the case.

Instead, Nichols advocates to:

- Set a clear end goal
- Get potent insight
- Set ‘drop-dead’-lines when older products go obsolete
- Use less testing, and go-to launch quicker before completion (learning cycles).

Recent publications like Eric Ries’ *The Lean Startup*, although not so explicit in its condemnation of classic linear approaches, underline that modern, cyclical development methods involve organizational learning, greater agility, and customer proximity. No miracle then, that there is opportunity for something new, which we will discuss below.

2.2.3 Modern Short-Cyclical Processes

In a linear process, people tend to view individual product development activities as separate discrete projects with a beginning, a middle part, and an end, and treat them as such: independent of each other and finite/finished, classical project management, where this is also referred to as the waterfall model. Modern processes are cyclical in nature, completing sub-cycles, containing many smaller cycles, steps for iterative learning. They also require differentiated phases as above, but their end-step is connected with the beginning of the next cycle with compounded learning as result of intermediate and immediate feedback. They typically involve elaborate feedback (learning) mechanisms. Cyclical processes and their activities also appear to be more connected with the organization’s environment as they tend to take environmental factors and stakeholder influence into account directly in the processes’ design. This development is related to important concepts that have surfaced around ‘the learning organisation’. Peter Senge has been a notably influential force with his seminal book *The Fifth Discipline* and subsequent publications. By undertaking development projects, in whatever stage of completion, organizations should learn from similar activities undertaken in the past, from experimenting in the present and apply not just the knowledge gained for improving the idea/product concept for the next cycle, but also for improving the actual processes themselves. Modern development models based on cycles are e.g. Agile and Scrum.

The reality is, that many organisations are unable, or sometimes may even be unknowingly unwilling or unable, to learn from past experiences. In relatively ‘unsafe’ environments, talking about your past experiences can be risky. Tracking an organisation’s learning ability can be done in a structured way: attempting to classify an



organisation's stage in terms of development and learning proficiency surfaces in the Innovation Management Maturity Model and Standard as an essential requirement for success.

2.2.4 Recommendations for Implementing Development Decision-Making Processes

- Whatever you install, do not make processes too complex and elaborate, and allow some freedom of use, as this would easily let many users 'switch off' and ignore processes altogether.
- Further advice would be to look closely at whether processes are required to be linear (one-time sequences) or cyclical. Allow for diversity of these where necessary. *Avoid strictly linear.* As we have seen, gated linear processes have serious drawbacks.
- Pay attention whether good ideas because of inappropriate gate criteria, a strict process, etc. fall by the wayside that could have been developed when given appropriate attention.
- A scalable process design is advisable, in other words where users can choose to 'go deep' if required, but can also work with lightweight process types if that is more suitable for your purposes. When making processes scalable, you need guidance to separate really vital elements which can never be skipped, from optional ones.
- *Use specific, not generic processes, which are designed by the organization. Never adopt anyone else's.* User organizations should take care to not implement any generic processes, but components that are specifically designed and developed by and for the organization, customized to your situation.
- *Don't be fooled by structure.* Don't start over-emphasizing structure and process criteria. Some are vital, others are not, and these choices can even differ for each step or each project, individually. Organizations can be easily led astray by creating processes that are over-elaborate: they try to organize everything up-front, thereby stifling innovation activity completely. For instance, this could happen by inflating the importance of some gate criteria, by putting too much importance on financial criteria for example, or by making the templates rigid and formal or the gate meetings unsurpassable hurdles. The important point here is to make basic processes as simple, plain and structured as possible, and keep room for some improvisation, for flexibility, for changes along the road necessary to adapt your method, alongside some important criteria for what is deemed vital.
- *Don't overdo templates.* Make sure people include short management summaries and prepare short presentations for the decision-making team that are extracts of what they plan to do. Leave source material in the background, accessible when required, but not necessarily digestible.
- *Create and maintain a document repository.* Creating a repository where all plans, reports, templates, etc. are kept together in a secure online project library for future reference and to show people some examples, is always a good idea. This online resource should become the collective innovation and new product / service development memory of the organization. The repository requires attention and maintenance continually, to prevent it from going out of use.
- *Make sure processes are continually updated with new insights.* Did we do it right? Is it still appropriate? Make someone responsible for updating the processes and for educating newcomers. An unchanging process is a dead process. People will stop using them as they slowly become irrelevant.
- *Members of the gate panels/decision groups are not the same set of people in all stages:* in the earlier phases, you may not want to invite your CFO or your Operations Director to sit in on gate meetings. In later stages, you may not always need your CTO or Innovations Director at the table (but you probably want to keep them in the loop by informing them about what is going on).
- *Apply process outcome with flexibility.* Although some discipline is needed as above: process may inadvertently kill good projects. The usability, relevancy, the quality and the effectiveness of the process count heavily, not the number of steps or cycles you go through or how well people fulfil information requirements. If employees start thinking about your processes as 'forms' rather than 'tools' the processes are on a slippery slope towards the process graveyard.
- *Use linear models only where they are appropriate* (e.g. in structured phases of development, when doing incremental improvements, *use cyclical models when an adaptive process is required.* Use them side by side.



- *Look at processes as building blocks and tools, not as mandatory top-down control instruments. A process is something you use while building something great, where its sole purpose is act as a control instrument to keep management happily informed about what's going on.*
- *Finally: the processes are not leading, the learning cycle is. Focus on learning.*
Key question remains: what have we learned today that we can apply tomorrow?

“...the processes are not leading, the learning cycle is.”

2.3 Deployment

2.3.1 Process Design in Deployment Phase

The Deployment phase is where all preparations come together: in the execution of the deployment plan, with commercialization and launch of a product or service. Success or failure sometimes depends on the thoroughness with which the organization has prepared for deployment. We single out Deployment as a discrete step in the product development process that can last up to several years particularly for major new products or services. Deployment is a phase every new product, service or process goes through, rather than a moment in time as popular thinking is. Organizations should appreciate how much time, money and effort should be spent on proper deployment, and how important a flawless execution at this point in time really is. They should similarly not underestimate the importance of countermeasures if things tend to develop in an unfavourable way. It can make or break success of deployment.

In this stage, the actual development work may, or may not be done. Typically, all three, Discovery, Development and Deployment activities to some degree co-exist. Moreover, *key is that if you think of Deployment*

if you think of Deployment as a moment in time... much of the resources the organization planned to spend on this project may be used up when you still need some.”

as a moment in time, which is still quite common, then much of the resources the organization planned to spend on this project may be used up when you still need some. What is important is to steer clear from failure, make some mid-deployment adjustments if needed, and thereby stay in the race. Something that could be overlooked, is that there are many

products and services that will require some re-work mid-launch. It is rare for a product or service to be spot-on in the first version. Sometimes rework is unavoidable as a result of tactical manoeuvring of competitors, unexpected customer reactions or behavior. You cannot entirely predict the product or service's future, your competitor moves, and sometimes all you have is an educated guess. You cannot predict customer behavior beyond a certain point, but there are measures you can take to curb such risks.

2.3.2 Recommendations for Implementing Deployment Decision-Making Processes

While there is still time and money left in the project, ask the following questions:

1. Have you anticipated and forecasted launch of the product as a discrete phase with adequate resources? Is there a contingency budget in place to address sudden unforeseen developments?
2. How well involved and 'switched on' are your marketing and sales functions in the earlier phases of the project, if these are functions in your organization? Are they engaged fully later on?
3. How involved is your distribution network and sales management with the design of new business models, and when they are not is this a conscious choice?



4. Do your deployment functionaries, such as business development and sales staff possess the relevant information and knowledge required to launch, if you have these functions? If they don't accept it, then who will? Can you convince them, and you're already half-way there. Have you planned a roll-out strategy to internal staff alongside external roll-out?
5. Did your organization create simple and effective feedback mechanisms to capture customer feedback as early and directly as possible for further use?
6. Did the organization perform a contingency planning for eventual product/service modifications mid-launch, if that is still possible?
7. Do employees have the necessary mandates to respond swiftly (or at least: does somebody with management access have ability and leverage to get these mandates quickly when necessary?)
8. Who is actually launching the product or service? If the original team does not launch the product or service: how is the handover of the project organized if the original team does not deploy?

It is strongly advised to incorporate the necessary measures and/or countermeasures in the planning when you are preparing the Deployment Plan, as realistically as possible even while the project is still very much 'in the works', meaning in Development. Once details are solidified, and reality catches up to deployment, and particularly if most resources are already spent, it can become hard or impossible to take actions that were unforeseen and unbudgeted.

3. A Management Summary of the Innovation Management Standard and Maturity Model

We have said much about improvement to process models for decision-making, and said what not to do or to avoid, and giving some recommendations. Let's proceed by giving you advice as to how to innovate properly: using an innovation maturity model. This can be used for a number of activities:

- *A reference model for requirements for good processes, tools and methods (advisory, not prescriptive)*
- *A tool to conduct innovation management assessments to establish what your current innovation capacity is and identify areas for improvement*
- *A tool for implementing proper innovation management system, one that balances and incorporates both the experimental and lightly structured front end and the disciplined and structured back-end of innovation.*

Why have an innovation management maturity model?

Any organization, in order to stay alive and relevant, needs to continually adapt itself to its environment. Many of those changes are small, some changes and developments are significant and radical. This model describes precisely what it takes for an organization to be truly innovative, to make those changes big and small. It helps organizations get better at creating new and different services, products and processes and thereby stay relevant. Saving time, cost, and effort. Get smarter and better innovating capability improvement.



What is an innovation maturity model?

This is a truly international and universal, sustainable innovation management maturity model. Utmost care has been given to make this model available and accessible to all organizations, regardless of their nature, purpose and activities. The maturity model consists of eight main documents:

1. Innovation Management Standard - the requirements document
2. Assessment Checklist and the Maturity Grid
3. Interpretation Guideline, containing assessment notes
4. Implementation Guideline
5. Innovation Definitions
6. Innovation Metrics
7. The Accreditation and Certification Program.

A whole range of further supporting and auxiliary documents is available, which help auditors and consultants make innovation assessments and provide advice respectively.

What does the innovation maturity model cover?

It describes the requirements for any organization's measures to be truly innovative. This is done according to three overarching criteria that determine an organization's innovation capability: innovation planning, innovation execution, and innovation deployment. The model covers six major areas: Culture, Leadership, Resources, Processes, Monitoring and Measuring, and Improvement.

How does an assessment work?

With this maturity model, organizations can perform self-assessments, advice on improvements. They can also aim for higher levels of capability by asking an accredited Certification Partner to rate them against the 3 dimensions mentioned above, which provides an image of where improvements could be made, so as to be able to continuously improve their capabilities to innovate and increase overall performance. Attention has been given to incorporate principles of sustainability.

Can you innovate with an innovation maturity model?

This is not innovation from a box, or a panacea. They don't exist. Although you cannot manage all aspects of innovation, you can facilitate innovation, give it focus and direction, and so manage the facilitation process. The Innovation Management Maturity Model is a cooperative initiative of the Product Development and Management Association, holder of the Registry, and the Total Innovation Management Foundation, which manages the model on behalf of PDMA. More information? Check www.pdma.org for the standards and the maturity model, or www.timfoundation.org for more information.

Additional guidelines that have also been adopted by the PDMA and which are now released are the following:



- Sustainability Guideline
- Supply Chain Innovation Guideline

Additional publications, guidelines and reference documents are continually under development to provide specific knowledge by organization sector and for innovation methods, techniques and tools. Currently in draft are the following:

- Reference Document on Innovation Decision-Making Processes
- Reference Document on Venturing Programs
- Reference Document on Small Organizations
- Reference Document on Planning
- Reference Document on Planning Templates
- Cross-Reference to PDMA Handbook and Toolbooks

All PDMA and TIM maturity model, and supporting publications are subject to continual user feedback and a two-year evaluation and review process, under the supervision of the Total Innovation Management Foundation's Board and the PDMA's Standards Committee.

All trademarks and sales marks are the property of their respective owners. Should there be reason to bring this issue to our attention, please do so addressed to the TIM Foundation and we will take appropriate measures.

Applicability and Scope

The Innovation Management Maturity Model, its standard, guidelines and reference documents are applicable to all types of organizations in all sectors, startup or established, for developing an Innovation Management System (business, government, non-profits, sports and entertainment, etc.). The Innovation Management Maturity Model is applicable to the development of new technologies, products, services and processes. Organizations can assess their innovation maturity to the model's requirements and systematically adopt the six elements to develop their own unique Innovation Management System. *In general, every organization will have to adopt its own selection of underlying components, build its own system.* The model provides the criteria necessary for individual learning, knowledge and management of an innovation framework and innovation pipeline and portfolios. Innovation objectives and subsequent projects may include creating new or improving existing technologies, products, services and processes. Companion documents such as Assessment Checklist, Guidelines and Reference Publications are available to support the model and assist the consultant and the end user in developing and implementing an Innovation Management System (IMS).

More relevant reading

For those who may want to extend their knowledge, there are a number of documents that are related to this document which may be used to increase your innovation capability.

TIM-PD-002-A Standard Assessment Checklist



The generic checklist for assessments used as the base for auditing, assessing

TIM-PD-002-AMG Standard Assessment Maturity Grid

The maturity grid used for assessments, appendix to the Standard Assessment Checklist

TIM-PD-003-GLI Basic Implementation Guideline

This document describes a straightforward way of implementing an innovation management system in an organization

TIM-PD-004-R2 Innovation Metrics

A compilation of possible metrics that can be used to measure performance of innovation management systems.

TIM-PD-004-R4 Reference Document on Venture Programs

TIM-PD-004-R5 Reference Document on Small Organizations

TIM-PD-004-R6 Reference Document on Planning

TIM-PD-004-R7 Reference Document on Planning Templates

Conclusion

In this Guidebook we explored innovation decision-making. This TIM Foundation Guidebook publication is part of a series of freely available Guidebooks on sustainable innovation topics. We hope that this document contributes to a better understanding of thorough innovation management for any organization. We are curious to learn from you as well, so by all means, please send your remarks if you like. For more background information and for feedback on our program, visit www.timfoundation.org. You may distribute this Guidebook document freely to interested parties, provided you recognize its origins and keep it in tact. Thank you!

Gert Staal and David Williams

What is the TIM Foundation?



TIM Foundation

The Total Innovation Management Foundation is a not-for-profit organization that is devoted to the development and maintenance of the Innovation Management Standard. It was adopted by the Product Development and Management Association (PDMA) in 2013. Visit www.timfoundation.org for more information.

Gert Staal, chair, and David Williams, director

Zwolsseweg 129

7412 AD Deventer, The Netherlands