



White Paper

Gravitational Innovation Strategy

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Gravitational Innovation Strategy

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Abstract: Competition in business is rapidly becoming competition between business models rather than competition between mere products. A business model defines a broad competitive approach by extensively encompassing the different characteristics of a company's processes, operations and competencies. The authors argue that traditional innovation processes – such as funneling, stage-gate and concurrent engineering – have inherent limitations with such an inclusive concept.

A different kind of approach, one driven by strategic business options, is needed to assess and identify the potential alternative innovations. The options act like gravitational forces that attract the most promising technologies, concepts and multiple ideas to be embedded in an entire business model.

The article is based on the authors' extensive practical experience in a global business environment, as well as on their academic work. It follows the constructive research approach, where one creates an argued solution for a relevant practical problem, verifies the solution in practice, and then endeavors to generalize it.

Keywords: Business model; innovation; funnel model; Schumpeter; strategy

1. Business Models

Today, and in the future, competition between companies will soon not be competition simply between the attractiveness of their products and services. In the past companies have typically supplied (technology-driven) product offerings to choose from. Or, in a solution-driven approach, they have created customer-focused solutions that solve customers' problems or fulfill customers' needs.

However, merely superior products or solutions at competent prices and with an efficient supply chain are no longer sufficient to ensure a company remains competent. Future competition will be played out between the entire business models of companies.

A good example is the Apple iPhone. Alone it is already a great product, but bundled together with Apple Store, and the Apple brand, identity and usability, it comprises an entire business model that globally challenges the whole mobile business.

In this respect, the customer's role is becoming much more essential than that of just someone with a pure need. Prahalad & Krishnan [1] emphasize this by stating that "value is shifting from products to solutions to experiences".

Customer's experience¹ is not only how customers perceive a product, but rather consists of new experiences delivered by new forms of organization. Experience is an intangible subjective quality built around feelings, emotions, smells, colors, spaces, sounds, human contact, branding, a thousand other factors, and time.

The value shift cannot be achieved by product innovation (physical product, service or a combination of them). Incremental or breakthrough technological innovation alone is not sufficient. One needs **Business Model Innovation**.

This is exactly what Shell CEO and Nokia CEO Jorma Ollila referred to in a recent seminar [2]:

"Innovations are not necessarily technological, but they rather start from customers' necessities. Innovations come from industrial design, logistics, and totally novel business models".

Business Model is about Customer Experience

Every company has a business model, whether it is deliberately defined and clearly articulated, or shaped by itself over the course of time. One can approach business models from a company's viewpoint through "systems" thinking.

This emphasizes that a system is more than the sum of its parts. "Individual components of an organization do not matter as much as the way they work together to enable the organization to create value and deliver it to customers," points out Morris [3]. And he continues:

"If you take a part of a company – say the accounting department – and put it into a market by itself, what you have is approximately ... nothing. The accounting department has no relevance outside of the larger company because accounting is only meaningful when there are transactions that have to be accounted for".

A system we call "a company" consists of many different parts. It participates in other systems we call "markets," which in turn are part of a still larger system we call "the economy". In this concept, the individual components of an organization do not matter as much as the way they work together to enable the organization to create value and deliver it to customers.

¹ Industrial designers often use the term "user experience", referring to the look and feel and usability of a product. Customer experience is a wider concept.

A business model defines a broad competitive approach to business, and articulates how a company applies processes and technologies to build and sustain effective relationships with customers.

The key to success is a focus not on [product] technology itself, but on technology applied in a business process to optimize the relationship between the company and its customers [3].

Why are business models then so important? Because, as value is shifting from products to solutions to experience [1], so “in the end, business model innovation is all about the customer’s experience” notes Morris [3]. A business model thus

- *creates* what customers experience. Those experiences shape the game of business.
- *describes* how a company is organized and how it operates to deliver those experiences.

In a business model the issue is not only to provide a solution to the customer’s problem or need. What is also fundamental is how the solution will be offered and delivered to the customer, and how cost-competitive the whole chain is. The issue thus addresses very Schumpeterian types of innovations[4]: new products, new processes, new structures, etc.

In addition to Schumpeter’s list, the issues essential nowadays are also product identity and company brand, and what these represent (*see figure 1*). Sustainability concerns such as environmental footprint, economic aspects and social impacts are also important full-chain issues behind a business model.

All this implies that “today and into the future what we’re talking about is not just competition between companies, but competition between business models,” concludes Morris.

Figure 1. A business model articulates how a company applies processes and technologies and how it organizes itself to build and sustain effective relationships with customers (adapted from [5]).

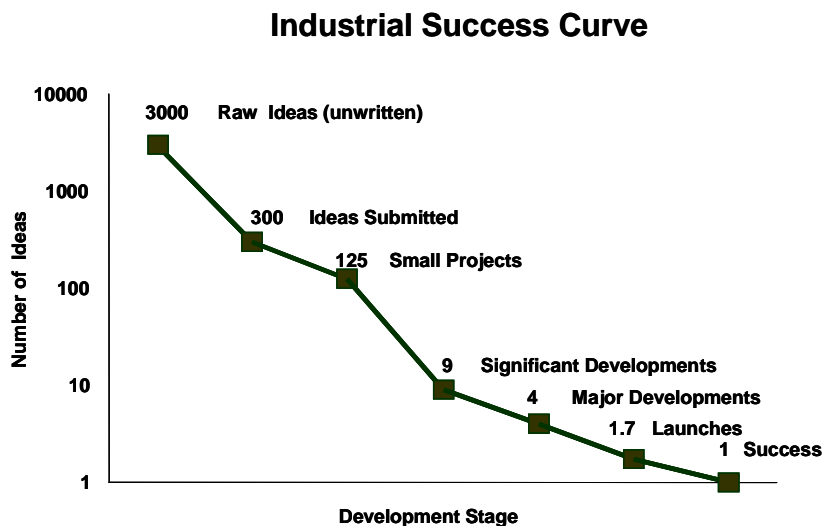


Adapted from Langdon Morris, *Business Model Innovation*. InnovationLabs, U.S.A. 2006.

2. Traditional Innovation Process – Funneling from Idea to Launch

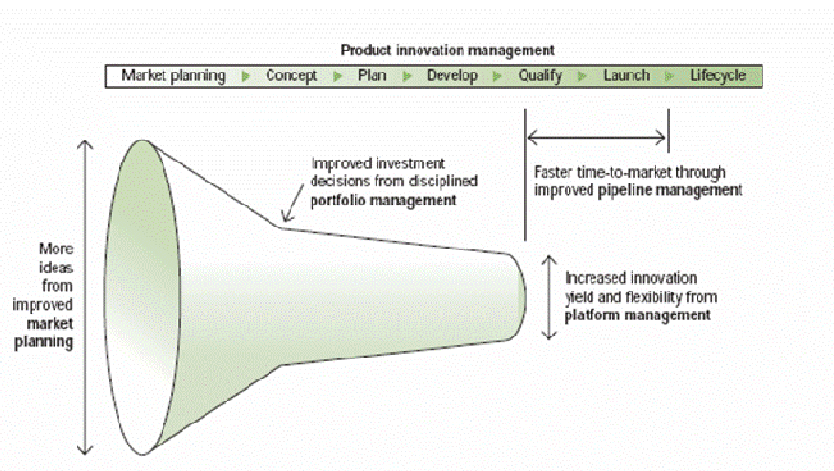
Several studies prove that only a very small fraction of ideas lead to a successful product (figure 2). The exact ratio differs depending on the study, but nevertheless the phenomenon is pronounced.

Figure 2. Only one success out of 3,000 ideas! (Adapted from [6]).



To cope with this fact, it is very logical to think about ways to find good ideas as early and efficiently as possible, and at the same time to save efforts and reduce waste. An obvious approach is to have some kind of screening along the development path. There are several more-or-less similar methodologies, of which the most commonly known is probably the funneling process (figure 3).

Figure 3. A typical funneling process [7].



The traditional funneling process (e.g. [8], [9], [10]) appears intuitively rational. It aims at discarding unfruitful ideas between development phases by built-in screening, and it aims to gradually mature a raw idea into a concept and finally into a ripe product. Some models span the entire development, from idea through to launch. Some end at the concept creation phase, followed by separate implementation, usually concurrent engineering with built-in milestones or gates.

Funneling has proven to work, especially for small companies that need to select the strongest idea from a large amount of discrete product ideas. Funneling is also feasible for companies where products are based on separate inventions, but it might have limitations with business model innovation.

First, it is inherently a “push” model¹. What is put in defines the outcome: squeeze material in and see what comes out. And therein lurks the spook, known in computer science as “garbage in / garbage out”.

Related to that, how can one be sure that the “right” ideas get in? The industrial success curve reveals that most of the effort is spent on ideas with no potential.

Many of the proponents of the funnel model encourage creating as many ideas as possible to improve yield (e.g. [11]). But is the ratio of the industrial success curve constant? Does doubling the number of ideas generate double the number of successes? Maybe less or maybe more? In any case, increasing the number of ideas would inevitably also call for more work and effort during the process, and at the extreme, any funnel would eventually clog up. After all, is the number of ideas more important than quality?

Ideas are screened along the process, but how efficient is the screening? Not only that, but how to be sure that the right ideas get through? Surely everyone has experienced how difficult it is to kill a project. As one executive had declared to Robert Cooper himself “We never kill projects, we just wound them.” Thus, instead of the well-defined funnel that is so often used to shape the new product process, one ends up with a tunnel where everything that enters comes out the other end, good projects and bad [12]. This is true for all types of state-gate processes.

Traditional financial criteria are often recommended (e.g. [12]) for project prioritization and Go/Kill decisions. The expectations might be articulated, for example, on the basis of return on investment (ROI), internal rate of return (IRR), payback time, or net present value (NPV).

There are pitfalls in following the figures blindly. First, the numbers are subject to individual interpretations. What could be, for example, the volume of added sales? And development costs in turn are only an estimate at best. Second, rigid thresholds are a temptation to tinker with the numbers until adequate figures emerge.

3. Business Model Innovation

As Morris noted, since business models are a more comprehensive way of understanding the focus of competition, they must also be the **focus of innovation** [3]. Since the innovation focus is on business models, the mechanism and systems also must be different than when developing products or solutions only.

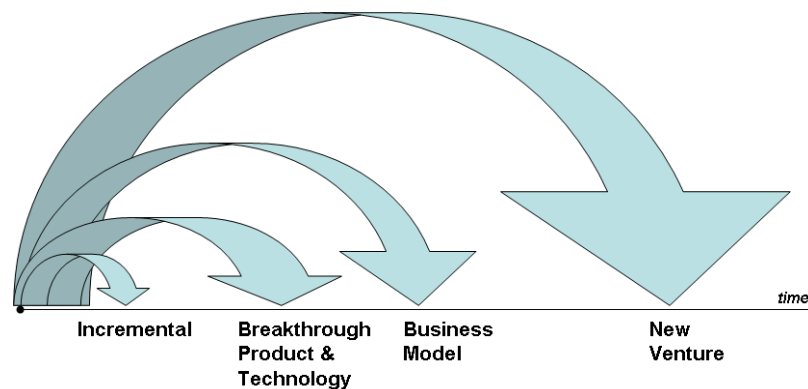
¹ Note that we do not refer here to “technology push” as in contrast to “market pull”. Ideas can relate to any product aspect.

Typically, in new product development, the product, processes and e.g. marketing and other support material are implemented concurrently into existing business processes and organizational structures without radical process change.

With business models there is not only one individual idea for new development, but rather a combination of several ideas related to product or business processes. The driver is a need to solve strategic-level business challenges, or to dramatically change the balance in competition with new differentiated solutions and business models.

All this means that there is a radical change in the business model and business processes as well as in the solution itself (*figure 4*).

Figure 4. Business model innovation is different from incremental or breakthrough product innovations (adapted from [13]).



Adapted from Langdon Morris, *Business Model Innovation*. InnovationLabs, U.S.A. 2006.

The time dimension in the figure refers to the duration in time for which that type of innovation should have value in the market. So an incremental innovation may be important for a few months or years, while a new venture should last and provide value for ten or twenty years, or more [14].

Gravity-Driven Innovation Process

It is business models that create the customer experience, so customer focus must also be the foundation for business model innovations:

- customer focus is not technology push (pushing by rope)
- customer focus is not market pull (pulling by rope)
- customer focus is embedded in strategic business options
- it is about the **gravity** between market needs and company opportunities

Strategic business options are candidate solutions for strategic business challenges emerging from a changing business environment or competitive situation. They encapsulate the understanding of future market drivers and other factors that impact the customer's values and decision-making. They reflect the customer's processes and declare the possibilities to differentiate them.

Strategic business options are the kernels for business model innovations. They act like innovation magnets, creating gravity between recognized ideas and potential business model solutions.

Strategic business options are the base and the key elements for developing new business models. They swap the steering from a traditional push-model innovation into a gravity-driven innovation process.

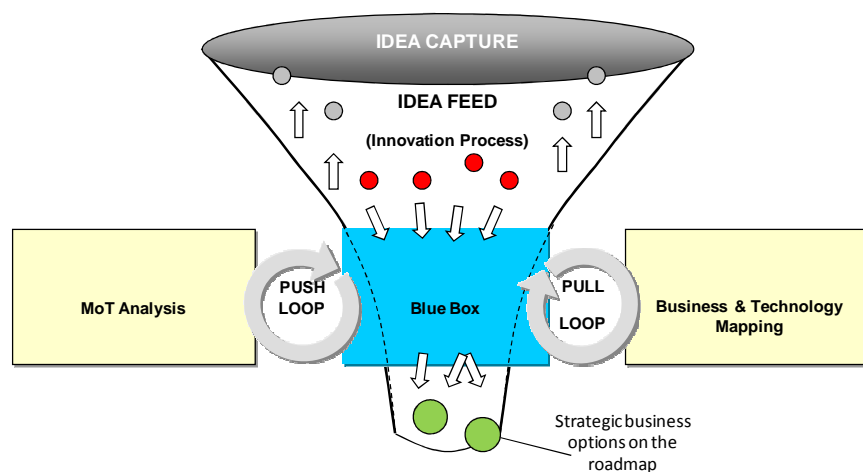
The process consists of three core elements, or 'sub-processes', as illustrated in *figure 5*.

- MoT Analysis
- Blue Box
- Business & Technology Mapping

Briefly, MoT Analysis creates a competitive strategy approach, and identifies the related critical success factors. Blue Box studies define the strategic options for the future business by assessing their value propositions. And Business & Technology Mapping visualizes the synchronized plans of mutual strategies.

These elements are parallel and executed in an iterative and recursive manner in relation to each other, so there is no specific chronological order.

Figure 5. Blue Box studies are the driver for assessing the value propositions of potential strategic business options.



MoT Analysis

The first element is an MoT Analysis, for understanding the changes and discontinuities in the external and internal business environment, and for identifying *strategic business challenges*, respectively.

The purpose is to select a basic *competitive strategy approach*, to define *critical success factors*, and to identify promising new *strategic business options* for further study as potential answers to *strategic business challenges*.

MoT Analysis acts like a ‘big hammer’ for finding a real competitive edge, and for differentiating significantly from competitors. It should be driven by business unit managers, but is still really a cross-functional ‘task area’ implemented in different ways and different forums.

The authors have developed a practical process based mainly on Matthew’s [15] ideas. It consists of a workshop that has six well-defined steps. The analysis should be repeated periodically and also when changes and new challenges in the business environment emerge.

Business & Technology Mapping

Business & Technology Mapping is continuous reflecting, planning, and adaptation to prepare the elements of a new business model for implementation. The crucial content of this element is a continuous strategic decision-making and learning process. The basic wisdom here is that it is impossible to make ultimate decisions without continuously reflecting on the success of strategic activities and learning from them. Behind this is the Mintzbergian philosophy that strategy is never ready [16].

The essence of this element is to make decisions about strategic business options for the future and to place these options on the business and technology roadmaps. The roadmaps provide a “visualized map” for common strategies between organizational groups and functions. The objective is to ensure that the strategic plans are synchronized over functional ranges so that every ‘player’ has the same direction.

Blue Box

Blue Box (feasibility studies), by Matthews [17], is at the core of the strategic level, supporting decision-making both in MoT Analysis and in Business & Technology Mapping. Blue Box studies define the strategic options for future business and decrease their uncertainty. As Matthews states, it is about ‘kissing a lot of frogs and finding those most likely to become a real prince’.

This happens by assessing the value proposition of strategic business options. Strategic business options are strategic ‘magnets’, pulling the ideas together. Only the ideas with a ‘gravitational force’ that is high enough with respect to strategic business options get through the funnel. The framework still leaves sufficient space for the most powerful ideas to grow into strategic business options.

Blue Box studies should have a solid cyclical relationship with MoT Analysis. They create a loop. MoT Analysis identifies promising strategic options, and *pushes* them to Blue Box studies for further investigation. Blue Box studies examine the potential and feasibility of identified candidates, and feed information back for further periodical business/technology analysis and decision-making.

Another loop is formed between Business & Technology Mapping and Blue Box studies. Business & Technology Mapping selects and places strategic business options on the roadmaps. These options further *pull* Blue Box studies to decrease the uncertainty of options and to give information back for strategic decision-making. Based on this information, Business & Technology Mapping receives the ability to make selections between strategic business options and to turn them into investments according to the business situation.

Emergence and Capture of Ideas

Where do the ideas come from? They can come from anywhere. Or one could say that ideas exist, they just have to be identified.

Proponents of the funneling process often see idea generation or ideation as paramount at the front end of an innovation process. One can challenge that. It could even be argued that there is no such thing as active and purposeful idea generation *per se*.

In fact, the concept of ideation might be counterintuitive. One cannot be asked to be creative, or ideative. As Berkun [18] notes,

“... real creation is sloppy. Discovery is messy; exploration is dangerous. No one knows what he’s going to get when he’s being creative.”

There are methods, such as brainstorming, which are a good concept in theory but have proven inefficient in practice. Brainstorming is, in fact, claimed to be actually less effective than individuals working independently [19], [20]. That is because group dynamics affect individual behavior, there may be distraction and social loafing, and so on.

Ideas are everywhere, as Scott Berkun [18] remarks. The statement is supported by a well-known phenomenon called simultaneous innovation (e.g. [21], [18]). It means that two people invent the same thing at the same moment independently and without knowing each other.

This implies that at a given time ideas simply mature. They just need to be recognized. Mintzberg [16] observes the same about strategy creation. Strategies are everywhere, they just need to emerge. He states:

“... strategies often cannot be developed on schedule and immaculately conceived [...] Systems do not think, and when they are used for more than the facilitation of human thinking, they can prevent thinking.”

Coffman & Morris [22] offer an analogy of emerging ideas using sand pile formation. Pour dry sand onto a table. As more sand falls onto the table an inverted cone gradually forms. As still more sand falls, the cone grows. The same with maturing ideas: keep a steady flow of activities going (keep pouring on the sand) until an identifiable form appears (a sand pile or an idea). “The best way to have a good idea is to have lots of ideas,” states Berkun [18].

That is exactly what people who are considered creative do: collect and keep ideas. Edison is a good example. Picasso used eight notebooks to explore the ideas for just one of his paintings, *Guernica*. And surely da Vinci did not sit down and decide: “let’s invent a helicopter”. Instead, he consistently drew innumerable sketches of discrete subjects.

Many mistake known methods, such as TRIZ [23], for idea generation, but they are rather tools for problem-solving or for classifying and organizing ideas. It does not harm, however, to try methods that might help to reduce hitches in idea hunting. Berkun [18] presents several of them, de Bono has written several books on the subject (e.g. [24]), and the Internet can provide a bunch of tools.

To recapitulate: it is important to have a lot of ideas, but even more important is to capture and keep them for future purposes. As Thomas A. Edison has stated¹:

“Make it a practice to keep on the lookout for novel and interesting ideas that others have used successfully. Your idea has to be original only in its adaptation to the problem you are working on”.

This is what Matthews [17] also emphasized: the ideas can come from anywhere, the initial source is not so important. He even stated in his seminars that brainstorming or idea generation, although widely emphasized, are secondary in this context.

Morris [3] proposes specifying the characteristics of ideas by using three elements: description, visualization, and quantification. This is extremely important, because a mere identification does not express the essence of an idea, much less when some time has passed.

- *Description* tells what the idea is, what aspect of a business it would impact, for whom it would add value, and what degree of value it might add. It can be anywhere from a couple of paragraphs to a couple of pages long.
- *Visualization* via a simple sketch, a Venn diagram, a process flow, a collage, or any other means, helps others understand the idea.
- *Quantification* aims to give a concrete estimation of the value of the idea.

Processes in Practice

The discussion above deals with the strategic level. For implementation, the plans generated there will be broken down into change programs and development projects as appropriate and practical. The programs and projects are then carried out using established methods.

In practice one can identify three levels: strategic, tactical and operational. Strategic-level decisions address searching for compatibility between business opportunities and the company’s long-term competencies. The essential content at the tactical level is to provide agility with fast decision-making, according to the conditional business situation. The key question at the operational level is: “What is the right way to implement options to ensure productivity and efficiency, right timing, high quality, etc.?”

Further discussion of the tactical and operational levels is beyond the scope of this paper. The authors have examined the subject elsewhere, e.g. in [25]

¹ *Different sources cite varying wordings, but the message is the same.*

The Driving Forces

Business model innovation is different from incremental and breakthrough technology and product innovations. For that reason also the driving forces must be different.

R&D can be efficient in managing new product development, where new products are developed for existing processes and organization, but it might be short of the authority and decision-making power needed for business model innovations.

There must be collaboration over organizational and functional boundaries, something that has the power to initiate and bring into completion the needed changes. Coffman proposes a structure called “Collaborative Design Group” [26]:

“... some organizations find it valuable to instill two capabilities into their business units: the ability to work together in productive ways, or collaborate; and the ability to conceive new ideas and bring them to fruition, or design.”

The value proposition for a CDG must be as clear and powerful as the value proposition for a business unit. This does not imply that the CDG should be a business unit, but it does mean that its purpose must be crystal clear to every manager in the organization. Otherwise it will fail [26].

Coffman stresses that it is essential to align a CDG with the center of value generation in an organization, i.e. the nexus of three forces (*figure 6*): political power, core processes, and profit generation:

- *political power*: A CDG should be positioned in the organization based on a map of political power and influence and not naively on where it “logically” fits in the organizational chart.
- *core process*: a core process with great potential that is under development.
- *profit generation*: aligned with a business unit that generates its own revenue and is responsible for its own bottom line.

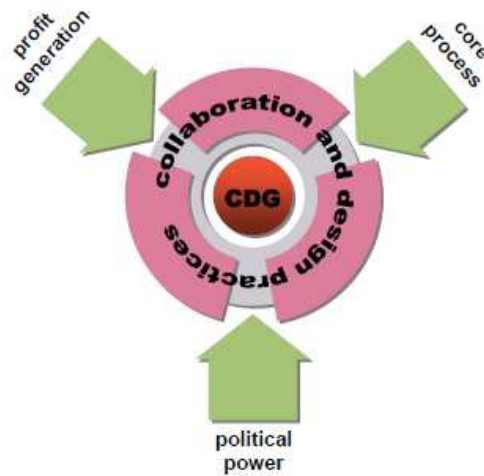
He adds a couple of words of warning [26]:

“Don’t stuff the CDG anywhere because you can’t think of a good value proposition. In particular, don’t unthinkingly put it with the strategic planning department or with HR, R&D or with IS/IT. It may truly belong with one of these groups, but not just because it feels similar to what they already do.”

and:

“Never place the CDG under the authority of someone who’s more than one step away from the “top” (CEO if it’s a corporate-wide initiative or business unit leader if it’s a business unit initiative).”

Figure 6. It is important to position a collaborative design group at the nexus of three value-generating forces [26].



4. Discussion / Validity and Reliability

The approach of this study is a constructive research approach, where one creates an innovative and theoretically sound solution for a relevant practical problem, verifies the solution in practice, and then endeavors to generalize it.

An argued solution was presented above, and some elements of it have been discussed earlier, e.g. in [27].

Individual processes of the framework presented have been verified when KONE developed the revolutionary machine-room-less elevator, MonoSpace [28]. Parts of it were also successfully applied when developing the also revolutionary InnoTrack autowalk [29].

There are no reasons, innate or constructed in the framework, that would prevent the framework from being applied to any industrial enterprise. Our approach is independent of the technologies and processes applied as well as independent of the type of the product. Any type of industry could benefit from using it.

5. Summary

Traditional innovation and product development processes have limitations with creating entirely new business models. Typical funneling-type processes focus on screening individual ideas, and selecting the most promising for implementing them as a product into existing business processes and organizational structures with no radical organizational or customer interface changes.

We have proposed a framework for business model innovation where the driver is a need to solve strategic-level business challenges. The answers to these challenges are strategic business options. They are the kernels that produce gravity between recognized ideas and potential business model solutions.

The business options develop from emerging technologies and innovative ideas related both to product solutions, business processes, customer interfaces, and to the entire value chain – including supply and delivery chains.

In the proposed framework, MoT Analysis is the tool for identifying the candidates for strategic business options. Blue Box research assesses the feasibility of the options becoming business model ‘princes’. Business & Technology Mapping is about planning and timing the implementation of the elements.

As business model innovation differs from product innovations, so also must the driving forces be different. Business level development or change programs that cross organizational boundaries, and address the whole value chain, are needed. Gravity may be noticed also there. The executive body should be placed in the organization at the center of gravitation of political power, core processes, and profit generation.

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