



Delft University of Technology

Business Models

Presidio Booster

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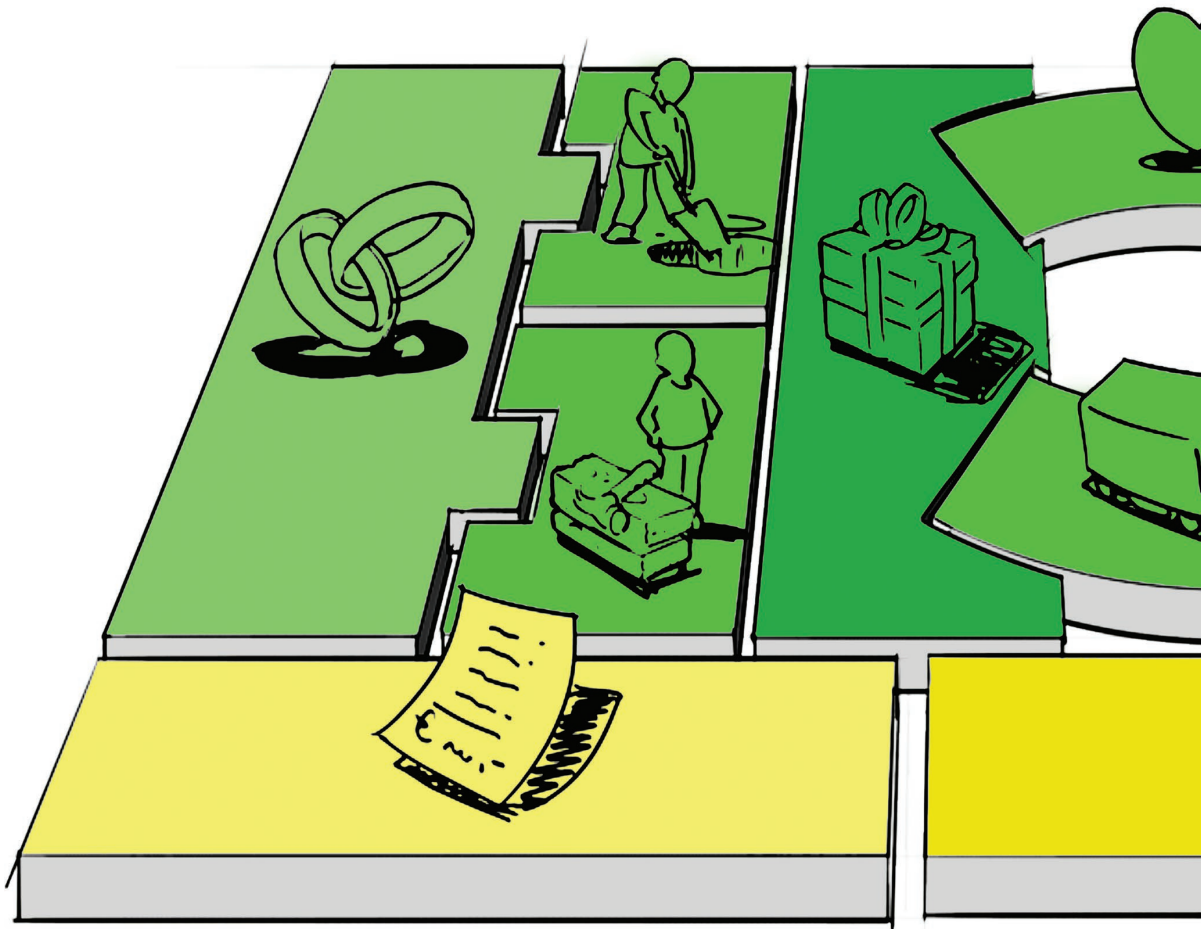
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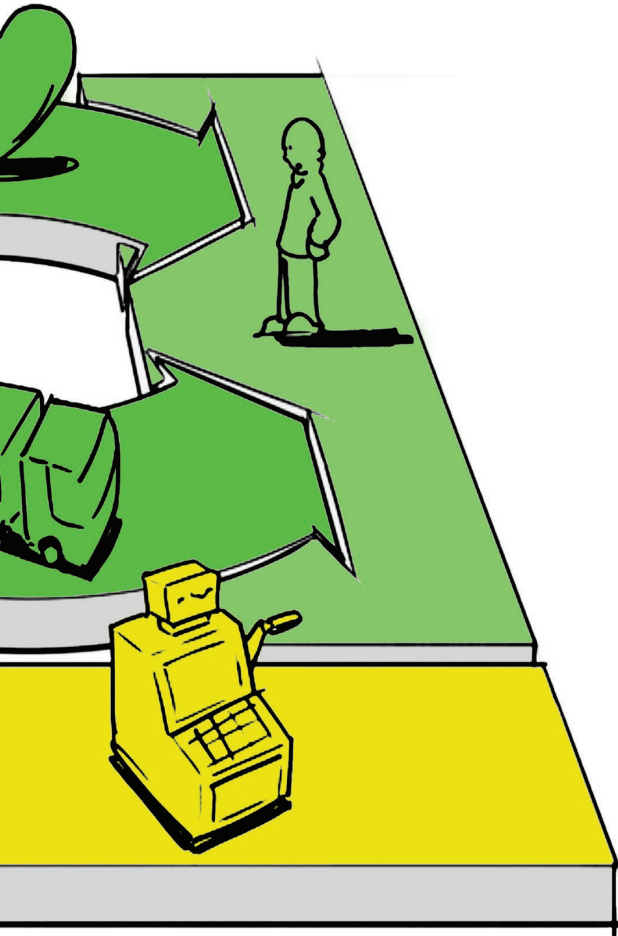
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Source: based on Osterwalder & Pigneur (2010).

CHAPTER 22

Business Models

Presidio Booster

*Jeremy Faludi,
Conny Bakker, and
Ruud Balkenende*

Goals

- Recognize sustainable business opportunities and barriers for companies
- Explain why sustainable business models are needed
- Illustrate examples of a business model, a sustainable business model, and a circular business model
- Analyze existing businesses using Presidio's Sustainability Booster tool
- Ideate new businesses ideas using Presidio's Sustainability Booster tool

Why It Matters

Sustainable business models go far beyond product service systems. In addition, some circular PSS and sustainable design strategies rely on other business factors like marketing and partners. For example, sustainable material choices require suppliers who sell those materials at affordable rates; designing affordable products must not compromise factory worker pay; etc. Finally, sustainable business models can help address social sustainability. Thus, it's important to look at all aspects of business models to see where social and environmental improvements can be made. This is critical for entrepreneurs, and even if you “only” do product engineering, it's still valuable to understand how your work depends on these factors, so you can push for the business practices you need to support your designs. You can even help the business managers discover what's possible.

Summary

- The Business Model Canvas (BMC) is a fundamental tool for both understanding and creating or changing businesses. It diagrams costs, revenues, your customers, suppliers, and more, so you can make sure they all align.
- Normal BMCs only consider economic profit, but the Presidio Sustainability Booster adds environmental and social sustainability considerations for every part of the BMC.
- The Presidio Sustainability Booster is a qualitative and creative tool; it does not quantify whether one business model is better than another.
- The Presidio Sustainability Booster can help you assess an existing business, and/or help you generate ideas for improving a business.

22.1 Business Model Canvas

A business model is not a product, or service, or company, or industry; it is a way for a business to create and capture value. One company can have many business models for different physical products, digital systems, personal services, or anything else. The models describe how the company intends to make money from each offering. The most widely used tool for understanding existing business models, communicating how they work, and designing new ones is the business model canvas (BMC). As described by Osterwalder and Pigneur (2010), the BMC lays out all the major parts of a business, with their locations on the canvas implying the relationships between them. See Figure 22.1.

In Figure 22.1, the center of a business model is the “value proposition”—usually a product or service that people will pay money for. You make your value proposition using “key resources,” like raw materials and a factory, and by doing “key activities,” like manufacturing. These resources and activities depend on “key partners,” your supply chain. You pay “costs” to those partners for their services, products, or materials, shown in the bottom left corner. Your users and/or the people paying you are your “customers.” You get your product or service to the user through distribution “channels” (e.g., retail stores or online shops). Your customer learns about your value proposition through “customer relationships” (e.g., marketing and advertising). The money customers pay you in exchange for the value you provide them is “revenue,” shown in the bottom right corner. If your revenue exceeds your costs, you profit. That's the canvas in a nutshell.

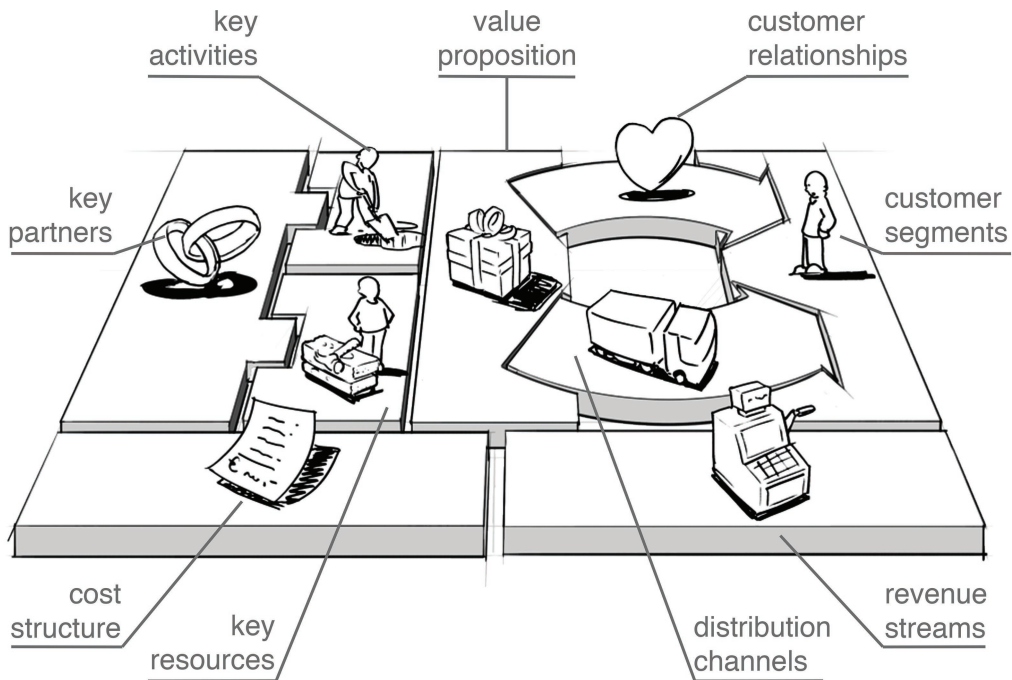


Figure 22.1 Business Model Canvas overview

Source: Osterwalder & Pigneur (2010).

Once the business is running, time flows from left to right on the canvas. But if we apply human-centered design to improve a business model or invent a new one, we start with your user/customer. You then decide what value proposition you can offer them, and fill out the rest of the canvas from there.

You don't need to start a new company to have a new business model. You can have a new model for any product or service in an existing company, and you don't even need a for-profit company, these tools can also be used for nonprofit organizations. You can even pair nonprofits and for-profits, like the Biomimicry Institute (an educational nonprofit) and Biomimicry 3.8 (their for-profit consulting arm). As shown above, the BMC simply lets you plan how costs and

revenues balance, and all the processes or connections that support the costs and revenues to offer the value proposition to target users.

The BMC also illustrates how your company connects with outside actors through "customers" and "key partners." These are not just users and suppliers of parts or materials, but include shipping, retail, and could include repairers, recyclers, reverse logistics to collect products for remanufacturing, etc. If your product or service is digital, they include the other hardware and software your app runs on (e.g., internet browsers and cellular data networks). Partners can also include government regulators or industry consortia that could be opportunities for activism to drive sustainability standards.

22.2 Sustainable Business Models

Business models are important for designers to understand because they should support your product or service design rather than undermine it, as described in Chapter 21. They can help your company transition away from selling more stuff while remaining profitable. Research has shown that the two main factors that internally drive companies to sustainability are leadership and the business case (Lozano, 2015).

Filling out a BMC can help you discover where sustainability must be integrated into daily operations (e.g., supply chain management, labor practices, etc.) or company governance structures that drive long-term benefit to many stakeholders rather than only short-term profit to shareholders. Other stakeholders include workers in the company and supply chain, communities around factories and mines and waste disposal areas, plants and animals in those areas, and more. “Selection of stakeholders must consider moral justice for potential human and nonhuman stakeholders” (Upward & Jones, 2015).

The BMC also highlights external factors that can help drive sustainability, such as which materials are available as key resources, or which government agencies or communities could be key partners. Business models can also address other aspects of sustainability that physical and digital product design can't, such as social justice in worker wages, community support, or system-level interventions like partnerships across industries.

There are several BMC overlays for sustainability, including the “Flourishing Enterprise Innovation Toolkit” (Upward, 2016), the “Triple Layer Business Model Canvas” (Joyce & Paquin, 2016), and others. They

all help companies recognize business opportunities and barriers in environmental and social responsibility. They are not about maximizing profits at any cost, they are about harmonizing profits with your company's impacts on people and the planet.

22.3 Limitations of Business Models

Critics of the Circular Economy, Green Growth, and other movements for sustainable business have argued that business models cannot solve everything. As degrowth proponents argue, “economic growth without the destruction of nature is an illusion” (Schmelzer et al., 2022). Sustainability systems must also go beyond for-profit businesses to include government, nonprofit, and other community programs.

However, even in these cases, sustainable BMC tools may help non-business entities plan services in economically viable ways. All institutions have costs, value offerings, users, partners, etc. BMC tools can help understand where these align or misalign, where costs and revenues come from and why, and can help innovate all of these.

22.4 The Presidio Sustainability Booster

The Presidio Business School's “Business Sustainability Booster” (Willard et al., 2017), available online at <https://www.presidio.edu/blog/business-sustainability-booster>, is an especially good BMC overlay because it is relatively fast and simple, built directly on the BMC for ease of adoption, but still enables thorough examination of the whole business model and creates fertile ground for innovative positive solutions. See Figure 22.2.









<p>Key Partners </p> <ul style="list-style-type: none"> › Competitors › Vendors / Suppliers › Employees › NGO's › Communities › Government / Regulators › Owners / Investors / Grantors › Industry Transformation › Organizational Structure 	<p>Key Activities </p> <ul style="list-style-type: none"> › Product/Service Design › Processes › Facilities 	<p>Value Propositions </p> <ul style="list-style-type: none"> › Broad Benefit › Mindful Impact › Customer Behavior › Branding Sustainability 	<p>Customer Relationships </p> <ul style="list-style-type: none"> › Honoring Customers › Transparency › Emerging Needs 	<p>Customer Segments </p> <ul style="list-style-type: none"> › Importance › Access
<p>Cost Structure</p> <ul style="list-style-type: none"> › Return on Investment › Externalities 	<p>Revenue Streams </p> <ul style="list-style-type: none"> › Sources of Revenue › Distribution of Revenue 			

Figure 22.2 The Presidio Sustainability Booster layout

Source: Willard et al. (2017).

As Figure 22.2 shows, the Sustainability Booster is the normal BMC with added questions in each BMC box. It doesn't tell you what to do, it just adds the prompts to help you innovate. Because each box of the BMC is different, there are different questions in each box. Each prompt has a one-page "card" describing why it's important and listing specific questions to brainstorm, as shown in Figure 22.3.

This tool is exploratory—it won't tell you what's right or wrong or better or worse.

To make such judgments, combine the sustainability booster with other tools or metrics such as the UN SDG targets, LCA, or sustainability certifications. But it can help you thoroughly assess an existing business using your own judgment, or it can help you brainstorm many ideas to boost the sustainability of your business, both environmentally and socially aligning the company operations with your ethical values. Such explorations are crucial to making products or services that change the world.

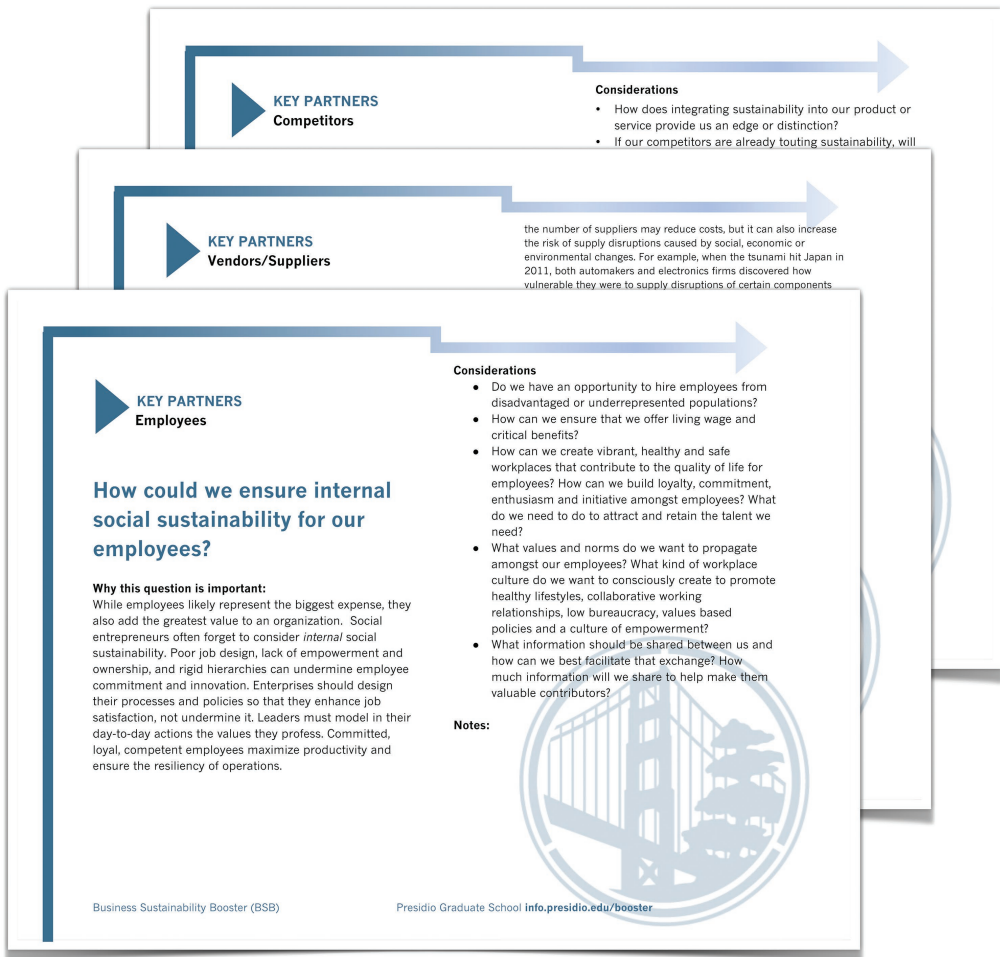


Figure 22.3 Prompting question "cards" in the Sustainability Booster

Source: Willard et al. (2017).

The Presidio Booster recommends circular economy considerations, but does not recommend specific product service systems. It offers abstract prompts that can operate on the higher-level system. For example, for circular material sourcing, it provides obvious suggestions like the “materials” prompt in the “Key Resources” box suggesting material reuse and low-impact materials, but it goes beyond that to create the business conditions to drive such material availability. In the “Key Partners” box, the “Vendors/Suppliers” and “Industry Transformation” prompts suggest working with supply chain vendors to increase the availability of better materials or components, and improve their production practices, share knowledge to co-create better options, and more. These and the “Governments/Regulators” and “Non-governmental Organizations” prompts suggest driving better policy across the whole industry. The “Industry Transformation” card

even suggests working with competitors to drive such material availability or policy. Such larger systemic interventions don't replace product-level tools and strategies for circular design, but make them more viable by driving the availability of circular-sourced components.

22.5 Using the Sustainability Booster

For an example of how this works to analyze an existing business or start a new business, imagine your company makes a cargo-carrying kick scooter that fits on trains or buses.

In the Sustainability Booster, we'll start with the customer. What are your user's needs, pain points, and desires?

We have a profile on your user, see Figure 22.4 for details: she drives all the way

A 40-mile drive is caused by a one-mile gap at each end.

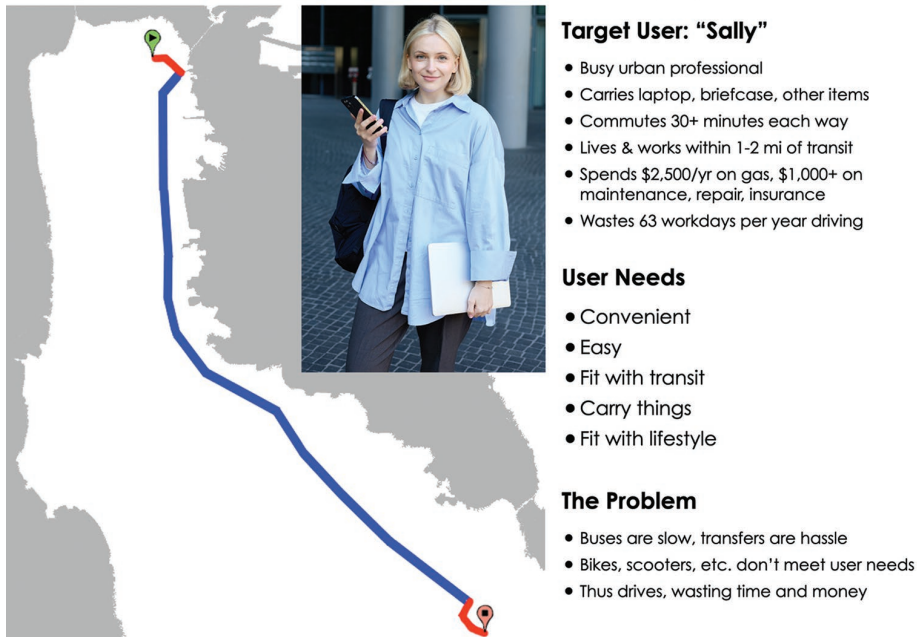


Figure 22.4 User profile

Source: Freepik.com.

from San Francisco to Silicon Valley because the train stations aren't conveniently located within a kilometer of her home or workplace, and there is no easy connection from those stations to her trip's beginning and end. Thus, a 60-kilometer drive is caused by a 1-kilometer gap at both ends.

In the business model canvas "Customer Segments" box, the Presidio Booster has two questions: "Importance" and "Access" (see Figure 22.2). What are they? If you look up each page in the Presidio Booster PDF (Willard et al., 2017), the page on "Importance" says it's how much sustainability matters to your users. It's important because you need to know how to market to them. What can you brainstorm here? Let's assume your users don't care about sustainability, so that won't sell; that means you brainstorm on whatever value would resonate best for them. Maybe they value convenience: if so, show how much productive time they can recover by working on the train versus driving, see Figure 22.5.

The other Presidio Booster question for "Customer Segments" is "Access." The page

Recovers Useless Commute Time

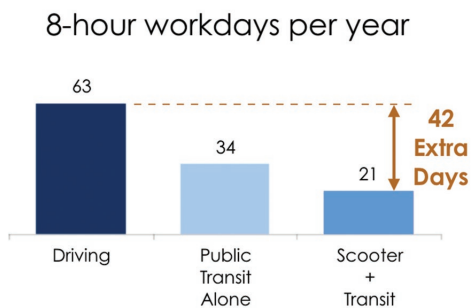


Figure 22.5 Data on how much time is recovered

on Access says it's how you can provide more people with access to your product. It's important because some people lack the money or other resources (e.g., language or technology) for durable high-quality goods. What can you brainstorm here? For your scooter, you might decide Access is already good, no further action needed, since a scooter is much less expensive than driving a car (see Figure 22.6). However, the initial purchase price may still be expensive for some people, especially those in disadvantaged communities (see Chapter 25). So, you could brainstorm ways to be accessible to even more people.

A change could be moving from selling scooters to running a scooter-share network (Figure 22.7), costing only a dollar or two per trip. This might radically expand who can afford your product, and earn you more revenue at the same time.

For the BMC "Value Proposition" box in Figure 22.2, there are four prompts. The

Saves Money

Commute cost per year

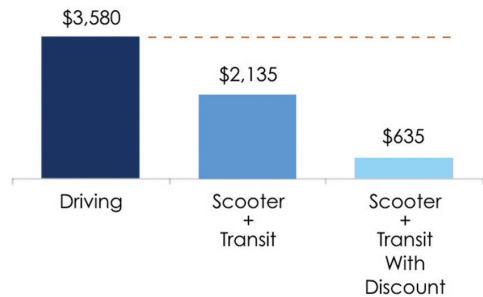


Figure 22.6 Commute costs per year depending on the transport



Figure 22.7 Scooter rental service



Figure 22.8 Irresponsible scooter handling

“Mindful Impact” one is about considering the unintended negative consequences of your business model. For example, if you change from selling scooters to a scooter share service, what happens when people leave their scooters scattered irresponsibly (Figure 22.8)? Many scooter share companies have had problems like this, with

neighborhood residents feeling like their streets are overrun with outsiders’ vehicles. How can you redesign your system so users don’t do that?

Finally, in the BMC “Revenue Streams” box, there are two prompts; let’s look at “Distribution of Revenue.” You could

choose to structure your company as a worker-owned cooperative, where profits are distributed back to the workers because they own the company, and the largest ratio of pay between the lowest paid worker and the highest paid executive is set at a low ratio like 9:1. This might sound untenable, but in the Basque region of Spain, there are over 250 companies employing over 75,000 people organized in this way through the Mondragón corporation (Whyte & Whyte, 2014). They are the world’s largest cooperative business.

All of the BMC boxes can be sources of sustainable innovation, but the “key partners” box also deserves special attention. These may be for your individual product’s sustainability, for example., finding repairers, recyclers, or reverse logistics to bring products back to you for remanufacturing. They can also be for activism driving sustainability beyond just your company

to your whole industry, such as creating government regulations, or standards set by industry consortia. Sometimes external action is even necessary for sustainability action within your company, for example, when a greener process is more expensive and your company will not do it unless regulators mandate it across your whole industry.

Key partners can also form collective purchasing agreements. That’s where one company does not buy enough of a material to make it worthwhile for a supplier to switch their factory over to making a greener material, but several companies coming together do, so they formally guarantee the supplier they’ll collectively purchase a certain amount.

To recap how the Presidio Sustainability Booster works: you keep going through the rest of the BMC as described above, to

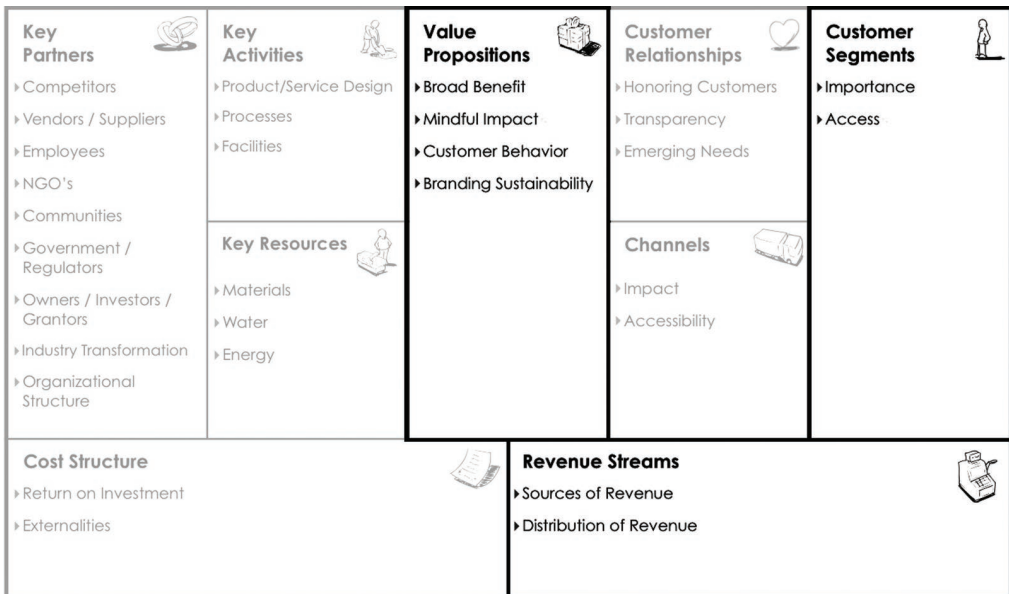


Figure 22.9 Highlighted focus areas for designers

either assess how sustainable an existing business is, or brainstorm on how your new business could be. When brainstorming, you can choose what prompts to brainstorm solutions to, versus what to ignore or consider already done. Focus especially on Customer Segments, Revenue Streams, and Value Propositions, see the highlighted fields

in Figure 22.9. Those are the places where product and digital design can contribute the most, and those boxes can lead you to circular economy product service systems or more creative and novel business models. Keep in mind that changes anywhere on the canvas can ripple out to the rest of the canvas.

Resources and References

Resources for Further Study

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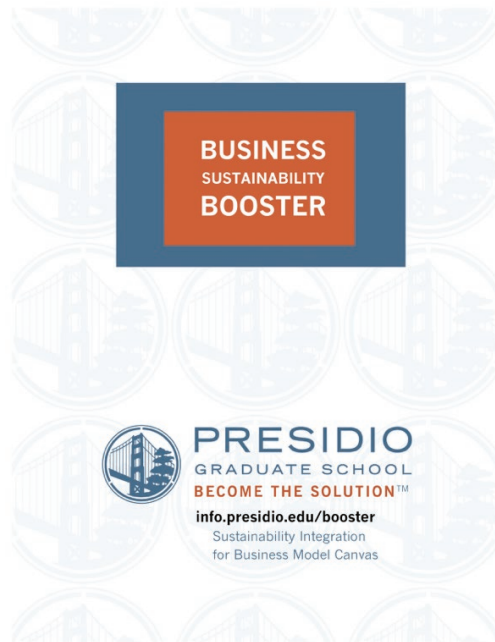
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How to Apply #22: Apply Presidio Sustainability Booster to a Business Model Redesign

Time Estimate: 2–4 Hours

In this exercise, you will brainstorm ways to improve sustainability strategies of a product/service and its business model, using the Presidio business model canvas sustainability booster.










You will need the Presidio Business Sustainability Booster document. The tool is available for free download in the official Presidio Graduate School website as a PDF. Take a first look at introduction and instructions on pages 1–6.

STEP 0 (Optional): Analyze Current Product/Service and Your Company's Business Model

Time Estimate: 10–40 Minutes

Analyze your current product/service and company, according to the normal Business Model Canvas (BMC):

- Above the BMC table, name the chosen product or service, and include a picture of it.
- Fill out every box in the BMC table with a few words on the current business model: Who is the main user (the “customer segment”)? What is the main value proposition? What is the main revenue stream? Etc. If your product addresses a highly segmented market, you may divide up the boxes for different target users, or make multiple copies of the table.

Key Partners  <ul style="list-style-type: none"> › Competitors › Vendors / Suppliers › Employees › NGO's › Communities › Government / Regulators › Owners / Investors / Grantors › Industry Transformation › Organizational Structure 	Key Activities  <ul style="list-style-type: none"> › Product/Service Design › Processes › Facilities Key Resources  <ul style="list-style-type: none"> › Materials › Water › Energy 	Value Propositions  <ul style="list-style-type: none"> › Broad Benefit › Mindful Impact › Customer Behavior › Branding Sustainability 	Customer Relationships  <ul style="list-style-type: none"> › Honoring Customers › Transparency › Emerging Needs Channels  <ul style="list-style-type: none"> › Impact › Accessibility 	Customer Segments  <ul style="list-style-type: none"> › Importance › Access
Cost Structure <ul style="list-style-type: none"> › Return on Investment › Externalities 		Revenue Streams <ul style="list-style-type: none"> › Sources of Revenue › Distribution of Revenue 		

STEP 1: Select Presidio Prompts to Brainstorm On

Time Estimate: 1–10 Minutes

Look at the Presidio Sustainability Booster's business model canvas table, and read the prompts for brainstorming listed in each box. If there are any you don't understand, flip to the page describing that prompt to quickly familiarize yourself with it.

Select three prompts to brainstorm on. For example, you might consider the following prompts below:

- Customer Segments > Access
- Key Partners > Vendors/Suppliers
- Key Partners > Industry Transformation

STEP 2: Brainstorm on a Prompt

Time Estimate: 10–30 Minutes

In the Presidio Sustainability Booster text, flip to the page describing the “card” for the prompt you plan to brainstorm on. For example, the Customer Segments > Access card, prompting you to think about increasing accessibility for customers. Read through the card to understand the topic and its important considerations.

Brainstorm a minimum of 10+ ideas for this prompt (20 or 30 is better). And remember the brainstorming rules! Don't judge ideas, but also stay focused on your topic, be visual, have many ideas, etc. (Being specific is one easy way to have many ideas—listing many possible implementation details.)

Be sure to brainstorm several ideas for each “consideration” bullet point on the card. For example, with Customer Segments > Access:

- Minimizing specific barriers for buying (e.g., language, culture, technology)
- Changing revenue models to fit those most in need
- Diverting costs from end users
- Using product service systems to make it more affordable

STEP 3: Brainstorm on Other Prompts

Time Estimate: 10–30 Minutes

Repeat the previous step for all the prompts you want to brainstorm, always remembering the rules of brainstorming. For a thorough exercise (several hours), brainstorm every prompt in every box in the table. For a minimal exercise, brainstorm at least three prompts from three different boxes, to break out of your normal domain of consideration and get creative.

STEP 4: Choose Winning Idea(s) from All Three Brainstorms

Time Estimate: 10–40 Minutes

Take your brainstormed lists of all ideas for every prompt, and narrow them down to the best idea(s) to move forward with. To do this, balance your sustainability and business priorities (if you have your Whole System Mapping priorities, use those). Also consider what would be most easily implemented, and best fit with company/brand culture. To decide, you might use dot voting, a decision matrix, or just discussion. You might combine ideas, or have multiple winners, but be realistic about the limitations of how much you can implement. You might narrow it down to one winner per prompt before choosing an overall winner (or few winners). Although changes anywhere on the canvas influence the rest of the canvas so try to think how your winning idea(s) affects the others (which ideas reinforce others to boost the overall sustainability strategy further).

Finish with one idea (or set of ideas) to move forward with.

STEP 5: Communicate the Value of the Winning Idea(s)

Time Estimate: 10–40 Minutes

Write a concise description of the winning idea(s), and sketch an illustration of it. The description should include which BMC box(es) and Presidio prompt(s) are involved, and what the new solution is, in an engaging way that would inspire adoption by business executives. The sketch should illustrate the solution and its effect on the user, company, or larger system.

Checklist for Self-Assessment

To score your success on this exercise, see if you...

- Chose three or more Presidio prompts to brainstorm on.*
- Generated 10+ new ideas for each prompt (ideally 30+).*
- Chose winning idea(s) to move forward with, based on sustainability and business priorities.*
- Described the winning idea(s), including the BMC box and prompt, to sell it to business executives.*
- Sketched an illustration of the winning idea(s) to support the description.*

