

White Paper

Business Model Roadmapping *- A Practitioner's Approach -*

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Business Model Roadmapping

- A Practitioner's Approach -

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Abstract:

Different types of roadmaps are nowadays widely-adopted business practices.

The purpose, principles and practices related to roadmapping are often loosely defined – or even missing – in the literature. One could claim that a clear definition is not so necessary. On the contrary, it is absolutely essential for one simple reason: why on earth should anybody do something without knowing or understanding why? Worse still, the very reason for roadmapping is sometimes misunderstood; some literature misleads by declaring that a roadmap is about where a company is going. That is completely wrong. Moreover, the scarcity of practical support is hindering efficient roadmapping.

In this article we will demonstrate how wrong some of the misunderstandings are. We will also attempt to introduce a generic framework for smooth and efficient roadmapping in practice. We will broaden our perspective beyond mere products and technologies to encompass business model roadmapping – because it is simply so important.

Keywords: Business Models, Roadmapping, Customer Experience, Strategy, Innovation, Product Development

1 Schematic Illustrations

There are common company-wide strategies that are shared over departmental and functional boundaries. In recent years the widely adopted practice of business and technology roadmapping has been a crucial tool in linking these together, transforming them into actions and making them operational.

Roadmaps come in many different forms and shapes, but usually they include a visual illustration with a time dimension. The classic generic roadmap proposed by EIRMA is shown in *Figure 1*.

It has different layers, presenting the developments in and evolution of competition, markets, products, technologies, et cetera, as well as the relationships between these.

It is easy to intuitively comprehend the benefits of roadmapping in communication, sharing information, and creating mutual understanding. However, one cannot achieve the full business impact without really understanding the role and purpose of roadmapping – and knowing what, why and how to implement it in practice.

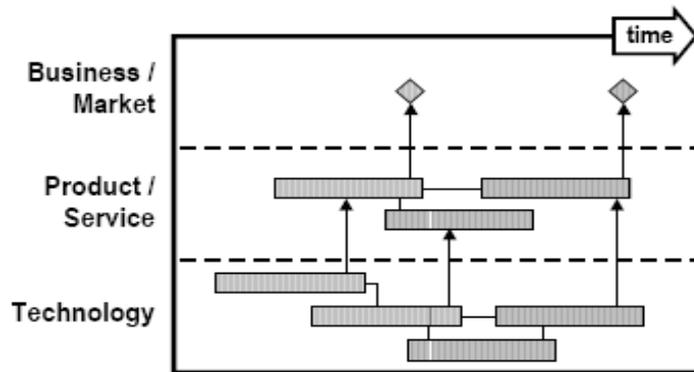


Figure 1 Schematic technology roadmap, showing how technology can be aligned to product and service developments, business strategy, and market opportunities (Phaal et al. 2001).

The principles and practices of roadmapping are often loosely defined – or even missing – in the literature. What is the input information, what are the processes, what are the outputs, and most important, how does roadmapping link to technology management and strategy work? In fact, the very original paper by Willyard & McClees (1987) is still one of the best and conceptually most coherent in this field.

Most strikingly, even as essential an aspect as the purpose of roadmapping is not defined; or worse still, is misunderstood. Of course it is for communication and mutual decision-making, but what is its *raison d' être*? What is its fundamental motivation and justification? Even Phaal et al., in their otherwise creditable article, trip up by stating: “A key benefit of roadmapping is the sharing of knowledge and the development of a common vision of *where* the company is going”.

That is not right, and it is easy to demonstrate so with an analogy to orienteering as shown later.

2 Customer Experience and Business Models

We broaden our view from mere products and technologies to encompass business models because they are fundamental in delivering customer experiences that are the most essential single assets in competition.

As Prahalad & Krishnan (2008) state, “*value is shifting from products to solutions to experiences*”. This assertion is not a major revelation, but perhaps it is somewhat symptomatic that such a heavyweight should voice it.

In fact, the often-cited success stories of the model T Ford, Dell, Apple, et cetera, were the results of novel customer experiences.

It is the business models that enable the transition. As Morris (2003) notes, “*In the end, business model innovation is all about the customer’s experience*”. 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. Consequently, “*today and into the future what we’re talking about is not just competition between companies, but competition between business models,*” concludes Morris.

A business model (Morris 2003)

- *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.

The key to success is a focus not on [product] technology itself, but on technology applied in a business process to create the relationship between the company and its customers (*see Figure 2*).



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

Figure 2 A business model articulates how a company applies processes and technologies and how it organizes itself to build and sustain effective relationships with customers. The list is not exhaustive. (Adapted from Morris 2006).

Business model innovation differs from incremental or breakthrough product development (*Figure 3*).

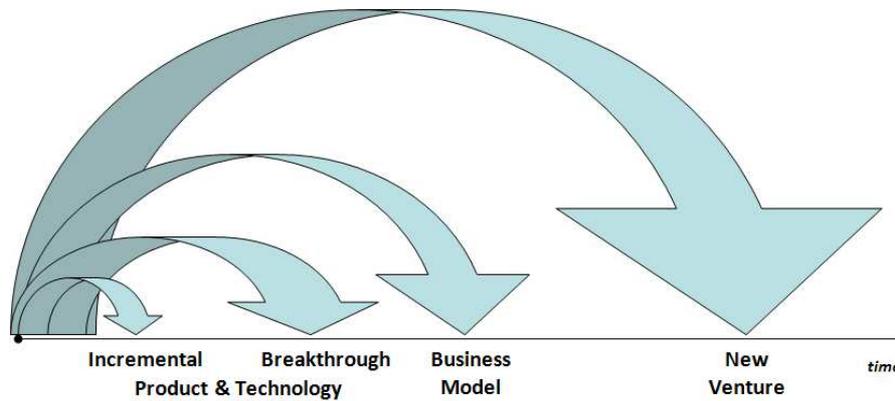


Figure 3 Business model innovation is different from incremental or breakthrough product innovations (adapted from Morris 2006).

The time dimension in the figure refers to the duration in time during 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 (Morris 2009). Good examples of this are some Japanese car manufacturers with their annual facelifts and updates, new model releases, and completely novel brands with independent sales and delivery channels.

Without getting into the nitty-gritty or semantics of different innovation types, one can easily identify a few other differences in how widely and deeply they affect products and processes (*Table 1*).

Table 1 The focus and scope of product and business model innovations.

	Incremental Product	Breakthrough Product	Business Model
Target	<i>Product</i>	<i>Solution</i>	<i>Customer experience</i>
Method	Product development	Concurrent engineering	Business model innovation
Impact	Products / Services	New release	Nil to extensive
	Business Processes	Minor	Significant
	Business Conduct	Nil	Some
			New logics

Incremental innovations usually implement product modifications into existing processes. Breakthrough innovations are carried out by concurrent engineering (or development programs) and they usually have a significant impact on processes. Business model innovations call for a comprehensive survey of the business. This does not imply that the latter innovations demand more effort than the former ones, but rather that the approach is different.

3 Roadmapping

We examine strategic-level (master) business model roadmapping but, by keeping the above remarks in mind, the principles and procedures are also valid for other types of roadmaps.

As already mentioned, roadmaps come in many different forms and shapes, and so also does the process itself. Some consider business model roadmapping to cover everything from ideation to product launch. For some, roadmapping means merely the concrete outline of plans. Our focus is on creating, updating and using roadmaps in business development and innovation.

We will discuss roadmapping and its processes by drawing an analogy to orienteering.

Our orienteering team comprises a group of people with individual skills that support and complement each other in moving ahead towards a mutual destination; similarly in roadmapping there is a group of business and process owners working towards a mutual goal.

Reconnaissance

When orienteering, one can buy a map. A business roadmap cannot be obtained off-the-shelf, but instead must be compiled for the purpose. Basically, it illustrates the competitive situation and its anticipated development; competitors' actions and our countermeasures. Ultimately, it should identify all the vital concerns and anticipated dynamics within the surrounding business ecosystem.

A simplified illustration of a master business model roadmap is shown in *figure 4*.

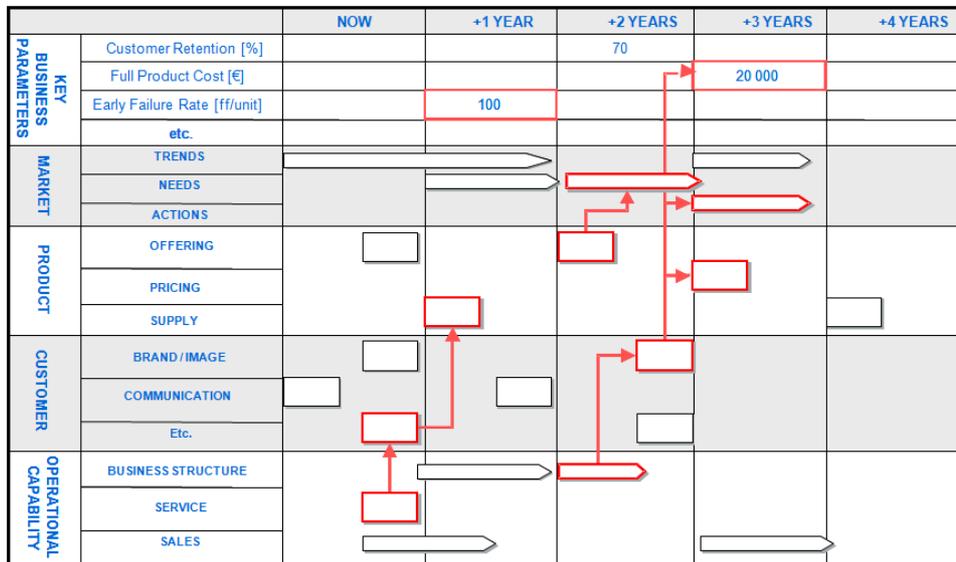


Figure 4 A master business model roadmap comprises several more detailed, issues-oriented roadmaps.

The master is an organized generalization of the more detailed, individual-issues-oriented maps that appear as rows in the master.

We start a reconnaissance by defining the viewpoint.

The rows or layers represent the elements of the business model (*see Figure 2*), e.g. markets, brand, products and services, supply, organization, and other aspects essential to the business. The layers may vary according to the viewpoint. A master roadmap can be for an entire business, a business segment, a market area, et cetera, depending on the purpose and need.

The horizontal dimension represents time. The time span varies, but for a master roadmap is typically around five years. The visibility of the planning horizon specifies the exact span; the near future may appear quite sharp, but also the more blurred distant future should be outlined as far as possible.

One needs coordinates on a roadmap to be able to orienteer. One coordinate is time, and the other is comprised of key business parameters. By key business parameters, we mean the company performance attributes that enable business. They address the most essential priorities in business model development in the long-term, and indicate its progress. The parameters depend on the type of industry and the roadmap at hand. Note that in this definition certain business indicators might either be key business parameters, or the results of achieving those. There should not be too many key business parameters, but merely a handful of those that really determine success in business.

The two coordinates span our sphere of operations. Using them, one can fix the location on the roadmap, and thus define the distance and direction from the departure to the destination.

The next step is to map the terrain. This is done by placing important developments, milestones, objectives and other essential events on the corresponding rows. It is important to draft the developments in markets, as well as competitors' actions as far as they can be anticipated. Critical, or otherwise important, relationships between items should be marked on the roadmap. The items and their relationships constitute the possible routes through the terrain.

The values of the key business parameters over time define the intermediate goals. The objectives of independent developments should contribute to those, and only to those. One must remember that the master roadmap is a summary and generalization, and that more detailed roadmaps exist with related sub-objectives for separate processes, functions and developments. Generalization also means that the master roadmap should consist only of items that are important at that level. Importance here means that they directly contribute to the key business parameters, or have significant relationships with other items on the roadmap.

It is very important to illustrate alternative developments. How otherwise can one take another route when changes occur or one encounters surprises? One must also map the terrain more widely than just the tentative route. If only the route itself is visible, how can one fix the position? We need to include internal and external events; they are our points of reference.

En Route

Now that we have a map of the terrain, our destination defined, and potential routes outlined, it is time to select a favorable route. It may be the shortest, fastest, least risky, or most energy-saving route, depending on the objectives and circumstances.

Project portfolio prioritization, although often considered tricky, becomes simple: it is simply about picking the most promising candidate from several alternatives.

Let us get back to our orienteering analogy. There is a team of people with individual skills. Some are specialists in crossing water, some in building bridges, and some in climbing, and so on. They complement each other in striving towards a mutual destination; in a similar way to what process owners do in business.

The team is ready to go. They have a mutually agreed common objective, a destination. They have an orienteering map, on which they plan their route from departure to destination. With this analogy it is easy to understand that a map with a planned route does not represent where to go, but **how to get there**.

One can quibble that a roadmap shows the destination, but that is not the purpose of it. If a map were about where to go, a picture of the destination, its coordinates, or a map of its close vicinity would be sufficient. There would be no need for a map between the departure and destination.

Once en route, the team observes things that are not on the map. At best, a map is a generalization of reality and does not contain all the details. It may include erroneous information, and in any case a map, either an orienteering or business roadmap, is outdated the very instant it is published. The environment changes. The team may observe things that affect the route selection, points of reference that help in orienteering, maybe even something about the destination. When should a roadmap be updated?

Most commonly it is proposed that roadmaps are updated on a periodic basis, at least once a year (e.g. Phaal et al. 2001). This has serious shortcomings. The information is inevitably old. New, important information may surface immediately after the update and, in the worst case, has to wait a whole year to be incorporated.

There is also a fallacy of prediction (Mintzberg 1994). He states “... *the world is supposed to hold still while a plan is being developed and then stay on the predicted course while that plan is being implemented.*” How can our orienteering team know whether or not a bridge on the map has possibly collapsed? Maybe one realizes only on the spot that an alternative route would be more favorable. In fact, no military body would send troops into unfamiliar territory without sending a scout to clear the way up front. And neither should any business do that, because there might be sudden disruptions in the terrain.

Lockstep schedules also have a concomitant problem. Mintzberg (1994) continues “*How else ... have strategies appearing on the first of June, to be approved by the board of directors on the fifteenth? One can just picture competitors waiting for the board’s approval...*”

Mintzberg highlights still one more problem with periodic, scheduled processes: they tend to get formalized and thereby paralyzed, as many have witnessed in their work. They may even get cannibalized, as a senior manager confessed in his hilarious comment: “*Our planning process is like some primitive tribal ritual: There is a lot of noise, dancing, waving of feathers, beating of drums, and no-one is sure exactly why we do it, but still there is an almost mythical hope that something good will eventually come of it, and it never does.*”

Another school, especially favored by roadmapping tool providers, suggests continuous updating. The problem here is that the roadmap changes constantly; it oscillates. It does not freeze. Naturally one has to collect and store new information, but not to change the route unless it is imperative to do so. Replanning needs extra effort, takes time, and adds risks. And moving ahead is suspended in the meantime.

The situation is still worse if the updates are done with collaborative software tools, where individuals may add to the roadmap on their own initiative. How to prevent the adding of items that conflict with existing developments or developments planned elsewhere? Defining and altering the route, or parts of it, is a mutual agreement and should be done as a team.

Further, when using collaborative tools, how to guarantee that all the team members have the same information? Of course the tools have workflow support, signaling for new updates, and so on. But in a real-life business environment people have several other challenges to take care of, and do not thus necessarily have the time or possibility to check every change at the due time. This leads to a situation where different parties have different conceptions of a roadmap.

The providers of roadmapping software tools justify – and market – their collaborative products by arguing that this is the only way to have up-to-date, real-time information available to all the stakeholders in a fast-changing business environment. In reality, no business is so hectic that the plans need continuous updating on a daily basis. If so, something is seriously wrong! It is about strategy and the corresponding planning horizon that we are dealing with.

The third possibility for updating, and the most important one, is at the end of each intermediate leg. This is virtually overlooked in roadmapping literature, even though it is an essential action of a business owner in practice, and is presented in general literature, and especially in project management literature. After completing a leg, the team verifies its position in the coordinate system, i.e. in relation to time and the key business parameters. The aim is to check that the direction is right, that progress is as planned, and then to plan the route for the next leg.

This is in fact what athletes do. The author asked an orienteerer competing at international level when and how he selects the route. His answer was clear: *“Leg by leg. Never the entire route. One selects a route for the next leg, and once completing that leg, for the following one.”* He added: *“Never change the route in between. One must focus one’s concentration on following the selected route and on moving ahead as fast as possible. Nothing may disturb that.”*

And he continued on his own initiative: *“The most important thing in selecting the route is to approach a control point from the right direction.”* One should approach from a direction where there are clear points of reference close to the control point. Select the route so that the control point can be noticed easily from the direction of approach. And there should be easily identifiable topographic formations behind the control point, in case one misses it in the first place. Approaching from the right direction is the most important thing, because running wide, and later trying to locate a control point, is too time consuming. It is extremely difficult to do this later. There is a moral also for business here: it does not pay to be the fastest if one ends up being the first – but in the wrong place!

Phaal et al. (2001) propose linking periodic roadmap updating to the company’s budget or strategy cycles. Our principle is that the roadmaps are always up-to-date. They should be validated constantly when moving ahead, and new information included

respectively. Only relevant information should be considered, and insignificant details must not blur the general picture. When and if needed for communication at the company's planning cycles, one simply takes a snapshot of the current state.

The route may be changed along the way only when it is imperative. The most important, and natural point for revising the route, is when completing an intermediate leg. There are serious shortcomings to updating roadmaps on a periodic basis only, but it might nevertheless be beneficial. There might be unnoticed internal or external developments, there might be longer-term initiatives beyond the horizon of a roadmap, and there might be needs to synchronize with other roadmaps.

With the justifications above, the author proposes revising the roadmap and the path:

- when completing an intermediate leg,
- periodically, and
- at other times only when imperative.

Once There

Phaal et al. (2001) raise a natural question: “*How to keep a roadmap alive?*”. As is the case with so many good business processes and practices, they easily tend to become corrupted or even forgotten over the course of time once the initial enthusiasm fades.

The answer is simple. Once a team has reached the destination, it has two possibilities. To stay there, or to trek familiar territory; the routes one has taken and places one has been. None of the two alternatives makes sense in business.

The third alternative is to define a new goal, create a roadmap with a route on it, and head for the new destination.

4 Let's Roll up Our Sleeves (Getting Down to Serious Work)

As Phaal et al. (2001) rightly state, “*One of the reasons why companies struggle with the application of roadmapping... is that there is little practical support available and companies typically re-invent the process*”.

The situation remains pretty much the same a decade later despite some respectable initiatives (e.g. Phaal et al. 2007, RTEC 2002, Garcia & Bray 1997). Abe et al. (2009) have further proposed to extend the concept to combine roadmapping and business models.

These initiatives differ from ours in many respects. They tend to cover an entire strategic planning; starting with R&D or ideation and aiming at creating a target vision or strategy. They analyze and elaborate business, products and technologies, and business models separately in a parallel manner.

Our focus is in the actual roadmapping session. It requires that the homework was done in advance; all the necessary information and targets such as vision, or strategic and business objectives having been processed earlier during strategy work.

Rather than an idea or R&D push, here the driver is business challenge pull. Business and technology are considered to be not only parallel, but intertwined.

The purpose of the session is not to develop something new, but instead to achieve shared understanding and commitment of mutual objectives.

We believe that brainstorming, the use of group decision support systems, et cetera, although usually recommended, do not alone result in much more than a collection of ideas or lists of anticipated projects, even at best.

Therefore we make an attempt to propose a practical, yet effective process, where each step adds value in progressing towards a mutual understanding.

The participants are a) the business owner chairing the session and b) stakeholders of the business model elements presented as rows on the roadmap (*Figure 4*). The agenda for a session is the following.

1. **Define the critical business challenge** – *Business owner*
Present the critical business challenges of the business / market / area under discussion. Explain the objectives in terms of key business parameters.
2. **Present the individual sub-objectives of the elements** – *Stakeholders*
For each of the elements (marketing, supply, installation, technology, organization, support processes, etc.), define the general objectives (what, why important). Present the essential scheduling: milestones, releases and developments. Explain why they are important and what their benefits are.
3. **Define critical fixed points** – *Stakeholders*
For each of the elements, identify and highlight on the roadmap the milestones, releases, developments and other critical points that have little or no degree of freedom (i.e. flexibility) in timing, context or objectives. Explain what the strict constraints are and why.
4. **Expose conflicting objectives** – *Whole group*
Identify and highlight on the roadmap the potential conflicts between critical points or between objectives.
5. **Conflict resolution** – *Business owner*
Set up separate task forces to resolve the conflicts outside the meeting. Decide where, when and how the solution will be reviewed.
6. **Summary and conclusions** – *Business owner*
Conclusions of the meeting. Practical arrangement for working out unresolved questions. Next steps. Next meeting.

There are a couple of noteworthy principles for our session practices that deserve a mention here.

- First, **homework**. The roadmap has been compiled, or a previous version modified, in advance by using the input from the business and process owners. This frees the participants to concentrate on the essentials during the session. It requires preparatory homework, which is also good preparation for the participants.
One cannot rely on internal sources alone when collecting and processing business intelligence into working knowledge, but must use external resources. Company-internal information on business is biased by beliefs, hopes and fears.

It is not neutral, but inevitably mirrored against competitors. This is also true, maybe even more so, for the business intelligence related information of one's own company.

- Second, **participants**. Roadmap creation should not be subjected to a dedicated "roadmapping department". The stakeholders themselves are the best experts on the subject matter, and they commit to the plans during the process. As Mintzberg (1994) points out, strategy creation in general cannot be institutionalized, or it tends to become formalized, paralyzed and isolated from the organization. The roadmapping session itself is so simple that it does not need outside facilitation.

One should be careful in selecting the session members. The candidates tend to share comparable backgrounds, similar expectations, and so on.

That does not necessarily lead to a very creative plan, but rather to preserving the status quo of prevailing thinking. It may also result in a mutually biased view of a company's future. DeMarco (2002) has very aptly remarked: *"Unfortunately, momentum in some direction or other does not necessarily imply carefully thought-out strategic thinking. A company can begin to move (or be moved) by a process that is more or less drift. The Brownian motion within the company asserts a net force in some direction and 'By God we're moving'"*.

It could be beneficial to have external experts for sparring or advisory committees to challenge a created roadmap.

- Third, the **nature of the session**. We do not allow cell phones, nor laptops. We do not even have tables in our sessions. We form ourselves into a semicircle in front of a big roadmap. We believe that this is an effective way to work, and in addition we want to convey a message that creates the right mindset: let's roll up our sleeves and get down to some serious work.

The main purposes of the roadmapping session are communication, creating mutual understanding, and getting commitment. The most important of these is mutual understanding, without which it is impossible to get commitment. The primary objective of the sessions is to create a mutual understanding, all the way through to the extreme situation in which the team does not share a common opinion (which naturally must be worked out in due course).

Roadmapping sessions are not for resolving conflicting objectives. For that reason, one sets up specific task forces to work out those that appear. Usually the task force consists of those involved in the conflict. They work out a solution, which is presented in the next session, or communicated otherwise as needed. The solution may not come through goodwill, since stakeholders have different, even conflicting, objectives and agendas. It is the business owner who is in the end responsible for it.

Such a session cannot be conducted in a piecemeal fashion. It is extremely important to have only one mutual session with all the stakeholders present. It is not just about communication, but primarily about a mutual plan, common understanding, and mutual commitment.

Even in a single meeting, participants tend to interpret things differently: they have different backgrounds, they might have business issues bothering them, mental alertness varies, and so on.

If there are separate sessions, the factors for divergent interpretations multiply. Time and place are unique, participants are different, presenters favor varying phrases and expressions, different kinds of questions and comments steer the discussion, et cetera.

- Fourth, **tools**. We did not even consider conducting our business roadmapping sessions via collaborative software tools. The main reason is that the “bandwidth” is too narrow when compared to a common face-to-face discussion. In fact, we do not even use any other software, except a drawing tool for drafting the roadmap. For a session we just post on the wall a big printout that all can see and work on.

Contrary to the principle of the prevailing trend of preferring collaborative tools, we do not give the stakeholders access to complete master business model roadmaps. In fact, they are available in their entirety only at the session. A master roadmap is a summary and generalization of more specific maps.

Each participant has his/her own, more detailed and focused roadmaps and is expected to note the effects of the master roadmap on them. From that point on, stakeholders have full freedom and consequent responsibility to plan and execute their developments and actions, provided they do not contradict, or have side effects on, the master roadmap level.

Refraining from sharing the entire roadmap often upsets certain types of individuals, but the reason is not lack of trust. It is about securing highly sensitive and confidential information. If used as material in other planning sessions, someone can lose or carelessly forget a copy somewhere. And there is no way to control further reproductions. If handed over, the second, or third or fourth in a line does not understand, or forgets to mention, the strict confidentiality applicable, no matter how strongly it is stressed in the first place.

A master business model roadmap summarizes an entire strategy of a business line or segment. The risk of it ending up in the wrong hands is too great a risk to take.

Roadmapping is a widely adopted practice in business, but the scarce practical support available has led companies to re-invent the process. In reality, there is no need to over-mystify it, and we have made an attempt to propose a practical framework for roadmapping.

Our approach is that of business model innovation, but the process is just as well applicable to other types of roadmaps also, if the context is kept in mind.

It is easy to intuitively realize the benefits of roadmapping, but one cannot exploit its real business benefits without understanding its essential purpose and how to exploit it. One of the most common mistakes declares that roadmaps are for defining where to go.

That is not right. As ordinary experience suggests, a map is used to figure out the direction. There is only one, single exception:

a map is needed to tell where to go when one is completely lost!

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