HARVARD | BUSINESS | SCHOOL

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MODULE NOTE

Competing through Business Models (A)

Business model innovation is becoming one of the main forces driving strategic renewal efforts of businesses around the world. IBM's 2006 "Global CEO Study," for example, shows that top management in a broad range of industries are actively seeking guidance on how to innovate in their business models to improve their ability to both create and capture value.

While the expression "business model" has been part of the business jargon for a long time, there is no widely accepted definition of what it means. Its origins can be traced back to the writings of Peter Drucker,[1] but the notion has gained prominence amongst both academicians and practitioners only in the last decade. This is not to say that organizations did not have or use business models prior to this recent wave of interest, but business models of industry players were for the most part similar and, as such, the notion was not the focus of attention.

To a large extent, advances in information and communication technologies have driven the recent interest on business model design and business model innovation. Many of the so called e-businesses constitute new business models. Of course not all business model innovations are IT-driven; other forces, such as globalization and deregulation, have also resulted in new business models and fed the interest on this area.

New strategies for the bottom of the pyramid in emerging markets have also steered researchers and practitioners towards the systematic study of business models. Most scholars working in this area agree that for firms to be effective in such "different" environments companies need to develop novel business models. In fact, socially motivated enterprises that aim to reach the bottom of the pyramid constitute an important source of business model innovations.

What Is a Business Model?

Although there is no generally accepted definition of business model, practitioners often talk of a business model as "the way the firm operates." To make progress, however, we need a more concrete definition. The first essential component of a business model are the *choices* made by management on how the organization will operate. Choices regarding compensation practices, procurement contracts, location of facilities, assets employed, extent of vertical integration, or sales and marketing initiatives define "the way the firm operates."

1 See Peter Drucker, "The Practice of Management." Harper and Row Publishers, 1954.

This module note was prepared by Professors Ramon Casadesus-Masanell (HBS) and Joan E. Ricart (IESE) to aid students in Competing through Business Models.

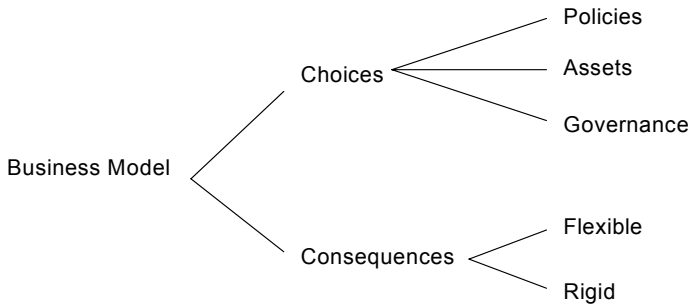
Just as causes have effects in the physical world, management *choices* have *consequences* also. For example, the provision of high-powered incentives (a choice) has implications regarding the willingness to exert effort or to cooperate with coworkers (consequences). Likewise, pricing policies (choices) have obvious implications regarding sales volume which, in turn, affects the economies of scale and bargaining power enjoyed by the firm (two consequences). Because consequences (such as "low cost" or a "culture of frugality") are usually employed to describe "the way the firm operates," they are part of the definition of business model.

In sum, *a business model consists of: (i) a set choices and (ii) the set of consequences derived from those choices*. See **Figure 1**.

For the purposes of illustration, and somewhat loosely, think of a company as a machine.[2] Of course, real organizations are different from machines in many important respects but the comparison is helpful. In this analogy, a business model refers to how the machine is assembled ("choices" on how the machine is put together) and how the different elements work together ("consequences" of the choices). There are various ways a machine can be constructed, with different levels of redundancy, specific mechanisms, quality of components, et cetera. Different machine configurations will have different direct consequences and this will affect the overall level of efficiency of the machine (speed, input efficiency, noise, quality of output…).

It is useful to distinguish different types of choices and consequences. There are three types of *choices*: policies, assets, and governance of assets and policies. *Consequences*, on the other hand, can be classified into flexible and rigid.

Figure 1 Elements of a Business Model



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Policies refer to courses of action adopted by the firm regarding all aspects of its operation. Examples of policies include: opposing the emergence unions, locating plants in rural areas, encouraging employees to fly tourist class, providing high-powered monetary incentives, or flying to secondary airports. *Assets* refer to tangible resources such as manufacturing facilities or a satellite system for communicating between offices.[3] By *governance of assets and policies* we refer to the structure of contractual arrangements that confer decision rights regarding policies or assets. For example, a given business model may contain as a choice the use of certain assets such as a fleet of trucks. The fleet can be owned by the firm or leased from a third party. It is well known that

2 For-profit organizations are often referred to as money-making machines.

3 Notice that intangible assets such as experience, brand equity, or even the value of patents are consequences (generally rigid), not choices.

seemingly innocuous differences in governance of assets and policies may have dramatic effects on their effectiveness.

A consequence is *flexible* if it is sensitive to the choices that generate it. For example, "large volume" is a consequence of a policy of low prices. If the policy changes to high prices, volume is likely to fall rapidly. In contrast, a *rigid* consequence is one that does not change rapidly with the choices that generate it. For example, a "culture of frugality" is a consequence that changes only slowly with the choices that generate it. Perhaps a more tangible example is an "installed base of PCs" which is (partly) a consequence of prices set by Intel and Microsoft for the microprocessor and the operating system, respectively. As prices change, the installed base changes slowly: it is a rigid consequence. Clearly, no consequence is purely flexible or purely rigid. All consequences are somewhere in between, it is a matter of degree.

Business Model Representations

A useful way to represent business models is by means of a causal loop diagram: choices and consequences linked by arrows representing causality. However, except possibly for the simplest organizations, such a representation rapidly becomes highly complex and often intractable. In principle, one could make the effort of listing *every* choice made by management (although this could take a very long time). More difficult, perhaps, is to list the set of *all* consequences of those choices and to spell out exactly how choices (and different combinations of choices) deliver those consequences and how exactly consequences (and different combinations of consequences) enable choices. In most businesses there are large numbers of choices and consequences. An analysis and evaluation of an organization's business model that considers *every* choice and *every* consequence is impractical.

To overcome this issue, we work with *representations* of business models (or models of business models). A business model representation consists of (i) choices (generally a subset of all choices), (ii) consequences (generally a subset of all consequences), and (iii) theories.

Notice the third element: theories. Theories are suppositions on how choices and consequences are related. For example, a theory may be that as R&D expenditures increase, products with innovative features are brought to market. In the causal loop diagram, we would have an arrow from "high R&D expenditures" to "innovative products." In many cases theories are commonly accepted relationships open to little discussion.[4] Other times, however, "theories" are controversial. In the 1960s, Sam Walton believed that large volumes of merchandise would be bought in rural areas if discount stores were located there. At the time, most people did not share this view.

Notice also that theories do not appear in the definition of a business model. A business model is made up of choices and consequences, but these are the actual choices and actual consequences as they are truly related. A business model representation, on the other hand, refers to a *model* of the business model. A business model representation integrates theories of causality that are believed to be true by the business model designer or analyst. If later they fail to hold up, there will be a break in the logic and business model failure (partial or complete).

4 Disciplines such as economics, sociology, or psychology are, for the most part, devoted to generating theories. For example, there is a large body of economic literature devoted to understanding how incentives affect performance. These theories are distilled in our business model representation by use of a simple arrow (or a few arrows) connecting choices and consequences. Disciplines look at individual arrows with great care but have little concern about how arrows interact and complement one another.

As mentioned above, we do not include every choice and consequence in the business model representation. There are two main ways to move from the full detail of a business model to a simplified, tractable representation: aggregation and decomposability. In most instances, business model representations make simultaneous use of both approaches.

Aggregation. Aggregation works by bunching together detailed choices and consequences into larger constructs. For example, specific incentive contracts (which may be unique to every individual in the organization) may be bunched together into a choice called "high-powered incentives." This captures the idea that on average contracts impose high-powered incentives onto the workforce. In the business model representation, instead of detailing every contract offered to every individual, we simply write one choice: high-powered incentives. This allows a simplified representation that enhances our understanding of the organization.

One can think of aggregation as "zooming out" and looking at the (real) business model from the distance. As the analyst zooms out, details blur and larger objects (aggregations of details) become clear. If one keeps the nose close to every choice and consequence, it is impossible to see the larger picture and understand how the business model works. On the other hand, if one looks at the business model from very far away, all the interesting details are lost. Finding the right distance from which to assess a given business model is more an art than a science. How much to zoom out generally depends on the question the analyst is trying to address.

In what follows we use the expression "level of aggregation" to refer to the extent to which we zoom out from the full business model. A high level of aggregation refers to looking at the business model from a large distance. A low level of aggregation refers to being close to the details. As we point in a different note, high levels of aggregation are needed when analyzing interaction between business models of different players.

Decomposability. Sometimes business models are decomposable in the sense that different groups of choices and consequences do not interact with one another and thus can be analyzed in isolation. In this case, depending on the question to be addressed, representing just a few parts of an organization's business model may be appropriate. Clearly, this simplifies the analyst's task considerably. For example, in the case of Ryanair developed below, there are few interactions between Ryanair's choices on related businesses such as car rentals or accommodation or ancillary business by others and Ryanair's operative choices related directly to the management of the airline. Given this, one can understand the working of Ryanair's model without the need to being absolutely comprehensive.

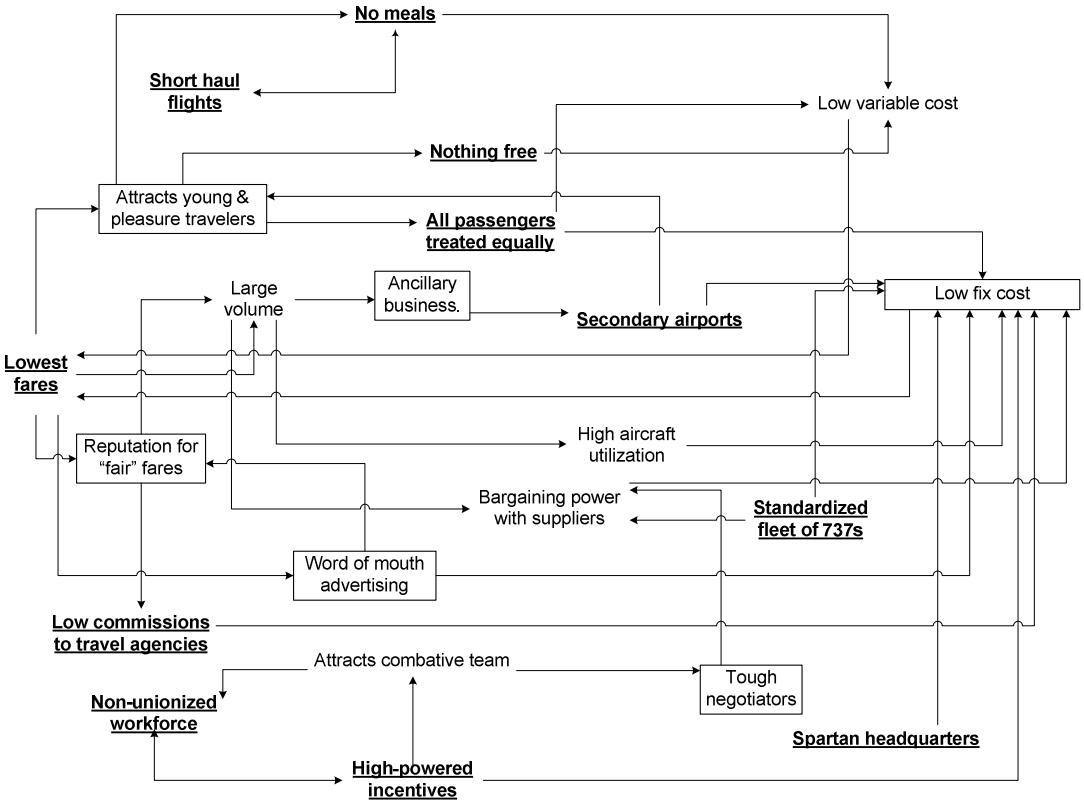
Decomposability also allows the study of individual business units in multi-business organizations. For example, General Electric (GE) is in many businesses such as commercial finance, aviation, plastics, and healthcare. Although there are some interactions between the businesses these are relatively minor and may be ignored when studying GE's business model for plastics.

In what follows, we will abuse language and refer to business model representations as, simply, business models. In doing this, we are assuming that the representation does a good job of portraying the organization's true business model.

An Example: Ryanair

To illustrate our notion of a business model, consider Ryanair in 1999 as described in Jan Rivkin's classic "Dogfight over Europe: Ryanair (C)."[5] Important *choices* in Ryanair's business model include: low fares, flying to secondary airports, all passengers treated equally, nothing is free, no meals, short haul flights, standardized fleet of Boeing 737s, low commissions to travel agencies, non-unionized, high powered incentives, and Spartan headquarters. *Consequences* of those choices include: low variable and fix cost, reputation for reasonable fares, combative management team, large volume, et cetera. Considering what we know about the industry, we develop theories on how choices and consequences are related. For example, an arrow from low fares (choice) to high volume (consequence) reflects the theory that the demand function for fights is downward sloping. We employ a causal loop diagram to represent Ryanair's business model. See **Figure 2**.

Figure 2 Ryanair's Business Model



Source: Compiled by casewriter.

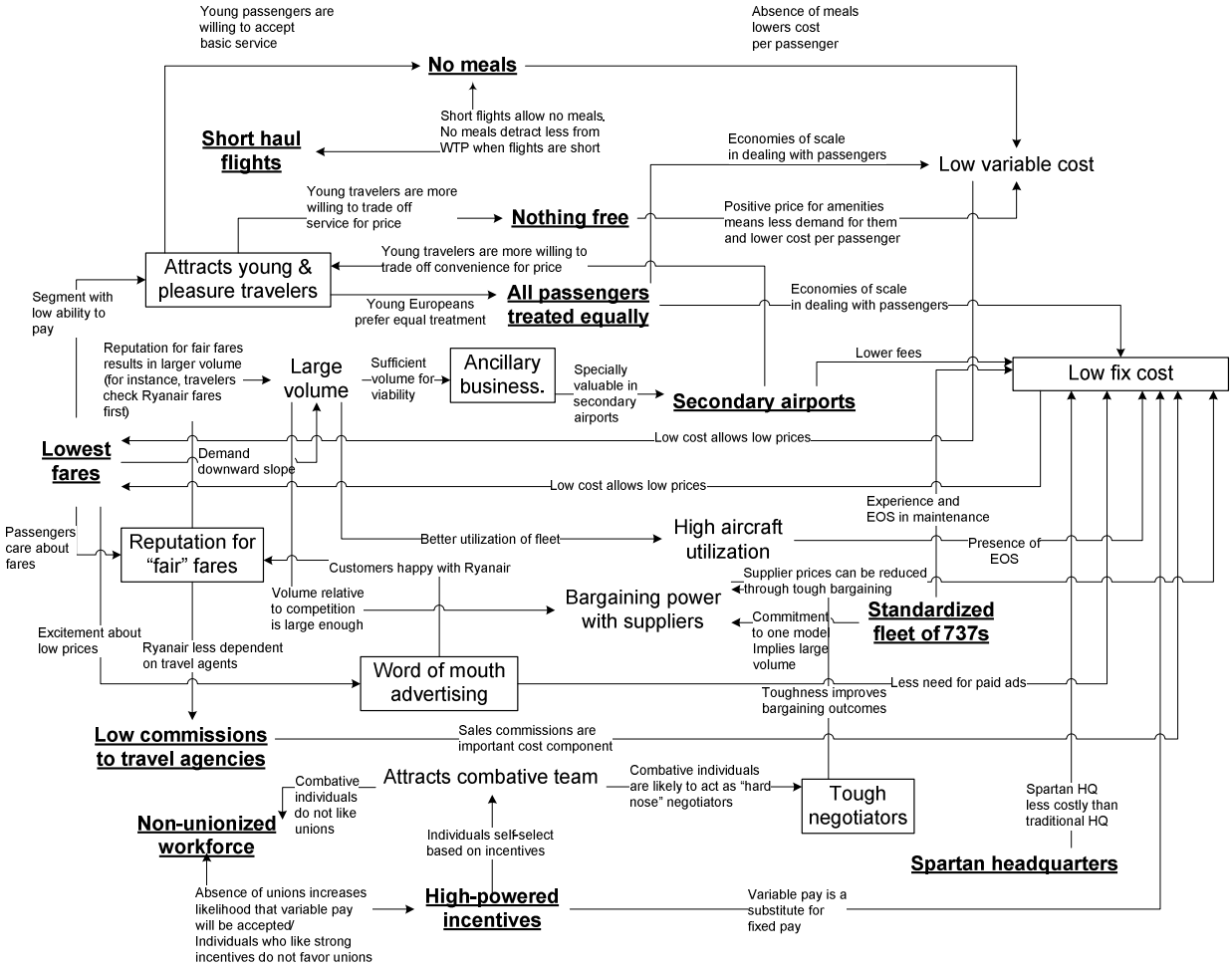
Choices are in bold and underlined, rigid consequences are in boxes, and flexible consequences are plain text. Notice that the representation does not include every choice made by Ryanair nor every consequence. We have made use of aggregation and decomposability.

Figure 3 is a representation of Ryanair's business model with theories. To explicitly account for theories, we include a short text with the justification for each arrow. To keep the representations

5 Jan W. Rivkin, "Dogfight Over Europe: Ryanair (C)," HBS case 700-117.

simple, however, in the rest of the paper we will place the arrows without explicit theories. Only when a theory is non-obvious, we will include it in the diagram. As **Figure 3** illustrates, when theories are explicitly accounted for, the diagram becomes harder to read.

Figure 3 Ryanair's Business Model with Theories



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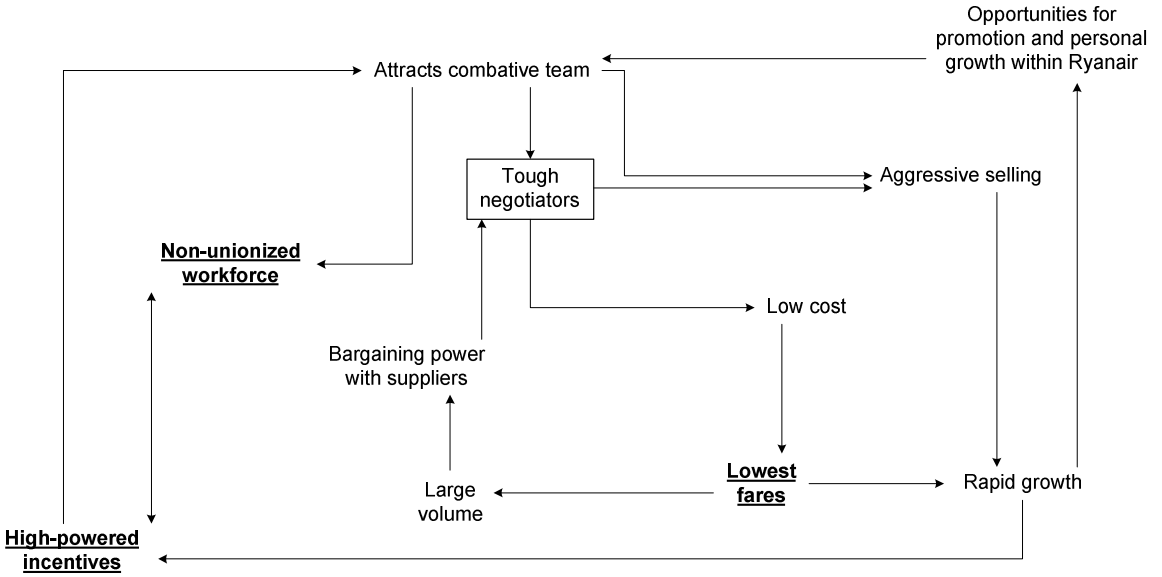
In sum, the causal loop diagram represents theories linking choices and consequences that allow us to conjecture that Ryanair is able to offer service at a very low cost without lowering too much willingness to pay by customers in the target segment.

We should point out that the *absence* of arrows also implicitly defines theories. For example, Ryanair's choices of standardized fleet and the use of secondary airports are unrelated, even if they may reinforce each other by allowing low cost and rapid turnovers indirectly. However, the assumption is that these choices are independent. For simplicity, in the diagram above, we do *not* spell out these "absent arrow" theories.

Finally, we can use Ryanair to illustrate the notion of aggregation introduced above. The diagram in **Figures 2** and **3**, while complex, has been formulated at a reasonably high level of aggregation. We now zoom down to the effects of high-powered incentives (bottom-left corner of **Figures 2** and **3**) to better understand how Ryanair's incentive system contributes to operation of its business model. (See **Figure 4**).

Figure 4 Zooming Down to Part of Ryanair's Business Model



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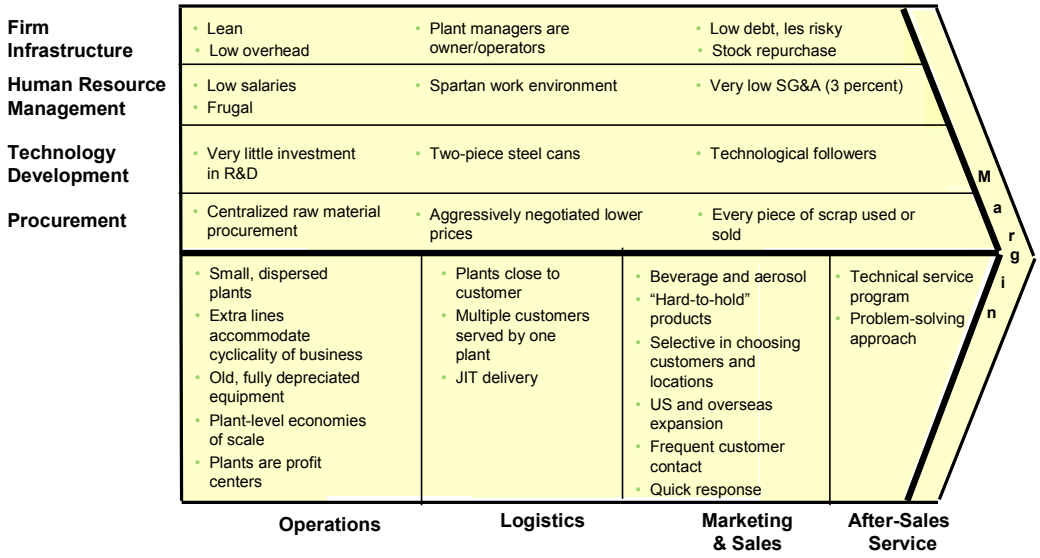
Of course, the analyst can zoom further down if additional detail is needed to understand a specific portion of the business model. (The more decomposable the business model is, the more valid this exercise is.)

The value chain and activity maps provide static representations that highlight the main choices (and sometimes also consequences) made by a firm and, therefore, are helpful tools to represent business models.[6] These tools classify the main activities (primary and support) that a firm undertakes to create value. As such, they help us understand the internal consistency of a given set of activities. These tools, however, do not make explicit the dynamics generated by those activities. The value chain and activity maps are also great tools to analyze a firm's positioning: how the specific set of activities that the firm undertakes help the organization position itself against the five forces and gain competitive advantage. Notwithstanding, they have not been designed for the study of interactions between different industry players at the micro level. The business model representations that we propose are necessarily less comprehensive but stress the causal logic of a given set of choices and, as we show in a separate document, can easily be used to analyze competitive interactions at a micro level.

6 See Michael Porter, "Competitive Advantage." Free Press, 1985. See Michael Porter, "What Is Strategy?" Harvard Business Review, 1996.

To illustrate this last point, consider the classic case Crown Cork & Seal (CC&S).[7] **Figure 5** shows CC&S's value chain which identifies key choices and even some consequences such as quick response.

Figure 5 Crown Cork & Seal's Value Chain



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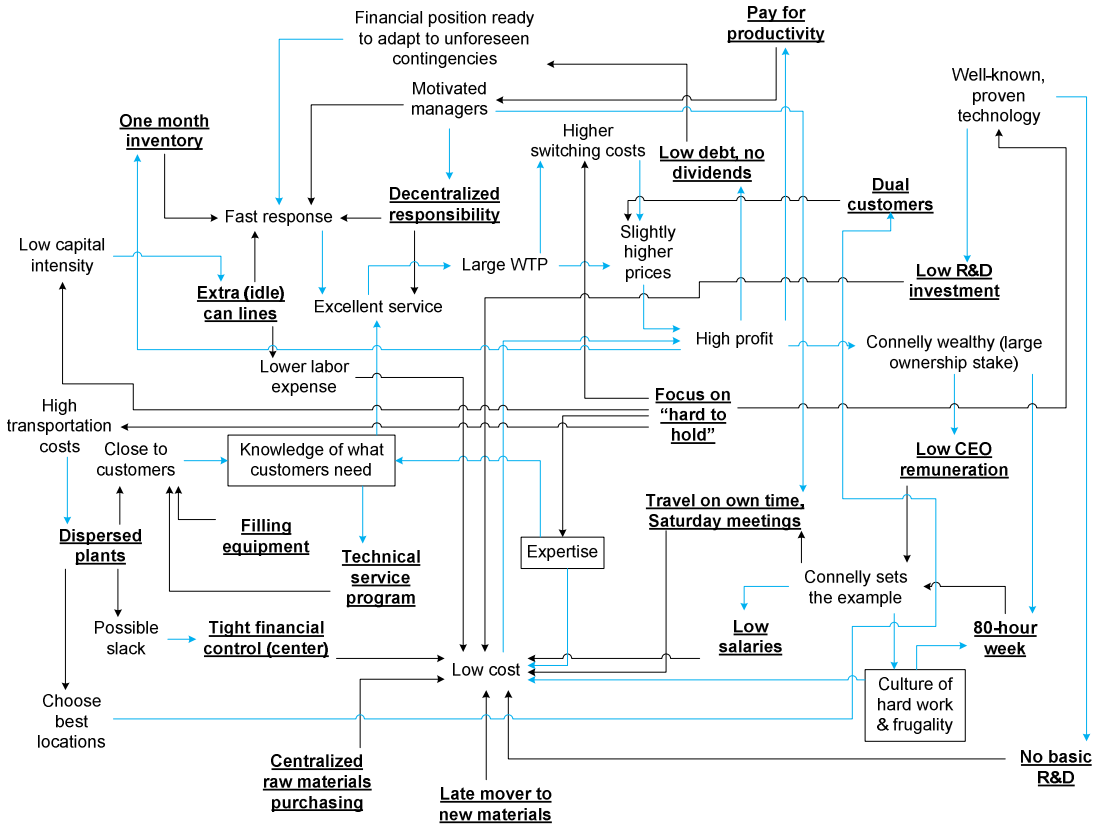
This representation makes explicit the complementarities between different choices made by management at CC&S and helps us understand the firm's sources of competitive advantage. Together with a five-forces analysis, we use the value chain to figure out CC&S's positioning. The value chain, however, tells us little about the dynamics of competitive advantage. A business model representation such as that in **Figure 6** shows the dynamics of competitive advantage.

7 See Stephen Bradley and Sheila Cavanaugh, "Crown Cork & Seal in 1989." Harvard Business School Case 793-035.

Figure 6 Crown Cork & Seal's Business Model Representation



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Virtuous Cycles – The Dynamics of Business Models

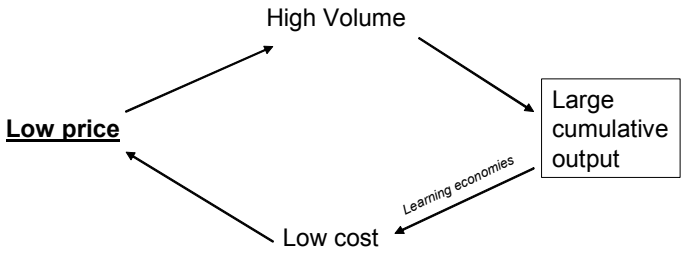
Because the relationship between choices and consequences occurs over time, our concept of a business model is intrinsically dynamic. Moreover, some rigid consequences are *stocks* (such as an installed base or cumulative experience) that are built over time. An understanding of the functioning and evaluation of business models requires explicit consideration of the dynamics between choices and consequences.

One of the most striking features of business models is that their dynamics often generate feedback loops. This happens when, in addition to choices yielding consequences, consequences enable choices. Feedback loops can be of two types: virtuous and vicious cycles. Since these are symmetric, we need to study one type of feedback loop only as the same principles apply to both. We focus on virtuous cycles.

Virtuous cycles are feedback loops that in every iteration strengthen some components of the model. For example, Honda historically set low prices for its motorcycles (a choice), consequences were high volume, high cumulative output which allowed the company to move down the learning curve, and low cost. Low cost (a consequence), in turn, enabled Honda to profitably set low prices (a

choice). As the cycle spun again and again, Honda kept lowering prices because (marginal) cost decreased. See **Figure 7**.

Figure 7 Example of a Virtuous Cycle



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Virtuous cycles are feedback loops that in every iteration strengthen the value of the components of the model. Once they get going, the virtuous cycles take on a life of their own, just as a fast-moving body is hard to stop because of its kinetic energy, well-functioning virtuous cycles cannot easily be brought to a halt either.[8]

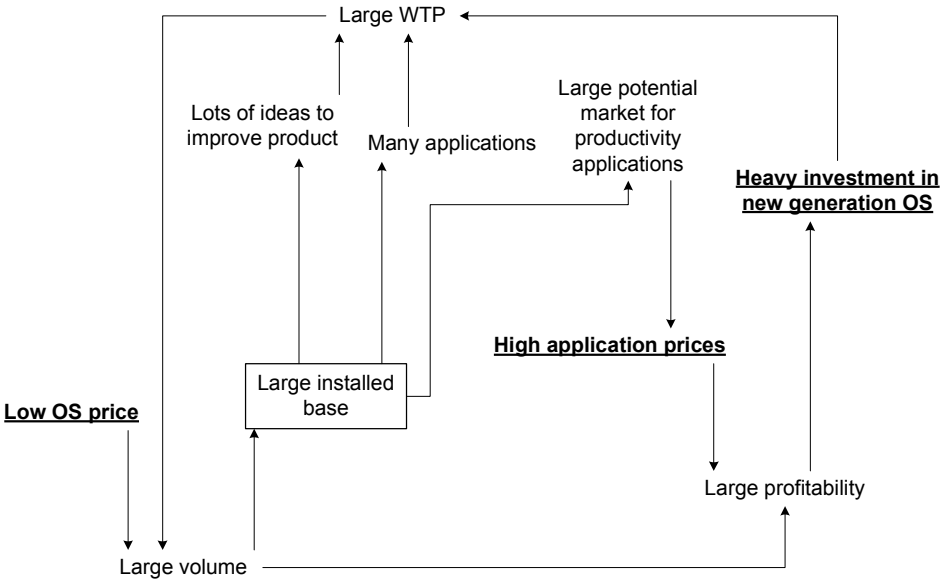
Virtuous cycles are especially desirable when they affect the growth of consequences related to goals sought by the firm. For example, Ryanair's goal is profit maximization through low cost and prices. Interestingly, Ryanair's business model possesses many important virtuous cycles that lead to low cost:

- Low cost virtuous cycle 1: lowest fares → large volume → bargaining power with suppliers → low fix cost → lowest fares → …
- Low cost virtuous cycle 2: lowest fares → large volume → high aircraft utilization → low fixed cost → lowest fares → …
- Low cost virtuous cycle 3: lowest fares → large volume → ancillary businesses develop → fly to secondary airports → low fixed cost → lowest fares → …
- Low cost virtuous cycle 4: lowest fares → attracts young & pleasure travelers → nothing free → low variable cost → lowest fares → …
- Low cost virtuous cycle 5: lowest fares → attracts young & pleasure travelers → all passengers treated equally → low cost → lowest fares → …
- Low cost virtuous cycle 6: lowest fares → attracts young & pleasure travelers → no meals → low variable cost → lowest fares → …

For a second example of powerful virtuous cycles, consider Microsoft's PC operating system and the productivity applications business. **Figure 8** is a representation of that business model (at a tremendously high level of aggregation).

8 Kinetic energy is the energy that a body possesses by virtue of its movement.

Figure 8 Microsoft – PC Operating System and Productivity Applications



Source: Compiled by casewriter.

The representation in **Figure 8** shows several interconnected virtuous cycles in Microsoft's business model (PC operating system and productivity applications):

- Heavy investment in new generation OS → Large WTP → Large volume → Large profitability → Heavy investment in new generation OS → …
- Heavy investment in new generation OS → Large WTP → Large volume → Large installed base → Lots of ideas to improve product → Large WTP → …
- Heavy investment in new generation OS → Large WTP → Large volume → Large installed base → Many applications → Large WTP → …
- Heavy investment in new generation OS → Large WTP → Large volume → Large installed base → Large market for productivity applications → High application prices → Large profitability → Heavy investment in new generation OS → …

A Method to Construct Business Model Representations & One Example

The following is a useful method to build business model representations:

1. Begin with the list of choices made by management. The analyst should approach this step without preconceptions on what the organization's business model might be. Just observe and list as many significant choices as possible. It is helpful to run systematically through the three types of choices: policies, assets, and governance of policies and assets. The value chain or activity maps are helpful classification tools that help identify choices.
2. Look for direct consequences of every choice. That is, look for the first-level implications of the choices identified. For example, if a choice is low prices, the most direct consequence (making use

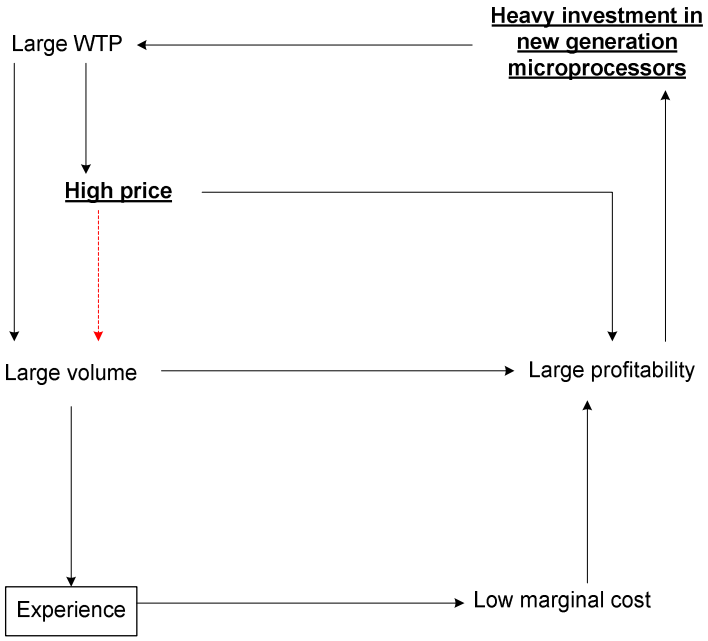
of a theory of a downward-sloping demand function) is large volume. At this stage, the analyst makes use of theories.

3. Go one step further and see whether the consequences identified in Step 2 have significant consequences themselves. For example, if in stage 2 large volume has been identified as a consequence, one likely additional consequence derived from "large volume" is "economies of scale" or "large bargaining power with suppliers."
4. Repeat Step 3 until exhaustion; that is, until no more consequences of consequences can be identified.
5. Identify the consequences that are rigid and draw boxes around them. The distinction between flexible and rigid consequences has significant implications.
6. Beginning in stage 3, check whether the identified consequences enable some of the choices. When this is the case, write an arrow from the consequence to the choice. For example, economies of scale imply low cost (a consequence) and low cost often enables low prices (a choice).
7. Once the process is finished, see whether there are virtuous cycles. Assess how strong the cycles are.
8. Depending on what the analyst plans to use the representation for, she may want to consider to zoom out to see what is the essential logic that allows the model to work well.

The Value Loop

Business model representations become complex quite rapidly. A useful approach to simplifying is the use of aggregation to represent the fundamental logic of value creation and value capture, what we call *the value loop*. The analyst can then see how the other elements in the business model (choices and consequences) reinforce the value loop. The following is an example of a value loop (at a very high level of aggregation) for Intel in microprocessors.

Figure 9 Intel's Value Loop for Microprocessors



Source: Compiled by casewriter.

Notice that while the representation above is at a very high level of aggregation, it only includes two choices –high microprocessor prices and heavy investment in new-generation microprocessors, it shows the fundamental logic of value creation and capture for Intel. Other choices and consequences in Intel's business model help the value loop work better, or spin faster. These include: the marketing campaign "Intel Inside," preferential allocation of chips in short supply, dual sourcing, large investments in manufacturing capacity, investment in complementary technologies through Intel Capital, investment in Intel Architecture Labs, *et cetera*.

An Example: Irizar

To illustrate the notions introduced so far, we now construct a business model representation. Consider Irizar, a highly successful manufacturer of bodies for luxury coaches and member of Mondragón Corporación Cooperativa (MCC), the largest industrial group in Spain. Under the leadership of Mr. Koldo Saratxaga, Irizar emerged from near bankruptcy in 1991 to become "probably now the most efficient coachbuilder in the world," according to *The Economist Intelligence Unit* (2000, page 172). In fact, Irizar's model has received several noteworthy recognitions such as the overall winner of the European Quality Award in 2000 (granted by the European Foundation for Quality Management, EFQM). The company also clinched the title as the best European coach of the year in 2004 with its PB model.[9]

Saratxaga set up a singular business model based on the choices shown in **Table 1**.

9 For a detailed description and analysis of Irizar's business model, see Ramon Casadesus-Masanell and Jordan Mitchell. "Irizar in 2005." Harvard Business School Case 706-424 and Teaching Note 706-446.

Table 1 Irizar's Business Model – Main Choices

Choices	Explanation
1 - Self-managed teams	All work is done by teams that set their own goals, decide how to organize, choose the team leader
2 - No clocking-in and clocking-out	Teams decide when to begin work and when to end. There is an understanding that on average individuals should work 8 hours per day
3 - No hierarchy, no bosses	Flat organizational structure. Three levels only. No bosses, just coordinators
4 - No departments	No formal departments. All work organized through multidisciplinary teams
5 - Open floor plant	Organization of physical space resembles organization. No walls. All in one level only. No assigned parking spaces
6 - No paid overtime	Teams often work overtime, but receive no additional pay
7 - Distributed decision-making	Most members allowed to make important decisions in Irizar's behalf
8 - Obsession about communication	All information available to members. Lots of meetings to inform and discuss business perfomance. Internal publication. General assemblies
9 - Workers' cooperative	Governance structure of organization: a workers' cooperative. Workers own the assets and make financial contribution (are shareholders)
10 - No use of words such as employee, human resource, wage-earner	All individuals treated with absolute respect. All at the same level. No derogatory language
11 - Low-powered (extrinsic) incentives	Pay scale is 1:3, amazingly flat
12 - No firing	After tenure is granted (3 years probation) nobody is ever fired
13 - One product for all markets	One coach model to serve all markets (all continents)
14 - A Constitution ("Strategic Thoughts")	Document entitled "Strategic Thoughts" is a short Constitution detailing what Irizar is all about
15 - No (detailed) strategic plans	No quantitative plans. Lots of thought on qualitative measure of success
16 - Obsession about the future	Large effort to foresee how Irizar fits in the future and what needs to be done today to be ready to compete effectively tomorrow
17 - Treat customers and suppliers symmetrically	Although Irizar is a manufacturing company. It thinks of itself as a "platform" bringing together suppliers and customers. Great effort put into understanding well customers and suppliers needs
18 - No "stars." No "temps"	Never hire star workers nor temporary workers
19 - No unions	Non-unionized
20 - Avoid repetitive tasks	Individuals move from team to team as old teams complete tehir assignments. Always doing varied, new work
21 - Celebrate diversity	Clear understanding that members are all different and cannot be expected to exert the same amount of effort and be equally committed to the project
22 - No evaluations	Nobody is evaluated after tenure
23 - Careful granting of tenure	Three-year probation period. Carefull evaluation of candidates
24 - Look for external recognition (EFQM…)	Great effort put into making the "Irizar Project" (the business model) known through paricipation in total quality management competitions such as EFQM's
25 - Strict control of expnditures	Careful control of finances
26 - Generalists/Not specialists	Look for generalist, smart and motivated individuals who are not afraid of sharing creative ideas
27 - Leadership by example	Top management commitment to Irizar is shown by setting example of ethical behavior
28 - Heavy use of outsourcing	Most repetitive tasks are outsourced
29 - Young workforce	Average age under 30
30 - Located in small town: Ormaiztegi	Small/isolated plant in Spain's Basque Country
31 - High prices	Relatively high prices
32 - Profit sharing	Some level of profit (and losses) sharing to complement wage

Source: Compiled by casewriter.

Notice that these are all concrete choices, not consequences. In particular, we have not included constructs such as "cooperative culture" or "a product for which there is high willingness to pay" because these are not chosen directly, these are consequences of choices, *not* direct choices.[10] (**Exhibit 1** is a representation of Irizar's business model).

The starting point in the representation are the choices. In the case of Irizar, many key choices are related to governance aspects. Choices drive consequences, flexible or rigid (in boxes). Finally, the arrows represent theories. We use black arrows to represent theories of consequences derived from choices and blue arrows to represent theories of choices enabled from consequences. Following the

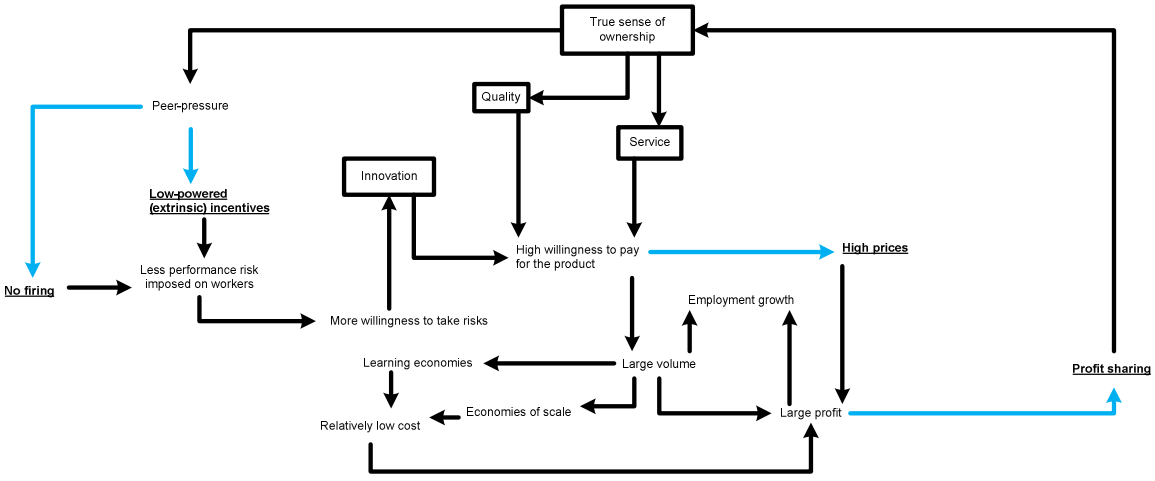
10 Irizar may aspire to create a cooperative culture or a product for which there is high willingness to pay but these are not direct choices, they are consequences from choices.

choices and consequences one is able to identify the fundamental virtuous cycles that allow Irizar to reach its goals.

Notice the important rigid consequences characterizing Irizar's business model: true sense of ownership, hard work culture, innovation, quality, and service. These consequences imply high willingness to pay for Irizar's motor coaches. The company can then charge high prices which, together with the reasonable costs and large volume, result in high profits. The production of superior products and profit sharing with the employees, who are also owners (workers' cooperative), feed back into the sense of ownership that Irizar's policies reinforce. Overall, Irizar is able to manage a value enhancing cycle that creates increasing value to be shared by the owners-employees, allowing growth and the creation of value-added jobs both in the Basque Country and abroad, making Irizar a tremendous success story.

The business model representation of **Exhibit 1** is quite complex. To better understand Irizar's success, one can look at the business model from the distance. **Exhibit 2** shows the same model but identifies the main virtuous cycles and **Figure 10** displays Irizar's value loop, the fundamental logic of value creation and capture looked at from far away.

Figure 10 Irizar's Value Loop



Source: Compiled by casewriter.

In this representation of Irizar's value loop there are four choices only (profit sharing, high prices, low-powered incentives, and no firing policy) but there are many consequences. We should stress that it would have been very difficult to come up with such a representation if all we knew about Irizar were these four choices only. A number of representations are consistent with these four choices. In order for us come up with **Figure 10** based on four choices only, we would have had to be very creative in the use of theories. **Exhibits 1** and **2** allow us to state the theories of **Figure 10**. That is, we can confidently say that the right theories are embedded in **Figure 10** because we know of twenty-eight other important choices in Irizar's business model (as shown in **Table 1**). Theory selection is refined by considering as many important choices as possible.

Irizar's main objective is the sustainability and growth of high value-added jobs in the Basque Country. To do so, Irizar has developed a model that creates large customer value. The key virtuous cycle connects high willingness to pay with relatively low cost generating high profits with activities

related to innovation, service, and quality. This allows Irizar to further its mission. To that fundamental cycle, we add all other choices listed in **Table 1**, with their consequences, to obtain the business model representation in **Exhibit 1**. There are alternative ways to understand Irizar's model but most share the same logic. For instance, one can easily identify the rigid consequences that drive most of its competitive advantage as the sense of ownership, innovation, quality, and service, as well as the resulting organizational culture. These strategic assets should be highlighted in any reasonable representation of Irizar's business model.

Business Model Evaluation – Analysis in Isolation

We have defined a business model as a set of choices and the consequences associated to those choices. Clearly, because every organization makes choices and these choices have consequences, every organization has some business model. The question is then: What constitutes a good business model? How can we tell a good business model from a bad one?

We begin by considering business models, ignoring how they may be affected by those of other players. In other words, we consider an organization's business model in an interaction vacuum and discuss four related desirable features: alignment to goal, reinforcement, virtuousness, and robustness. In another note we move to include other players and provide a framework to evaluate business models in *interaction*. While considering business models in isolation is artificial, the analysis of business model interaction adds enough complexity to justify the approach.

Alignment to goal

Alignment to goal refers to business model choices delivering consequences that move the organization towards achieving its objectives. An organization may possess a terrific business model that works very smoothly. However, if the organization's goal is different from what the business model delivers, then alignment to goal fails and the business model is just not appropriate.

Possible goals include, but are not limited to, profit maximization, a better environment, or a pleasant place to work. For instance, as a workers' cooperative, Irizar is more concerned about the creation of value-added jobs in the Basque Country rather than profit maximization. Likewise, the community of Linux developers (an "organization" that competes against Microsoft's Windows) is more concerned about adding useful new features to the operating system, its robustness, minimization of bugs, and maximization of available complements rather than cost minimization or profit maximization.

Organizations often have multiple goals. The balance between different goals may itself be goal. Notice the trivial fact that, in most cases, goals are consequences, not choices: a firm that tries to maximize profit, for instance, is not choosing profit directly; profits arise endogenously as a function of choices made by the firm.

In many cases, alignment to goal is obvious. Ryanair's goal of high growth and profitability in the airline industry requires low costs. Everything in Ryanair's business model is geared towards delivering low cost. Sometimes the link is less direct. Irizar's goal of creating high added-value jobs in the Basque Country is an indirect consequence of its choices. By creating value with a differentiated product, Irizar can sustain and grow employment but no direct connections exist among Irizar's choices and that overarching goal.

Of course there are organizations that develop business models that fail to satisfy alignment to goal. Xerox Corporation, for example, set up Xerox Labs in the 1970s as instruments for innovation with the objective of developing new, profitable businesses. While Xerox did come up with many breakthrough innovations, it was unable to generate new businesses and capture value from those.

Reinforcement

Reinforcement refers to choices complementing each other well. Reinforcement is closely related to the well-known idea in Strategy of *internal consistency*.[11] It is worth defining clearly what is meant by two choices *complementing* one another. Let A and B be two choices. Let C be all other choices made by the firm. Finally, let o(A, B, C) be a measure or score of how close the organization's goal is satisfied when choices are A, B and C. A larger score means better performance. Obviously, o(.) is a consequence. We say that B complements A if o(A, B, C) – o(0, B, C) > o(A, 0, C) – o(0, 0, C) where 0 stands for the absence of the choice.[12] Our notion of complementarity is local in the sense that it depends on the set C: A and B may be complementary given C = C_1, but not complementary when C=C_2. For example, suppose A is low price and B is heavy advertising. Let o(A, B, C) be market share. A and B are complementary in the sense that the effect of a low price on market share is likely to be larger when there is heavy advertising. Likewise, the effect of heavy advertising on share is stronger when prices are low. In business model representations we sometimes write A ↔ B to denote complementarity. We do this to economize writing. A more elaborate diagram would have the entire chain from every choice to every consequence.

An obvious example of lack of reinforcement would occur if Ryanair decided to provide a level of comfort comparable to that of full-fare carriers such as British Airways. Increasing the level of comfort would require reducing the number of seats in planes, offer food, coffee, baggage transfer, and, perhaps, flying to primary airports. These choices would undermine the low-cost structure. As a consequence, Ryanair would not be able to maintain its low fares; volume would fall, affecting incentives, economies of scale, and reputation.

As a second example, consider high-powered incentives, a choice that results in large effort exertion. A side effect of high-powered incentives is that it often results in less willingness to cooperate and help each other. In organizations with business models that do not rely on cooperation, high-powered incentives will generally be appropriate (at least for a portion of the workforce). However, at Irizar, an organization where all work is done through self-managed teams, high-powered incentives will likely lead to *less* cooperation between team members and/or unhealthy competition between teams.[13] Absence of reinforcement implies the presence of opportunities to improve the business model by discontinuing some choices and adding new ones. Business models develop through time. Early identification of tensions due to inconsistencies is fundamental to manage their development.

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11 See Michael Porter, "Competitive Advantage." Free Press, 1985. See Michael Porter, "What Is Strategy?" Harvard Business Review, 1996.

12 Notice the assumption that objectives are quantifiable. Sometimes objectives are easily quantifiable (at least conceptually) such as value creation or value capture (profit maximization). Quantification is less direct in other cases. For example, one main goal of Greenpeace may be a better environment and this may be hard to measure objectively.

13 As Figure A2 shows, Irizar has other mechanisms such as peer-pressure (a consequence arising from concrete choices such as team work or location in small town) to ensure that effort exertion is high.

Virtuousness

Virtuousness refers to the presence of virtuous cycles (positive feedback loops) that help a business model gain strength over time. In the case of Microsoft, for example, there are two complementary virtuous cycles, the first is related to operating systems and the second to productivity applications. Virtuousness is a dynamic version of reinforcement.

Business models endowed with virtuous cycles that lead to better fulfillment of objectives often imply growth. Growth takes place as rigid consequences directly related to goals become stronger. Examples include positive feedback loops that generate bargaining power (with, say, suppliers) or network effects such as in the case of online auction sites such as eBay. We have already pointed out many of Ryanair's virtuous cycles above. Interestingly, many of the cycles run through low cost and low fares. As a consequence as the cycles spin, Ryanair finds it easier to reach its goal of low cost and high profitability.

Porter cautions managers about the "growth trap," the idea that a fixation for growth without consideration of how it furthers the development of competitive advantage may lead to deterioration of that very advantage.[14] While growth, per se, may be a poor goal to pursue, an implication of virtuous business models is growth. In a sense, growth and virtuousness are indissoluble. The ultimate goal should never be growth but the pursuit of a strategy that generates virtuous cycles that help the organization create and capture increased value over time.

Robustness

Robustness refers to the ability of the business model to sustain its effectiveness over time. Ghemawat (1991) has identified four generic threats to sustainability: imitation, hold up, slack, and substitution. To check for robustness we ask: How well does the business model fend off each threat?[15]

Imitation is the drive of competitors to replicate a firm's successful business model. However damaging imitation may potentially be, there are reasons why business models might be hard to copy. The presence of *rigid consequences* is the first such reason. Rigid consequences such as experience, reputation, culture, or privileged relationships do not change rapidly with the choices that generate them. They take a long time to build. Experience, for instance, requires the cumulation of output which is time-consuming. Therefore, it may be hard for the imitator to reconfigure its choices and build rigid consequences similar to those of the focal firm rapidly enough so as to become a viable competitor.

In the case of Ryanair one can easily see that many of its rigid consequences are difficult to replicate. Reputation for reasonable fares takes time to develop; an installed base of young/pleasure travelers is not easy to build when it must be stolen from such an aggressive incumbent; low cost deriving from airport selection and the fleet or key negotiations with some suppliers are all but easy to develop. Clearly, rigid consequences act as important deterrents to imitation in this case. This barrier to imitation is even stronger when rigid consequences are part of *virtuous cycles* that spin fast.

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14 Michael Porter, "What Is Strategy?" Harvard Business Review, 1996.

15 Even if competition and the context where the business model evolves are relevant to address the question of sustainability, for expositional clarity we discuss robustness here by considering the business model of the focal firm in isolation to those of other players with which it interacts. Another note is devoted to business model interaction.

A second barrier to imitation is reinforcement. A business model with many elements that are highly complementary to each other is generally hard to imitate. A competitor who intends to replicate the model, must copy many choices simultaneously for them to have an effect comparable to what is observed in the focal firm. The reason is that complementarity between A and B depends on C (the other choices made by the organization). Thus, to get the benefit of A and B together, C must also be in place. The third barrier is the mere complexity of the business model. A business model with many interacting elements may be hard to understand and replicate. Causal ambiguity may lead imitators to wrong choices and deficient imitation. Wal*Mart's business model has many important rigid consequences such as a frugal culture, a reputation for every day low prices, or large bargaining power with suppliers. Furthermore, it has many complementary virtuous cycles that reinforce one another. In addition, the model is complex. These features make Wal*Mart's model difficult to imitate.

The second threat to sustainability is ***holdup***. Holdup refers to customers, suppliers, complementors, or other industry participants capturing value created by the focal firm through the exercise of bargaining power. Holdup is especially threatening when the firm has invested in relationship-specific assets which make it hard to walk away or find alternative trading partners.

Protection against holdup can be developed through choices related to the *governance* of assets and activities. Vertical integration and/or contracting with multiple parties (both business model choices) can help avoid dependence that leads to holdup. We should point out, however, that commitments are often important components of strategy. Thus it may be impossible for a firm to have a business model with no specific investments or vulnerability to holdup.

A third generic threat to robustness is ***slack*** or organizational complacency. Protection to slack arises from the right mix of *incentives* and *monitoring* (business model choices). As mentioned above, low-powered incentives may also protect from slack if a culture of hard work (which is a rigid consequence) has been developed through other choices. The case of Irizar illustrates this point very clearly.

The last generic threat identified by Ghemawat is ***substitution***. Substitution refers to decreased value perceived by customers because of the presence of other products. For example, air travel is a substitute for railway travel. The shuttle service between Boston and New York reduces willingness to pay and demand for Amtrak services between these two cities. As technologies, customer needs, or regulatory barriers evolve, unforeseeable substitutes emerge. Substitutes are often hard to identify.

To deal well with substitution threats, successful business models often have "competitive sensors" that alert their presence. Microsoft is perhaps the clearest example or an organization that is especially good at detecting (and responding) to substitution threats. When a substitute emerges that is superior, it may be necessary to implement changes in the focal firm's business model to deal with it. Business model plasticity is thus desirable. Plasticity requires the absence of rigid consequences which, as we discussed above, are desirable to deal with the imitation threat. Barriers to imitation may become important impediments to effectively respond to substitution, and *vice versa*.

Wal*Mart is an interesting case of fighting substitution, a fundamental threat in retailing as different formats (specialty store, department store, discount store…) appear to have dominated the industry at different times. Wal*Mart has sensed new ideas well, copied them fast, and perfected them. It adopted the warehouse club format in the early 1980s with Sam's Clubs, a concept created by Sol Price a few years earlier with Price Club. Sam Walton moved later to super-centers, a concept

invented in Europe; in the meantime Wal*Mart tested several alternative formats that were eventually discontinued.[16]

Zara provides an interesting counter-example to the idea that the presence of rigid consequences implies a business model is ill-suited to respond to the substitution threat.[17] One important rigid consequence in Zara's business model is the organization's ability to learn customers' preferences and respond to them in real time by coming up with new designs that are manufactured immediately. This rigid consequence allows Zara to sense and respond and thus deal with substitute products better than traditional clothing chains such as The Gap or Benetton. Notice that this consequence helps Zara respond to product substitution threats, but not necessarily to business model substitution, a topic that we cover in a separate note.

Business Model Effectiveness

The *effectiveness* of a business model is measured by the extent to which it satisfies the four evaluation criteria outlined above: alignment to goal, reinforcement, virtuousness, and robustness. To end this note we discuss some features of Ryanair's business model that deliver effectiveness. First, reinforcement and virtuousness are satisfied as there are many virtuous cycles and no vicious cycles. Because there are redundant virtuous cycles, if any one cycle is threatened by competitors' actions, there are many other cycles that ensure that profitability is protected. Second, many of the virtuous cycles pass through "low fares," "large volume," and "low cost," three elements directly related to profitability which is Ryanair's main goal.

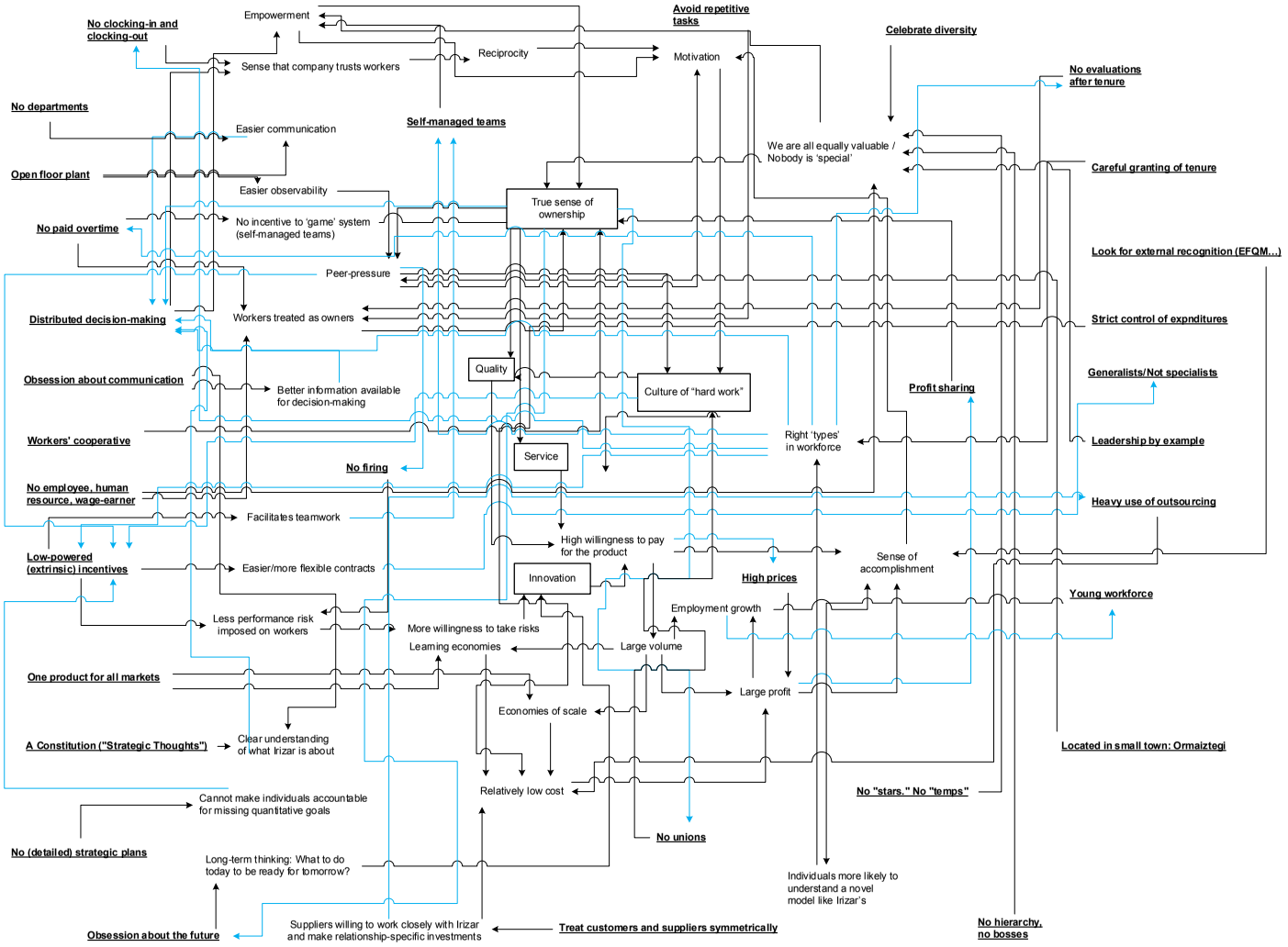
Third, there are many rigid consequences making imitation difficult. A virtuous cycle made up of flexible consequences can more easily be disrupted than one with rigidities. The use of secondary airports, for example, promotes the development of ancillary services such as transportation to the city (since Ryanair's arrival to Girona – a city some 100 kms away from Barcelona – a bus service from BCN city center to the airport that coordinates with Ryanair's departures and arrivals priced at just €11 has developed). A simple lowering of competitors' fares does not make these ancillary services disappear. The word of mouth advertising that takes place because of the ridiculously low fares that Ryanair has does not vanish immediately if competitors also lower their prices.

A significant holdup problem may arise in airlines if pilots get together to request higher pay. Ryanair's choices, such as avoiding unions or having high powered incentives, and consequences, such as the culture of high productivity that it has developed, makes hold up and slack less likely to Ryanair than to traditional flag-carriers, adding to robustness. Finally, while substitution is possible by high speed trains connecting cities served by Ryanair, the fact that its fares are extremely low together with having few delays (a consequence of choices such as flying to secondary airports or having a standardized fleet of 737s) make substitution less harmful than to full-fare airlines serving similar routes.

16 See Stephen Bradley and Pankaj Ghemawat, "Wal*Mart Stores, Inc." Harvard Business School Case 794-024.

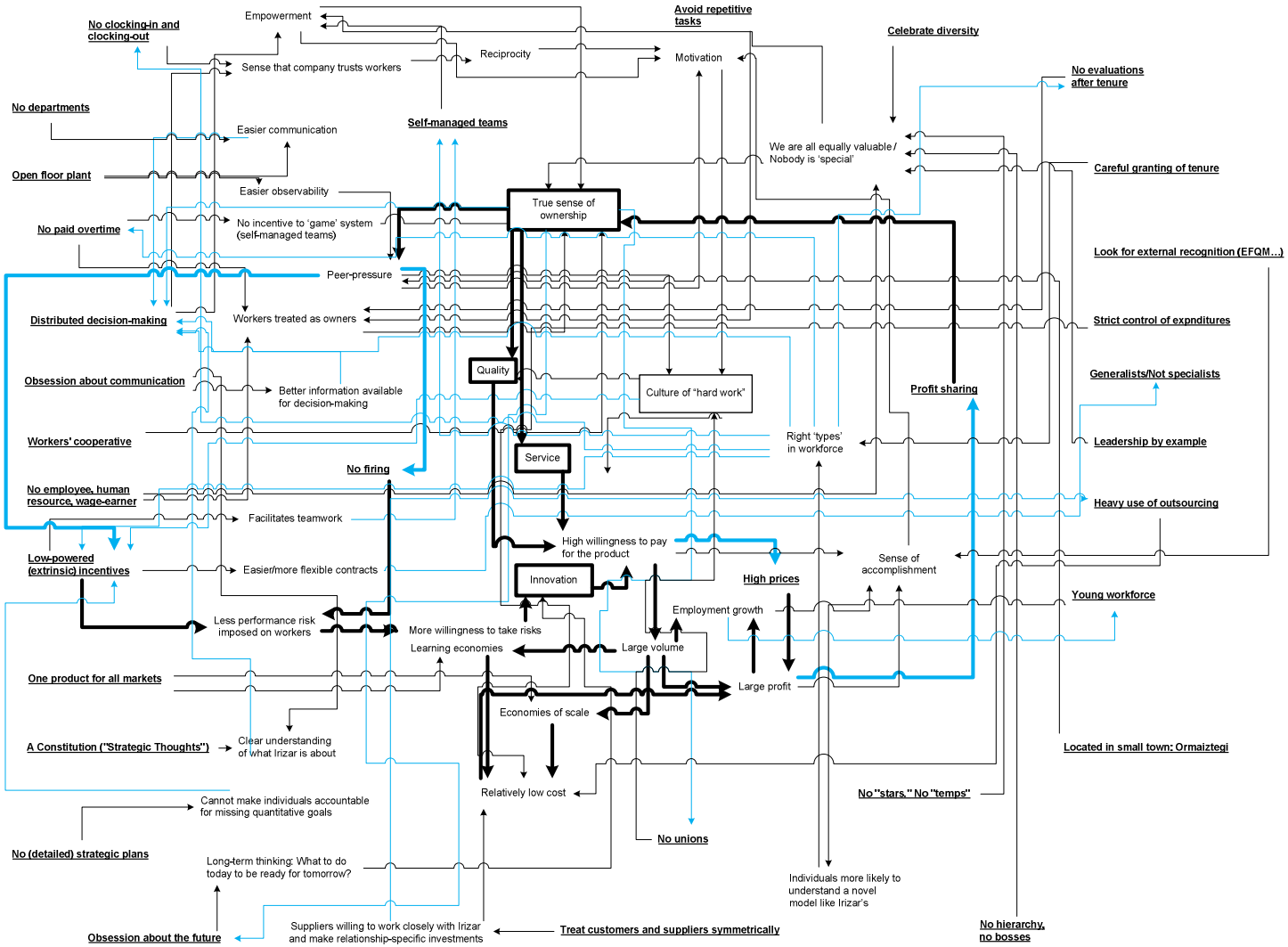
17 For a detailed description of Zara's business model, see Pankaj Ghemawat and Jose Luis Nueno, "ZARA: Fast Fashion." Harvard Business School Case 703-497.

Exhibit 1 Irizar's Business Model



Source: Compiled by casewriter.

Exhibit 2 Irizar's Business Model - Main Virtuous Cycle



Source: Compiled by casewriter.