



## **Introducing the Innovation Fitness Landscape model and their dynamic capabilities – searching for the ones that are necessary to provide greater organizational impact.**

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*Opening background white paper-October 2009, some revision 2014*

### **The Challenge**

Knowing what are the critical factors and their dependences for sustaining innovation success is vital to understand so that an organization can place the appropriate resources behind them. The questions are: which are critical, which naturally occur when others begin to be put into place, which seem to have limited or no real effect on changing the dynamics of innovation? Knowing these answers and having these clearer to achieve a higher 'return on impact/investment' (ROII) has a real business value.

Today, we lack a clear system model that brings the critical innovation factors out and gives them their appropriate values of importance so resources can be allocated accordingly. Also if this can further be extended to provide the ability to model different future states and conceived future scenarios through different impact-investment simulations, this would certainly provide a strong relational tool for assessing business & innovation allocation with the appropriate resources to achieve a greater 'fitness' in innovation to focus upon.

### **My objectives behind this work.**

To provide a model that understands the critical aspects that impact innovation, that shows the critical dependencies to focus upon and understand, so it can indicate where to deliver 'greater' growth through a more focused approach and longer-term sustainability in innovation activity.

### **Background of why this model is potentially important to provide**

All companies talk about innovation and its growing importance but few succeed in actually doing it on a repeatable scale. What inhibits innovation? What would drive innovation success? What aspects of innovation are critical to have so innovative growth can be achieved? Where should a company place its emphasis to gain both an improving impact on its performance and strengthen its innovation capabilities?

**If we take the view:** *“Innovation is holistic in nature, it needs to be addressed in this way. It covers the entire range of activities necessary to provide value to customers and a satisfactory return to the business. Although innovation cannot be touched, heard, tasted or seen it can be felt. It is probably best described as a pervasive attitude that allows business to see beyond the present and create the future. In short, innovation is the engine of change and in today’s fiercely competitive environment resisting change is dangerous.*

*The key driver of the organizations ability to change is innovation. However, simply deciding that the organization has to be innovative is not sufficient. That decision must be backed by actions that create an environment in which people are so comfortable with innovation that they create it”*

The difficulty for many is that innovation is a complex process that has many intangibles within the total mix to manage. Management today is far happier managing the ‘harder’ aspects of business not the ‘softer’ more intangible ones, where innovation often lies.

There are many variables or factors for ‘innovation success’ and often organizations suffer from the inability to sustain innovation over time. There is a failure to fully appreciate or recognize that there are many interdependencies that surround innovation. Often ‘selective’ activities only generate limited success but sustaining innovation is often elusive without a more comprehensive, holistic approach.

## **The knowledge-driven economy is presenting challenges that innovation will need to drive?**

They are increasing new characteristics of markets- constant change, product life-cycles are shortening and knowledge is consolidating which leads to additional competitiveness from firms:

1. New types of innovation are taking different forms to address these changing circumstances (product, technology-led, service, business model, process, open collaborative, operational, in work design and in marketing approaches to customer need).
2. New needs of stakeholders are pushing expectations to get winning products or services to market on time, every time and at reduced risks.
3. New approaches to innovation management are encompassing all the key areas of management to be mastered, so they can combine to develop successful products and services, increase efficiency and effectiveness so innovation becomes the prime driver for top-line growth and bottom-line efficiency, the two main challenges facing business today expected to be achieved.

4. New technology innovation is prompting firms to access and implement the most appropriate technology according to their need to keep competitiveness. The challenges today are to distinguish between sustaining and disruptive aspects as technology often outstrips market demand, so there often is overshooting due to the pressures from both customers and shareholders that are increasingly influencing where firms often engage.

5. There is an urgent need for better innovation management tools, not just technological ones but relational tools in the way of doing business by achieving insight, both externally and internally, to then build the required competencies and capabilities to meet these new demands.

### **Today's challenges lie with knowing Dynamics Capabilities and the Fitness to Innovate.**

Firm resources are scarce; we still don't understand the 'dynamics' of innovation, the interdependency of the parts, this framework sets out to achieve this. Which parts have greater impact, which are not so important? Innovation is still not treated company-wide in a holistic way as recognition of the dependencies is poorly understood. This is what I want to change. What and where do you place your resources to gain greater impact? What is important to recognize as needing additional 'weight and focus', what capability and competencies need to have a stronger emphasis and why? How can we identify these, make the innovation process more dynamic yet these embed constantly as routines? What would happen if we ignore certain innovation aspects, what would give greater impact to our business?

### **Firstly what are Fitness Landscapes?**

In any competitive situation, the survival of the fittest dominates (Darwinian). Knowing your innovation fitness is essential in this race. The question often raised is where do I focus my limited resource to achieve a better fitness to be successful at innovation?

Mapping out your innovation capabilities to the task at hand enables you to understand and relate to what is needed. Innovation Fitness Landscapes identify the opportunity spaces on where you need to focus your efforts- *the appropriate resources to navigate the terrain*. The greater the 'fitness' transforms your landscape potential into accelerating opportunities into final tangible outcomes. These critical factors give higher value potential or 'peaks' that are more valuable to your needs. The more 'rugged' the landscape can also determine the greater fitness for the rate of innovation. The height of the peaks in these landscapes, the greater value placed upon them, illustrates how intense the innovation challenge is, and the number of critical peaks shows how diverse it potentially is.

The ability to identifying the emerging patterns provides the need to act and invest, *making adaptive even exploratory walks*, so as to move you to the higher fitness points where innovation viability is enhanced and needed to be so as to resolve the

challenges faced. Greater fitness equates to more value creation potential. The ability to inter-couple landscape entities and exploit individual interactions alters your dynamics to innovate and improve repeatable cycle times.

## Why Fitness Landscapes?

The pressing need for a firm is to integrate, build and reconfigure internal and external competencies and capabilities to address rapidly changing environments and its ability to achieve new, more innovative forms in rapid changing market conditions.

This calls for more '**dynamic capability**' to be achieved. The basic question that needs to be addressed is "*what are our dynamic capabilities?*" More importantly "which critical ones should we focus upon to improve our capabilities and competences to innovate?" Fitness landscapes provide the understanding of the existing position and 'point' to where to place your resource to improve your innovative capacity through understanding the dynamics of ALL the parts.

## Introduction to dynamic capabilities

The study of dynamic capabilities, the organization's capacity to change its operations and adapt them to the environmental requirements, has taken centre stage in the debate on strategic management as well as organization theory (Teece, Pisano and Shuen 1997, Eisenhardt and Martin 2000, Zollo and Winter 2002, Winter 2003) in recent times. The notion, which has received several, and only partially aligned, definitions, lies at the heart of the organization's ability to enact change in a systematic and fruitful way.

Winter (2003) clarifies that organizational change happens in one of two ways: the first with ad-hoc problem driven search, and the second through the action of "stable patterns of activity aimed at creating or changing operating routines in pursuit of enhanced organizational effectiveness", the definition of dynamic capabilities in Zollo and Winter (2002).

## What is Dynamic Capabilities?

The **concept of dynamic capabilities defined by David Teece**- "These are the skills, processes, routines, organizational structures, and disciplines that enable firms to build, employ, and orchestrate intangible assets relevant to satisfying customer needs, and which cannot be readily replicated by competitors. Enterprises with strong dynamic capabilities are intensely entrepreneurial. They not only adapt to business ecosystems; they also shape them through innovation, collaboration, learning, and involvement".

Dynamic capabilities, is also another way of addressing change in organizations, and it has the particularity of bringing together the 'outside' and 'inside' dimensions of

organization: in the presence of “rapidly changing environments”, firms integrate, build, and constantly need to reconfigure their resources to meet these new more ‘dynamic’ challenges.

**Dynamic Innovation Capabilities** need to advance knowledge creation and absorption, extend and integrate, then modify constantly the way we operate, reconfigure and redeploy. This involves dynamic sensing, seizing and transforming (Teece et.al) at the three interdependent levels of the individual, firm and network to coordinate/ integrate, learn and transform constantly to reflect constant change.

The critical issue to always account for and define is the appropriate context you are ‘setting about’ with innovation, so you can define where it can create value, otherwise it will have little value in doing and waste precious resource.

So what are the dependences and the complementary parts for sustaining innovation success? The argument points to the capacity to build “dynamic capabilities for innovation”. The debate is, is it “dynamic” or “routine” for sustaining innovation success? Or simply both?

It is the issue of ‘**rapid change**’ that calls for more dynamic capabilities and this need to be fully understood so the appropriate resource and commitment can be placed behind them. The world of innovation-based competition, price/performance rivalry, increasing returns and the ‘creative destruction’ of existing competencies constitutes rapid change but is this to stark for many?

How do you sustain innovation, is it more through the structuring of **everyday work**, by creating a particular set of social rules and resources that foster specific routines? Innovation becomes part of everyone’s job on a daily basis so they have the space to work on it constantly.

What are the firm-specific capabilities that can be sources of advantage and how can combinations of competences and resources be developed, deployed, nurtured and protected? These need to be difficult-to-imitate combinations and integrative enough to give new sources of competitive advantage to stimulate new growth and financial return.

**Dynamic Capabilities** are defined as “*the firm’s ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments so as to achieve new and innovative forms of competitive advantage*”. (Teece, Pisano & Shuen)

**Everyday Dynamics** are where people know what is expected of them and what to expect from others and have a common ground for negotiating collective action in particular situations that create a ongoing social fabric where innovation naturally

flows. Zollo & Winter suggest a dynamic capability “*is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness*”

Both of these ‘dynamics’ arise from learning that is more likely to come from systematic methods. Capabilities are complex, structured and multi-dimensional and organizations often strive to keep these in “equilibrium” (zero level) but markets served are not in this ‘equilibrium’ and are constantly being disruptive, more ‘dynamic’.

Strategic innovation often changes the ‘game’; what it explores and exploits to stay dynamic.

So in summary, dynamic capabilities are the skills, process, routines, organizational structures and disciplines to build, employ and orchestrate intangible assets that are not replicated easily by others and constantly change to meet customers’ needs.

### **What constitutes improved innovation?**

According to Teece, et al, in their Dynamic Capabilities view , it is “*firms ability to integrate, to build and configure **internal and external competencies**, to address rapidly changing environments as essential*” that needs to be included within any innovation framework.

Adding to earlier work from Teece and Pisano they suggested there are essential ingredients for strategic innovation: the position of the firm, the paths open to the firm (technology etc) and the organizational processes followed by the firms, with the importance being placed on the transferring of accumulate tacit knowledge across boundaries to disseminate this.

You also need to add the organizing culture and environment to innovate, its leadership; the skills, disciplines, values and resources being employed and the interactions and diversity that comes from this suggested dissemination mentioned above. Also there are the abilities to execute, the vision and philosophy, the alignment innovation has with the company’s goals and mission, reporting structures, being aware of the market conditions and measuring results of this activity in effective ways.

Substantial competitive advantage is achieved when Dynamic Capabilities are developed as **distinctive processes** (ways of combining and coordinating), **shaped by the firm’s specific asset position** (such as difficult to trade knowledge assets and complementary assets) and **influenced by the evolutionary paths the firm has adopted and inherited**. **The value of competitive advantage however lies within the resource configurations these capabilities create.**

The development of competitive advantage through Dynamic Capabilities relates closely to firms “ability to learn” and thus provides the firm its absorptive capacity, equally a critical factor to consider in the models development.

## **Absorptive Capacity**

**Absorptive Capacity** allows for the recognizing of the value of new, external information, to assimilate it and afterwards apply this to a commercial end (Cohen & Levinthal, 1990). Thus firms benefit from learning will depend significantly on the firm’s ability to learn and absorptive capacity is critical to building **innovation capabilities**. Nevertheless firm’s absorptive capability creates also path dependences and the paths the firm travels often shape the firm’s current position and future stance that can limit success.

*Absorptive capacity* is critical to innovation capabilities to recognize the values of new, external information, assimilating it and afterwards applying to the commercial end. Also the sourcing of external knowledge is determined to some extent by absorptive capacity *Absorptive capacity* increases the ease of learning, competencies and problem-solving abilities, the repertoire of routines and can constrain its future behavior- a ‘familiarity trap’

**Making capabilities routine as quickly as possible provides for sustaining innovation.**

Moving quickly to operationalize routines that can be absorbed across the organisation reduces uncertainty and strengthens the capabilities. Failure-induced tensions trigger the need to imitate or search out new combinations. Knowing this selective diffusion process of aspects that are more important to embed is most useful. Taking a more hierarchical view of innovation and routines enables greater adoption potential.

**The approach suggested as taking with the IFL model- in brief.**

**Finding practical capability identification requires a given approach:**

Initially a more path dependency one searching for existing routines, capabilities and knowledge (more backward looking) for factors that seem to have affected the past success.

1. Identification and classification of existing capabilities
2. Identification and classification of required future capabilities

3. *Then*, prioritization of these capabilities in light of the core capability criteria and strategic goals.
4. The Gap analysis (self assessment and external clarification/ comparison)

This is achieved in a mix of interviews to find the Strengths & Weaknesses and the nature of required future core capabilities felt necessary.

By using a template structuring according to different needs (technical, learning, business, organizational and human/value based capabilities etc.,) this is then classified, tested and presented back with ranking and recommendations.

Ranking could be 1) revolutionary (riskier but needed to make change) 2) differentiating (distinctive for seen advantage and core need) 3) critical enabling (necessary to be industry 'fit') and 4) supporting (essential to have). This has yet to be fully decided on how best to apply..

The management classify existing (static) and desired future capabilities (dynamic). Then these are further prioritized by the dimensions of "sustainability" and "importance to strategic objectives" for identifying sustainable, core-capability-type of capabilities.

The approach taken accounts for **Dynamic Capabilities** as defined as "*the firm's ability to integrate, build and reconfigure **internal and external competencies** to address rapidly changing environments so as to achieve new and innovative forms of competitive advantage*". (Teece, Pisano & Shuen)

## **Internal Evaluation**

The internal evaluation template will classify these into nine descriptor capability 'thrusters' for the more critical internal related aspects:

1) Vision, Leadership & Strategy. 2) Competency Base. 3) Creativity & Idea Management. 4) Intelligence. 5) Organization & Process 6) Culture & Climate, 7) People & Skills, 8) External & 9) Measures and Metrics with the key elements of competence needed within each classified with their degree of importance.



<b>Vision, Leadership &amp; Strategy</b>	<b>Competency base</b>	<b>Creativity &amp; idea management</b>
<b>Intelligence</b>	<b>Organisation &amp; process</b>	<b>Culture &amp; climate</b>
<b>Measure &amp; Metrics</b>	<b>People &amp; Skills</b>	<b>External</b>

Final List of Underlying Capacities for Innovation v1

The Descriptor sets that we are suggesting

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## External Evaluation

Then a second template that considers the external aspects required to achieve a improved innovation fitness capacity and will also classify these into nine descriptor capability 'degrees' for the more critical external related aspects:

- 1) Market Orientation. 2) Customer Orientation 3) Open Innovation Collaboration.
- 4) Competitor Orientation. 5) Structure and classification of External Knowledge
- 6) Social Capital & Network Domain Management, 7) Market Environment, 8) Risk, Opportunity, Reward Evaluation & 9) Cross Industry Comparisons with the key enablers of direction needed within each classified with their degree of importance and relevance.

<b>Market Orientation</b>	<b>Customer Orientation</b>	<b>Open Innovation Collaboration (R&amp;D)</b>
<b>Competitor Orientation</b>	<b>Structure of External Knowledge</b>	<b>Social Capital &amp; Network Domain Management</b>
<b>Market Environment</b>	<b>Risk/ Opportunity Reward Evaluation</b>	<b>Cross Industry Comparisons</b>

Final List of Underlying Capacities for Innovation v3

The Descriptor sets that we are suggesting

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The external evaluation only follows the internal classification and is presently in an earlier stage of development. The external orientation comes from the platform of knowing the internal dynamics and will be seen to be more 'open' in classification. *Modelling the potential sources of competitive innovative advantage that is appropriate to that firm is the end goal.*

## **The Core Theories of Innovation- the models need is to achieve a clear result**

Good management theory provides situation-specific statements of cause and effect. Good theory has two components:

1. An underpinning of a robust circumstance-based categorization scheme that provides a **guide** to the situations managers encounter.
2. A *casual* statement that explains why certain actions lead to certain results and that describes how the result of actions will vary from one circumstance to the next"

*I am providing 1 and trying to piece together the aspects that are casual so we can test 2 and explore "if a set of actions" that if put into place, although they will vary, theses can achieve certain positive results in the appropriate focal points for measurable (innovative) returns.*

According to Professor Clayton Christensen the only way to look into the future is to use theories, because conclusive data is only available about the past: "*The past though is only a predictor of the future only when conditions in the future resemble conditions in the past*". "*The best way to make accurate sense of the present, and the best way to look into the future, is through the lens of theory.*" Good theory provides a robust way to understand important developments, even when the data is limited"

***Theory helps to block out the noise and to amplify the signal***". The theory of innovation helps to understand the forces that shape this context and influence natural decisions. Theory illuminates the signals indicating important developments and explains the likely implications of these developments.

## **Fitness Landscape Result Expectancies are seen to provide a range of positive results**

Expected results sought by identifying the critical aspects of capability identification

1. Moves towards a company-wide development program that gains identification and the target of company-wide improvement of routines and skills required for innovation to succeed/ improve.
2. The internal dialogue generates a self-reflection process for identification of true and 'false' dynamic capabilities and identifies the more static ones that often just need

reinforcement.

3. Pursuing limited or 'selective' development will not have the desired effect, it is not just a human resource exercise or individual level issue but the real answer to innovation requires a 'holistic' view of innovation development

4. The solutions draw out internal discussions for a recognition and reality of the present and future needs in this area of resource allocation

5. Importance of linking capability to become dynamic with the strategy gives greater alignment and potential

6. A clear capability portfolio where resource needs to be applied but also helps identify synergies to bring new value by providing real impact

7. Challenges long-established organizational capabilities and routines taking place by knowing where (and why) they reside and are often more 'static' in reality and not as valuable as other areas of a more dynamic aspect.

8. It provides the means to achieve additional resource allocation and raising the importance of these to support the strategic intent of the company.

9. It intensifies and solidifies the studies and importance of innovation.

10. Outcomes from these expected results raise dynamic capability and the importance of dynamism for more flexibility and reaction in changing, challenging times through seeking routines which can form the basis of sound differentiation.

## **In Summary**

So this hopefully gives you a sufficient background to my thinking on constructing the Innovation Fitness Landscape model at this point of time. I have mainly provided here the background and building of the different theoretical needs to come to this "Innovation Fitness Landscape" model.

As discussed the reason to make contact with you is that I am searching for ways to take this forward quickly through some form of collaborative format where the potential partner who can support and develop this further with me as it provides a 'given fit' to their business.

It is at the stage where this needs is a solid underpinning of this approach theory with the method to provide the outputs that enable this to move forward in a well-structured, logical way and be turned into *the* practical ongoing tool that can be utilised in different situations where innovation understanding is recognised as important to have modelled, so resources can be more appropriately placed.

These will need a constant 'test and learn' approach to calibrate the capabilities and competencies that need to be built into any dynamic fabric, all unique within our business organizations.

I am looking also to model these mutual dependencies, how the innovation 'system' can behave in different situations, its impact factors (weak and strong) and what should be considered in the 'best' innovation environment scenario

The end result needs to deliver a model of innovation fitness and understanding of the dynamics required for innovation to be more successful (and understood) to the organisation

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