Toolkit
Using Inventions in the Public Domain

Tool 8
Business Model Canvas

WIPO

Tool 8/ Business Model Canvas

In this document we will explain how to develop a business model canvas (BMC). The BMC provides an outline of how the product or service, as a standalone revenue center, makes money or, in the case of a nonprofit entity, meets the designated mission in a financially sustainable way. It is like a business plan for a one product or service company. In new product development (NPD) it can be used to orient the design team to the context in which the product or service will be sold (or provided) and deployed.

What is the Business Model Canvas tool?

The BMC tool can be used at any stage during the NPD process to help you visualize your product or service from a business perspective, evaluate whether it seems to be a viable revenue and profit generator, and confirm there is a viable business opportunity for the product or service being considered or developed. The BMC tool guides you through a process for gathering information developed using other tools from the Toolkit, and arranging the information in nine boxes that represent different fundamental business components which, taken together, provide a one-page "snapshot" of the business prospects for the product or service you are developing. The information in a BMC can be used as an outline for drafting a formal business plan document with financial projections and an action roadmap for one to three years into the future.

The BMC is discussed in the WIPO publication *Using Inventions in the Public Domain: A Guide for Inventors and Entrepreneurs* (2020), in section 7 of Module III, "Drafting a business model canvas." This publication summarizes how the BMC works as follows (page 49): "A business model canvas focuses on the synergy between the nine components listed below:

- **Key partners** who contribute to making your business a success.
- **Key activities** that are carried out to implement the business model and create value.
- **Key resources** that are needed to create value and are integral to the business model.
- **Value proposition** that is being offered as products which create value for the customers.
- **Customer relationships** that are key in generating demand.
- **Channels** of distribution that are used to take products to customers/end-users.
- **Customer segments** that comprise buyers that can be categorized.
- **Cost structure** that results from understanding the business model.
- **Revenue streams** that distinguish and define pricing models that help in value capture."

The BMC tool helps you identify the fundamental components of a successful business model for your NPD project. Customer-focused components are: customer segments, value proposition, customer relationships, channels and revenue streams. Components

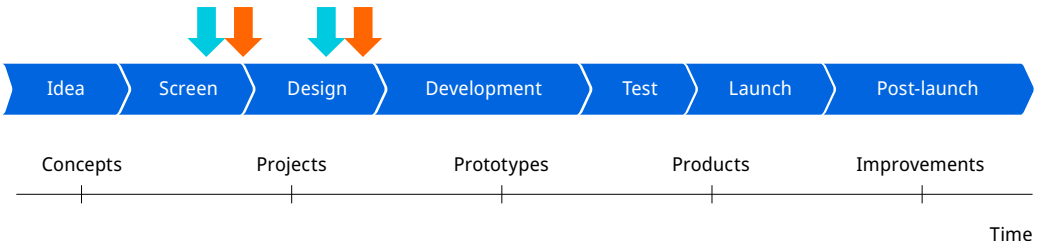
focused on what is necessary to build customer relations and generate revenues by delivering the value proposition are: key activities, key resources, key partners and cost structure.

Here, we show how to use the BMC tool at the beginning of the Design stage (see Figure 1). However, because a BMC can be generated using existing information that only needs to be updated, it can be used at any stage of the NPD process when you want to check the viability of your business model.

When used at the beginning of the Design stage, the BMC summarizes findings from prior stages and gate reviews in your NPD project. In the Idea and Screen stages, you used the following tools from the Toolkit: Project Charter, Action Plan, Voice of the Customer, Competitive Advantage, Freedom to Operate, Value Chain and SWOT Analysis. The information and insights you gained from using these tools will be used as inputs for the preliminary BMC tool. As a design is developed, the BMC should be revised as necessary to ensure it is aligned with the final design.

As you prepare to move into the Development stage, where you enter the depths of the "Valley of Death," a completed BMC helps you remain focused. The term "Valley of Death" reflects the fact that in the Development stage, costs of NPD start to rise rapidly yet risk remains relatively high until the technical viability of the product or service has been validated in the Test stage. The BMC provides a map so that once the formal design project is initiated, design and development remain focused on meeting customer and end-user needs, attaining competitive advantage, and generating an attractive gross profit. (Gross profit is net revenues minus the cost of goods sold. In a nonprofit institution, gross profit is sometimes called gross net assets. We will discuss these concepts further in Tool 15: Net Present Value.)

Figure 1: **Stages and gates. The blue arrow shows the BMC tool being used before entering the Design stage, and the orange arrow indicates that the BMC should be completed as early as possible before making decisions about the design. A second BMC should be done near the end of the Design stage, as indicated by the second set of arrows.**



Next, we will discuss how to use the BMC tool, and how to interpret and apply what you learn from a completed BMC. We will also discuss how information in a BMC can be used to address three main types of risk that apply to NPD.

In *The Wide Lens*,[1] Ron Adner describes three main types of risk that apply to NPD. **Execution risk** refers to the ability of your organization or company to actually conduct NPD. **Adoption risk** refers to whether the intended customer segments will actually buy the product or service and the intended end-users actually deploy it. **Co-innovation risk** refers to the ability of vendors, suppliers and partners to provide what you need as part of your NPD project and to conduct their own NPD if that is necessary to develop consumables or other essential goods needed to effectively deploy your product or service. We will discuss how results from the BMC can be used to address these three types of risks below.

Most of the data used in the BMC comes from the workbooks completed earlier using this Toolkit. Note that the process of putting together the BMC forces you to re-examine your prior findings, assumptions and conclusions. This re-examination is appropriate given that your expenses will start escalating rapidly once design and development has begun. As you re-examine these results, it is typical to seek some additional data and revise the earlier work. This

1 Adner R., *The Wide Lens: What Successful Innovators See That Others Miss*, Portfolio; Revised edition (June 25, 2013).

data comes from talking with coworkers, current and potential customers, current and potential partners, or other knowledgeable people, and web research. You may also wish to hire one or more consultants, or buy reports and other documents that are not available free of cost.

How do you enter data in the BMC tool?

Upon opening the tool, the first tab is a spreadsheet containing a blank BMC. There is no data in this tool when you begin. All the data is entered by the user, and almost all the work is done on this tab. As you work with this tool, it may be necessary to resize some cells to fit in what you wish to write. The "Notes and references" tab is for additional data you may need, things to follow up on, and sources for web-based data or analytical methods.

Figure 2 shows a completed BMC using the biofuels example.

Figure 2: **The "Business Model Canvas" tab of the BMC workbook using the biofuels example.**

Business Model Canvas

Key partners

- Remarkable Biofuels LLC for organisms and know-how
- Vendor for sensors
- Vendor for software
- Regulatory and certification consultants
- Delivery service for overnight or up-to-three-day shipping of organisms and parts
- Government agencies funding sustainable energy, agricultural vitality, and waste reduction for customer financial support
- Investors and banks for working capital
- University or research institute for next-generation proprietary organisms, sensor/software systems, and other improvements or related products

Key activities

- Obtain certifications and approvals
- Assemble mini-refinery
- Cultivate organisms
- Deliver, install, and provide training
- Perform servicing, remote operations, monitoring, and maintenance
- Manufacture, market, and sell/license products and services

Key resources

- License for organisms
- Core staff with expertise in biology, sensors, software, and automation
- Marketing, sales, support, installation, training, and other staff for direct customer interactions
- Quality assurance lab
- Organism lab
- Assembly facility
- Test sites
- Web and telecommunications infrastructure
- Distributors and retail outlets
- Local and on-site repair personnel
- Working capital

Value proposition

- Reduced energy expenses
- Rapid payback of initial investment
- Enhanced energy independence
- Flexibility in feedstock with abundant biomass options
- User-friendly, with options for remote operation, monitoring, and maintenance
- Domestically produced and supported

Customer relationships

- Ongoing partnerships leveraging consumables and support options, modeled on infinitely repeating games in game theory
- Collegial relationships established by sales engineers and installers/trainers
- Extensive use of social media and electronic communications to maintain contact

Channels

- Trade associations and trade publications
- Social media, with an emphasis on YouTube and other multimedia; content also available on the company website
- Phone, email, and other owned one-to-one channels
- Sales representatives
- Demonstrations (demos) conducted in cooperation with government agencies, agricultural extension agents, and beta testers

Customer segments

- Mid-sized and large farms
- Agricultural cooperatives and storage facilities (e.g., grain elevators)
- Towns, cities, and companies collecting biomass waste
- Military bases
- Licensees for any new technology we develop and patent

Cost structure

- Variable costs: Parts and components for integration; organism mats; assembly labor; delivery and associated labor; video production; energy and other utilities.
- Fixed costs: Factory; organism farm/clean room; core technical, customer support, marketing, installation/training, and managerial staff; telecom infrastructure; analytical lab; regulatory compliance; legal fees; amortization; taxes; interest; insurance; repair and maintenance; research and development (R&D) and new product development (NPD); advertising and promotion.
- Semi-variable costs: Click-through advertising; webstore; supplemental staff as needed; network economies in social media marketing.
- Initial estimate of cost ratios: Variable costs to fixed costs to semi-variable costs is approximately 3:1:0.5.

Revenue streams

- Leases of mini-refineries
- Sales of mini-refineries
- Sales of organisms on mats, filters, and other consumables
- Service contracts
- Sales of operations and monitoring contracts
- Licensing of improvements to other markets
- Government grants, contracts, and tax incentives

Recall that the approach to NPD in this Toolkit is based on meeting the needs of customers and end-users. For this reason, begin with the upper-right rectangle, entitled "**Customer segments**." Customer segments are the groups of people to whom you are selling *this* product or service, product or service family, or product or service line. These are the people with whom you currently have, or will build, customer relationships. They share a set of common socioeconomic characteristics, such as age, income, education, location, occupation, skills and so on. Influencing their behavior is critical for the success of your product or service.

Customer segments are listed in the corresponding location, as shown in Figure 4 from the BMC workbook using the biofuels example. Note that the completed example has five bullet points. There is no fixed number of entries, and you should make as many or as few entries as appropriate to describe the customer segments for your product or service. (This is true for all the items in the BMC workbook.)

Customer segments for the BMC come from your Project Charter workbook in the section entitled "Targeted customer segments and why they will use it." Figure 3 shows the relevant information in the Project Charter workbook using the biofuels example.

Figure 3: Targeted customer segments in the Project Charter workbook using the biofuels example

Targeted customer segments and why they will use it
We are targeting farms and waste collection and treatment centers because these customer segments are likely to have substantial amounts of biomass and also purchase diesel fuel to operate vehicles, generators, and other equipment. The economic benefits for these segments will be most immediate, as no transportation is required to deliver the biomass to the mini-factory. Additionally, the output can be used internally to reduce or eliminate out-of-pocket expenses, which can be a significant cash flow drain.

Note that as you move through your earlier research and results, you may decide to modify your list of customer segments. If that is done, revise your project charter as you prepare your BMC. In the biofuels example, military bases were added to the BMC based on an interview with an expert, found in the Voice of the Customer workbook.

While the project charter is the primary data source, other previously used tools may also give insights. For example, the SWOT analysis using the biofuels example includes next-generation research and development (R&D) and licensing the products of that R&D to keep the product competitive in the market in the future. Accordingly, in the final version of the BMC using the biofuels example, military bases and licensees were added to the BMC customer segments.

Figure 4: Customer segments from the BMC workbook using the biofuels example.

Customer segments

- Mid-sized and large farms
- Agricultural cooperatives and storage facilities (e.g., grain elevators)
- Towns, cities, and companies collecting biomass waste
- Military bases
- Licensees for any new technology we develop and patent

Next, go to the central rectangle, entitled "**Value proposition.**" A value proposition is a brief statement as to why the customer or end-user would acquire and deploy the product or service. It is usually a few sentences and never more than a short paragraph. It explains what core benefits the product or service provides and why its tangible and augmented features and its price provide a competitive advantage sufficient to drive buying and adoption. A persuasive value proposition is useful for addressing adoption risk.

The value proposition is developed from data contained in the Voice of the Customer workbook on the "Customer requirements" tab. There you find entries for the performance, ease of use, price, and other criteria that drive buying behavior and are the basis for the metrics for the Competitive Advantage tool. These criteria reflect the tangible and augmented features that customers and end-users believe will provide the core benefit they are seeking from products or services like the one(s) you are developing. Figure 5 shows data from the "Customer requirements" tab of the Voice of the Customer workbook using the biofuels example. Before entering the requirements, make sure they are consistent with supplemental market research conducted via web research and/or other means.

Figure 5: **"Customer requirements" tab in the Voice of the Customer workbook using the biofuels example.**

Customer requirements

	Importance to respondent / Customer requirements	Average importance on a scale from 1 (low) to 3 (high)	Current customers	Future customers and end-users				Experts		Other
				JGH	MNE	XYZ	DWG	ABC	ATI	
Performance	Wide range of waste that can be treated	2.333333333		3	3	1	1	3	3	
	Efficiency of biofuel production	2.5		3	2	3	1	3	3	
	Flexible production rates	1.333333333		2	2	1	1	1	1	
	20 to 50 year usable life	2.666666667		3	3	3	1	3	3	
	Meets regulations and standards for fuels	3		3	3	3	3	3	3	
	No adverse environmental or health impacts	2.666666667		3	3	1	3	3	3	
Ease of use	Does not require much training	2.666666667		3	3	3	3	1	3	
	Ease of transport	1.333333333		3	1	1	1	1	1	
	Little maintenance and monitoring time required	2.5		3	3	3	3	2	1	
	Customer support	2.333333333		2	2	3	3	2	2	
Price	Purchase price	2.6		3	3	3	NA	2	2	
	Operation costs	2.4		3	2	3	NA	2	2	
	Payback period	3		3	3	3	NA	3	3	
Other	Better than competing technologies	1.8		2	2	1	NA	3	1	
	Addressing skepticism of customers	2.6		1	3	3	NA	3	3	
	Energy independence	2.4		2	2	3	NA	3	2	

Read through these criteria in the "Customer requirements" tab and extract the ones you think will drive buying behavior. Select no more than four or five, as socio-psychological research indicates people cannot hold more than four or five criteria in their minds at any time. Give preference to the ones with the highest average importance. These should align with the customer requirements found on the "Design specifications" tab of the Voice of the Customer workbook (see Figure 6) as well as with the requirements found on the "Inputs" tab of the Competitive Advantage workbook (see Figure 7).

Figure 6: "Design specifications" tab of the Voice of the Customer workbook using the biofuels example.

Design specifications based on primary sources

	Customer requirements	Specifications	Importance
Performance	Wide range of waste that can be treated	Moisture content, size, relative mass	2.333333333
	Efficiency of biofuel production	Energy output/energy consumption	2.5
	Flexible production rates	Speed range in hours	1.333333333
	20 to 50 year usable life	Years	2.666666667
	Meets regulations and standards for fuels	Relevant standards, highlighting British Thermal Units (BTUs), viscosity, and emissions	3
	No adverse environmental or health impacts	Emissions, particle size, organisms must be safe	2.666666667
Ease of use	Does not require much training	Training time	2.666666667
	Ease of transport	Size of vehicle needed	1.333333333
	Little maintenance and monitoring time required	Labor time per month	2.5
	Customer support	Customer support hours and personnel	2.333333333
Price	Purchase price	Currency	2.6
	Operation costs	Cost per month	2.4
	Payback period	Years	3
Other	Better than competing technologies	Cost per liter of fuel	1.8
	Addressing skepticism of customers	Independent test laboratory results	2.6
	Energy independence	Barrels of imported oil not needed due to one unit running full-time for one year	2.4

Figure 7: "Inputs" tab of the Competitive Advantage workbook using the biofuels example.

Closeness of good on a scale of 1 to 10

Desired core benefits and features (customer requirements)	Ease of use	Efficiency	Applicability	Environment-friendly	Affordability	Scalability	Delivery anywhere	Average
Our product	10	7	8	10	10	9	8	8.9
OWS	8	7	7	7	7	8	5	7.0
Anaergia, Inc.	8	8	9	6	7	6	4	6.9
Fiberight, LLC	8	8	8	7	5	7	1	6.3
Thomas Asher	6	7	7	6	8	5	3	6.0
BriJen Biotech, LLC	7	7	7	7	6	6	6	6.6
Aarhus University	7	7	5	6	7	3	7	6.0
WSU	8	7	6	6	7	8	8	7.1
U. Patras	6	6	6	6	7	9	10	7.1

It is important to realize that the results from using other tools in the Toolkit are only data sources. You still need to think about whether you have captured everything that would be critical for a value proposition for your product or service.

The benefit of brainstorming additional critical elements of the value proposition component is illustrated by Figure 8, showing the value proposition from the BMC workbook using the biofuels example.

We can see in the example how "Energy independence" is included based on the tables from the Voice of the Customer workbook shown in Figures 5 and 6 ("Other" customer requirements), even though it is not listed as a core benefit in Figure 7. However, energy independence was added to the value proposition component in the BMC workbook using the biofuels example

because it is sought by many governments, and there are government grants and tax incentives associated with that objective. Post-pandemic fuel cost spikes make energy independence more important for heavy consumers of diesel. If the interviews were done before the pandemic, the importance of this factor in cost mitigation would not have been captured because it was not an issue for diesel users. Similarly, an entry stating that the product is domestically produced and supported was also added, even though that was not found in the interview data. Assuming there is discussion about supporting domestic economic growth in the print and social media in the country, adding domestic production and support to the value proposition brings an emotive dimension to support the other core benefits stated in the interviews.

Figure 8: **Value proposition from the BMC workbook using the biofuels example.**

Value proposition

- Reduced energy expenses
- Rapid payback of initial investment
- Enhanced energy independence
- Flexibility in feedstock with abundant biomass options
- User-friendly, with options for remote operation, monitoring, and maintenance
- Domestically produced and supported

As an aside, whenever major natural, socioeconomic or political events occur than can affect what your customers or end-users want or desire, it is prudent to do a second round with the Voice of the Customer tool.

Now that you know whom you are targeting and why they should want your product or service, you can examine what kind of relationship you want with them.

Customer relationships are how you will interact with your customers. For the purposes of the BMC, customer relationships involve much more than past buying behavior; they also include your entity's and your personnel's reputation in the market as well as the reputations and relationships of your key partners to the extent relevant. Relationships go beyond purchasing to include experiences with training, financing, maintenance and repair, obtaining parts and consumables, and so on. Do you foresee one-time transactional relationships or long-term ones involving repeated sales and/or support contracts? Do you foresee having significant person-to-person involvement with customers, or will you primarily or fully interact through online shops, automated help desks and other such digital means? These customer relationships underlie your company's or organization's goodwill and brand loyalty. They are a critical component of adoption risk.

The data for developing the "Customer relationships" component of the BMC comes from the results of using the SWOT Analysis tool. Figure 9 shows the analysis of the 4Ps (product, price, place and promotion) in the "Analysis of intersections" tab of the SWOT Analysis workbook using the biofuels example.

Figure 9: 4Ps found in the "Analysis of intersections" tab of the SWOT Analysis workbook using the biofuels example.

SWOT analysis

	Internal	Strengths	Weaknesses
		Remarkable Biofuels LLC is interested in licensing to us and has signed a non-disclosure agreement (NDA)	Lack of working capital to complete development
		Core technical staff and new product development (NPD) team in place, along with a competent ad hoc management team	Founders lack experience in this industry and do not have experience supporting or selling to these customer segments.
		Low-cost, energy-efficient production system that is amenable to upgrades in hardware, software, sensors, filters, and organisms	Need to hire logistics, production, sales, and service staff, as well as a President/CEO with industry experience.
		Cooperative agreement with a leading national research university to develop upgrades and next-generation technology	Final license for the process, organisms, and related know-how remains to be signed, including the supply agreement for organisms or a license to grow our own.
		0	0
		0	0
		0	0
		0	0
External		0	0
Opportunities	Increased interest and awareness of the benefits of biofuels among targeted customer segments	**Product:** A small, modular mini-refinery designed so that multiple vats can be plugged into a single grinder/mulcher at the front end and a single filtering unit with multiple storage tanks at the back end. The system is equipped with monitoring sensors, automated operations, alerts and reminders, and preventative maintenance notifications. Remote troubleshooting and diagnosis are available, and routine maintenance and repairs can be performed remotely when appropriate. The mini-refinery is designed for easy repairs: components can be swapped out with new ones shipped to the site, or updated via software downloads. Remote support is included, guiding users through troubleshooting, diagnosis, and repairs if the unit is still within its 10-year warranty period. If necessary, on-site support is provided at no extra cost during this period and can be purchased thereafter. We will initiate the next-generation R&D initiative, funded by government and foundation grants to us or a university, focusing on improving digester organisms or refining methods that can be retrofitted into the existing system.	**Promote:** Seek grants and contracts from local, regional, and national government agencies, including military bases, for demonstrations (demos) and operational purchases. Additionally, identify influential and well-respected potential buyers and end-users to serve as beta testers, with agreements to feature a trade press article if they find the product satisfactory. Emphasize the ease of use by leveraging social media platforms such as YouTube, TikTok, Instagram, Facebook, and Twitter to post videos demonstrating how to use and maintain the product, as well as showcasing how it can save money. These videos should also be featured on the company website and highlight younger users. Prepare and provide sample grant applications and documentation for tax incentives. Beyond targeting specific customer segments, also promote the product to investors and mid-size and large regional businesses that may wish to diversify by leasing mini-refineries to co-locate with targeted customers. Finally, collaborate with universities, trade schools, and professional associations to recruit necessary staff and management and to discover new technologies of interest.
	Government incentives for innovative startups		
	Concerns in targeted customer segments regarding fuel availability and cost		
	Government incentives for adopting biofuels		
	Reliable cell coverage in place in some regions of the country, with plans to complete the network within three years.		
	Increased government support for relevant research and development (R&D) at universities and research institutes.		
	0		
	0		
	0		
	0		

SWOT analysis

Threats	Competition from other biofuel vendors using similar co-location or refinery/blender business models	**Place:** Emphasize the ease of use and the local aspect of the company. The entire system can be shipped in linked containers or delivered on pickup truck beds, allowing for assembly in a building or shelter provided by the buyer. The package includes delivery, installation, and training, as well as a year of remote support. This comprehensive service addresses low absorptive capacity and fosters personal relationships, setting us apart from competitors.	**Price:** The full-price purchase target is set at the equivalent of three to five years of current fuel costs. The lease-to-buy option spans 10 years, with a break-even point in the first year and a positive return on investment (ROI) as learning curves improve and production volumes increase. Burst transmissions and a robust client-side embedded computer help minimize data transmission costs. A satellite communication unit can be bundled for areas with poor telecom coverage. Both purchase and lease options include delivery, installation, training, a 10-year warranty, and support, as detailed under "Place." The initial purchase includes a one-year supply of organisms, with a fixed 10-year price for an annual subscription for additional organisms. Remote operations and maintenance are available as an add-on.
	Buyer reluctance to make major investments without quick payback periods and available financing		
	Transportation for shipping to buyers		
	Reliability of internet and cell networks to support remote operations, monitoring, and maintenance		
	Lowballing by large foreign biofuel providers		
	Low absorptive capacity among end-users regarding biofuel mini-refineries		
	0		
	0		
	0		
	0		

Note that the results entered in the “Analysis of intersections” tab after using the SWOT Analysis tool usually do not specify desired relationships that should be listed in the BMC, although they probably imply what they should be. These desired relationships are derived from further analysis and interpretation of the SWOT analysis results, to identify relationships that will help your NPD project succeed. Using game theory for clarification, in an infinitely repeating game all the players have an incentive to collaborate and cooperate as they know they are in a long-term relationship. To contrast, in a single-play game, the incentive is to maximize your own benefits because you will not work with the other players again. In this stage of NPD using the biofuels example, the goal is to build long-term positive relationships which, in turn, will contribute to goodwill and word-of-mouth promotion of the product, stimulating additional sales. Figure 10 shows the “Customer relationships” component in the BMC workbook using the biofuels example, listing the types of relationships that would help this project succeed.

Figure 10: **Customer relationships in the BMC workbook based on the “Analysis of intersections” tab from the SWOT Analysis workbook using the biofuels example.**

Customer relationships

- Ongoing partnerships leveraging consumables and support options, modeled on infinitely repeating games in game theory
- Collegial relationships established by sales engineers and installers/trainers
- Extensive use of social media and electronic communications to maintain contact

Next, look at the **channels** used to reach the customer segments. Channels are the literal, physical ways you will send messages to your customer segments and how you will sell to them. Advertising and sales are not channels. A trade magazine, a catalogue, a wholesaler, a sales representative or a retail outlet are channels. So is a trucking firm, a postal system, email, a telephone or an air express delivery company. The choice of channels can be a factor in adoption risk because you need to use channels that reach your intended customer segments in a way that will facilitate decisions to buy and deploy your product or service.

The data for preparing this item comes from interviews with experts and end-users, as well as web research. Figure 11 shows a portion of an interview using the biofuels example collected using the Voice of the Customer tool, where the interviewee suggested channels for reaching customers such as trade meetings (trade associations) and the trade press.

Figure 11: **Interview data suggesting channels to use to reach customers from the "Customer interview 2" tab in the Voice of the Customer workbook using the biofuels example.**

How would you introduce a product like this one to the market?	I would place a demo unit in several locations, focusing on larger and mid-sized cities where excess compost is sometimes an issue. I would then make presentations at trade meetings and seek coverage in trade publications. Ideally, the articles and presentations should come from people like me, rather than from you, as we all know your endorsements are driven by sales interests. Gaining support from the central government, either through purchases or grants, would also help overcome resistance, provided the product proves effective.

Channels identified for the biofuels example are shown in Figure 12. Note that the interviewee quoted in Figure 11 mentioned trade meetings (trade associations) and trade publications, and these were listed in the "Channels" component of the BMC for this project (see Figure 12). Further analysis suggested that in order to be mentioned or featured in articles in trade publications written by relevant experts, these experts need something to write about. This in turn suggested additional channels such as beta testing with respected opinion leaders and participating in demonstrations (demos) of the product or service sponsored by agencies seeking to introduce innovative agricultural and waste management technology. Military bases were included as a customer segment (see Figure 4), and they may also provide early adopters who can then write articles in suitable channels.

Figure 12: **Channels in the BMC workbook using the biofuels example.**

Channels

- Trade associations and trade publications
- Social media, with an emphasis on YouTube and other multimedia; content also available on the company website
- Phone, email, and other owned one-to-one channels
- Sales representatives
- Demonstrations (demos) conducted in cooperation with government agencies, agricultural extension agents, and beta testers

The final customer-focused component in the BMC tool is the "**Revenue streams**" component. Revenue streams are the sources of income generated by selling or leveraging the product or service. They are very sensitive to adoption risk, because if that risk is not managed, the product or service is not bought and there are no revenue streams.

Always remember that sales are not necessarily the only revenue stream. Licensing, servicing, interest on financing, sales of extended warranties, sales of parts and consumables, and training are examples of additional revenue streams. Where your product or service allows others to be bundled with it, sales of those additional products may also generate commissions. Be aware that bundling has its own risks, as a problem with a bundled product or service could reflect negatively on your own product or service in the eyes of your customers or end-users.

Revenue streams are also suggested by your results after using the SWOT Analysis tool. The revenue streams must be realistic given the customer segments you have identified, the relationships you will build with them, the channels you will use to reach them and your value proposition. Note that for the BMC tool you do not have to estimate the revenues themselves, only identify where they will come from. That said, by this time you should have an idea as to pricing from the Voice of the Customer tool interviews and your web research. You should also have a rough estimate of the market size from using the Project Charter tool and some ideas about likely market penetration from using the SWOT Analysis tool. So, making an initial rough estimate of revenues is reasonably straightforward and this should be included if you have it. A more rigorous estimate will be made using Tool 15: Net Present Value.

Figure 13 shows the "Revenue streams" component from the BMC workbook using the biofuels example, indicating that multiple, distinct revenue streams will be pursued for this project.

Figure 13: Revenue streams from the BMC workbook using the biofuels example.

Revenue streams

- Leases of mini-refineries
- Sales of mini-refineries
- Sales of organisms on mats, filters, and other consumables
- Service contracts
- Sales of operations and monitoring contracts
- Licensing of improvements to other markets
- Government grants, contracts, and tax incentives

The last four components of the BMC tool address what is necessary to build customer relationships and generate revenues by delivering the value proposition. These components are: key activities, key resources, key partners and cost structure.

Begin with the **key activities** needed to make the prior items a reality. Key activities are the ones that you need to develop, make, support, sell and sustain the product or service once it is commercially introduced. Key activities may also involve developing capabilities and capacities in your vendors and other organizations important for your and your customers' supply chains. The inability to perform these key activities directly can be considered an execution risk, while the inability to perform them through partners can be considered a co-innovation risk. Key activities may also show where you can intervene to address adoption risk, such as when training is required for end-users.

Your starting point for locating data about key activities is your action plan. Figure 14 is from the Action Plan workbook using the biofuels example at the "Action plan framework" tab.

Figure 14: Extract from the "Action plan framework" tab of the Action Plan workbook using the biofuels example.

	How it will be accomplished and how you will know it is done				
Stage	Key tasking	Who is responsible for completion	Completion milestone	Budget	Start and end dates
Idea	"Determine the feasibility of sourcing necessary organisms, parts, components, and systems."		Validation that suitable organisms exist and can function in the mini-refinery.	USD 5,000	02/02/2021 - 20/02/2021
Screen	Assess market, technical, and financial viability.	Market work: market research expert; technical viability: engineering expert and legal consultant; financial: finance and budgeting expert	Competitive advantage and freedom to operate established; confirmed feasibility of market entry for the product concept; Technology Readiness Level (TRL) 2 achieved.	USD 25,000	01/03/2021 - 25/05/2021
Design	Establish a Business Model Canvas; finalize the technical approach, secure organism licenses, and establish proof of concept; complete the design project in alignment with the model.	Business model canvas: team leader; technical approach and design: engineering and technical expert, and design consultant; IP and supplier/vendor qualification and contracting: logistics expert, with legal consultant	Business canvas model approved; licenses for organisms obtained; TRL 3 achieved; design approved; vendors/ suppliers qualified and contracts in place	USD 100,000	01/07/2021 - 30/11/2021
Development	Develop a benchtop prototype and an operational prototype; raise the remaining necessary funding.	Engineering and technical expert, with production engineering consultant	TRLs 4, 5, 6, and 7 attained	USD 170,000 through TRL 4. Additional USD 1.3 million as raised	01/12/2022 - 28/10/2022
Test	Achieve all certifications and regulatory compliance; complete beta testing.	Engineering and technical expert and logistics expert, with legal consultant	TRL 8 and 9 attained; all necessary certifications and registrations received	USD 500,000	01/11/2022 - 28/03/2023

	How it will be accomplished and how you will know it is done				
Launch	Prepare manuals and train market and sales personnel, sales representatives, installers, and maintenance repair staff; implement a marketing campaign; establish corporate and retail sales channels.	Training: team leader with training consultant; marketing and sales: business development expert and sales and marketing department manager	Personnel trained for launch and support; marketing campaign implemented; sales channels established; initial revenue targets hit	USD 200,000	01/04/2023 - 28/08/2023
Post-launch	Revise manuals and training materials as needed; enhance online training and support with improved software and platforms, if available and affordable; develop a list of desirable improvements, enhancements, and additions.	Product line manager. Team now acts as in-house consultants	Removal of product from sales plans	To be provided by product line manager as needed	15/01/2024 - 30/12/2043

Also examine your SWOT analysis (see Figure 9) to ensure you are not missing something critical in your action plan. If you are, revise it.

Always remember that the BMC is an outline of the business plan for the product or service, and the bullet points under the "Key activities" component in the BMC are categories of what must be done to realize that business plan. They are what is needed for the overall success of the product or service, not just successful NPD. This is illustrated in Figure 15, which shows the "Key activities" component in the BMC workbook using the biofuels example.

Figure 15: Key activities from the BMC workbook using the biofuels example.

Key activities

- Obtain certifications and approvals
- Assemble mini-refinery
- Cultivate organisms
- Deliver, install, and provide training
- Perform servicing, remote operations, monitoring, and maintenance
- Manufacture, market, and sell/license products and services

Next, examine what **key resources** are needed to perform the key activities in a manner that maintains customer relationships and delivers the value proposition. These essential resources include labor, capital, facilities and other items included in the cost of products or services sold, or overhead on an income statement. The costs include payments to key partners, as well as tangible or intangible assets on a balance sheet. Intellectual property (IP) and goodwill are examples of intangible assets. Facilities are an example of tangible assets. Current assets provide the capital and inventory needed for NPD. Note that if you are using a public domain technology, the relevant patent(s) likely are a critical intangible asset. Lack of key resources can be considered an execution risk.

To identify key resources, begin by re-examining your Value Chain tool results. Pay special attention to risks associated with the current value chain. Figure 16 shows the "Service and support" tab of the Value Chain workbook using the biofuels example. Figure 17 shows details from the "Solutions" tab of the same workbook.

Figure 16: "Service and support" tab of the Value Chain workbook using the biofuels example.

Service and customer support

Outputs/products/services	Risk	Repair, replacement, consumables, etc. concerns									
		Repair by us	Depots	Distributors	Retail outlets	By user	Organism kits including better organisms	Hardware parts	Sensor upgrades and replacements	Software upgrades and replacement	Training
Mini-refinery hardware	1.7	1	1	2	2	2	3	1	2	1	2
Sensor system	2.1	1	1	2	3	3	3	1	2	2	3
Operations and maintenance module	2.2	1	1	2	3	3	3	1	2	3	3
Organism kit	2.3	1	1	3	3	3	3	1	2	3	3
Regulatory approvals and certification	2.1	1	2	2	3	3	3	1	2	3	1
User and remote operation manuals	1.6	1	1	1	1	3	3	1	2	2	1
Average risk for service and support	2.075										

Figure 17: Detail from the "Solutions" tab of the Value Chain workbook using the biofuels example.

Solutions to risks

Risk to be addressed	Who is responsible	What will be done	Feasibility (0–100%)	Anticipated effectiveness (0–100%)
Organism selection, their health and replacement throughout the product's life, and support for consumable sales	Technical expert, supported by a logistics expert, for licensing or contract research where applicable	Hire competent consultants or obtain know-how from the licensor on how to grow and maintain cultures, ship them, etc. Additionally, hire and train up to three master's-level microbiologists to handle operations, support sales of consumables, and address customer issues. Ship organism kits directly from us to the user. Develop a backup plan in case suitable organisms cannot be licensed, to ensure the project does not have to be canceled.	100%	90%
Sensor suite selection, placement, repairs, and upgrades	Technical expert, with support from a marketing expert and a service expert, regarding their needs	Establish a long-term relationship with a competent integration vendor; develop a suite with a drop-in replacement approach. Hire one engineer in-house to manage sensor vendors and support operations and service.	100%	100%
Vendor qualification	Logistics expert	Develop a vendor qualification program. Benchmark against a successful company in our industry from another country that is recognized as a leader in best practices.	100%	100%
Software for operations and maintenance, and sensor monitoring	Technical expert	Find a commercial off-the-shelf package and have the vendor adapt it. Identify a vendor for secure storage and downloads upon our approval. Prepare a decision tree to guide service, and train our sales and service team to use it.	85%	90%

Solutions to risks

Risk to be addressed	Who is responsible	What will be done	Feasibility (0–100%)	Anticipated effectiveness (0–100%)
Service	Technical expert, supported by a marketing expert	Develop a three-person repair team with a strong understanding of all components, parts, and systems to support service organizations and implement relevant upgrades. Establish a small in-house service operation with two employees who are able to travel to customer sites as needed. Ensure they are sufficiently proficient in software to conduct remote operations and maintenance.	90%	90%
Sales	Marketing expert, supported by a logistics expert	Determine the best structure for running sales and marketing, and present your recommendation to the team.	80%	90%
Training	Marketing expert, supported by a technical expert	Develop an outline for the required training. Hire a vendor to prepare the training materials and teach our sales engineers how to conduct the training. Integrate the training with decision trees for hardware, sensors, software, and organism kits.	80%	80%
Production	Production manager, with support from a technical expert	Develop an integrated production model and perform value engineering on it. In partnership with a technical expert, create decision trees for all parts, systems, and components to be used when addressing problems either in production or in the operation of a unit, whether by customers or remotely by our staff.	100%	90%

As you work through your value chain, consider what should be performed in-house and what should be done by partners, as this will be needed to complete the "Key partners" component in the BMC. As always, when examining tools used in early stages of NPD, you may discover that you need to revise previous work as a result of this exercise.

In the "Key resources" component of the BMC, you provide a high-level synopsis of what is needed to complete the key activities with the desired outcomes. Figure 18 shows the key resources in the BMC workbook using the biofuels example, with a comprehensive list of resources that must be secured.

Figure 18: Key resources from the BMC workbook using the biofuels example.

Key resources

- License for organisms
- Core staff with expertise in biology, sensors, software, and automation
- Marketing, sales, support, installation, training, and other staff for direct customer interactions
- Quality assurance lab
- Organism lab
- Assembly facility
- Test sites
- Web and telecommunications infrastructure
- Distributors and retail outlets
- Local and on-site repair personnel
- Working capital

Key partners are the vendors, suppliers, contractors, consultants and licensors that you use to supplement your internal capabilities and resources to develop, make, sell, distribute and support the product or service. In addition to vendors, suppliers, contractors, manufacturers and so on are those who make consumables and spare parts, as well as those who conduct maintenance, repair, training and other support services. What makes them key partners is that they are essential for creating and providing the tangible or augmented features of the product or service. Key partners can be involved in one or many of the design specifications that provide technical approaches to those features. Key partners are critical for addressing co-innovation risk.

Even if you use a public domain technology, you likely need key partners. For example, perhaps you need access to know-how in order to adapt the technology to use it in your product or

service. You may also need to license an underlying patent for a patented invention related to your product or service. Or you may want to partner with a research entity to develop a different solution, or design around a patented invention.

Key partners can be important for addressing adoption risk. For example, marketing and sales outlets as well as maintenance and repair contractors or independent repair shops may have crucial roles as key partners to promote or support your product or service. Trainers may also be involved as key partners.

Where consultants are used, such as a designer, they can help address execution risk by contributing special skills that may be needed to enable your organization or company to actually conduct NPD as planned.

Key partners have been identified as a supplemental activity when examining key resources. They provide the resources, capabilities and skills you are lacking to implement NPD and utilize your value chain. They may also be identified after doing the SWOT analysis. At this time, you should also consider downstream generations of this product or service, or related ones. If your long-term plan includes downstream generations (portfolio development), key partners may include entities that can develop those for you or in cooperation with you.

Key partners for the biofuels example are shown in Figure 19. They include a source for the organisms used in the mini-refineries, equipment vendors, consultants, delivery services, government agencies, financial partners and research partners. For downstream generations of the product or service, key partners include research partners that can continue to improve organisms and equipment for the mini-refineries. In an actual BMC you would ideally be able to list the specific partners you will be using.

Figure 19: **Key partners from the BMC workbook using the biofuels example.**

Key partners

- Remarkable Biofuels LLC for organisms and know-how
- Vendor for sensors
- Vendor for software
- Regulatory and certification consultants
- Delivery service for overnight or up-to-three-day shipping of organisms and parts
- Government agencies funding sustainable energy, agricultural vitality, and waste reduction for customer financial support
- Investors and banks for working capital
- University or research institute for next-generation proprietary organisms, sensor/software systems, and other improvements or related products

The final component of the BMC tool is the **cost structure**. This presents the financial implications of how the key activities are performed. The cost structure reflects both the product and the business or industry for which it is being developed, as well as the number of customers in the market and how they will buy or receive the product.

Cost structure both drives and reflects your cost of products or services sold and overhead. Costs are the actual expenditures, while cost structure is the relation of these expenses; that is, the percentages of groups or bins for the various line items accounted for in the total costs.

Some costs are fixed and must be paid regardless of how many units are produced or sold. For example, the factory where the units are assembled has to be obtained regardless of whether one unit is made or 200. Of course, there is always some range in the number of units. If 200,000 were to be made, additional investment in facilities would be needed. When examining fixed costs, see where it is feasible to achieve economies of scale (many identical units with the same equipment that only needs to be acquired once), economies of scope (many different units made with the same equipment acquired once) or network economies (ability to add additional units to infrastructure at no additional cost, up to some limit. A software app on an app store is an example, where many users can download the same program).

Fixed costs can be leveraged where they can provide economies of scale, economies of scope or network economies. Whether that can be done depends on the nature of the business, the industry it is in, the products or services being sold and how rapidly production can be scaled, as well as how quickly sales increase.

Variable costs fluctuate in correspondence to the number of units made or sold. An example may be labor for a delivery service, where you have to hire more people around holidays associated with gift-giving, but these only need to be temporary workers because when the holiday passes the demand for delivery services will drop. The inventory of required labor to produce the product or service is a variable cost. Depending on the training required and the labor market, even full-time workers can be a variable cost, especially when you can hire more as volume increases, or, depending on labor laws, lay off workers as volumes fall. Of course, this is always within some range, since it does not make sense to be constantly hiring and firing people as volumes shift with seasonal demand, for example.

Semi-variable costs fall between variable and fixed costs. For example, if you buy storage in the cloud for data, you usually buy a fixed number of gigabytes or terabytes. You may not use all that storage at first. But the company selling the storage only sells it in fixed increments. This cloud storage model represents a semi-variable cost. At some point, if you need more storage you will have to buy it. Semi-variable costs are where network economies may come into play. A network economy means you can add units without an additional cost, up to some cap. Network economies exist where the next unit added does not increase costs. These are often seen in telecommunications, when more cell phones are added to an existing network for little or no additional cost. However, at some point the capacity of the cell tower and equipment to handle a volume of calls is exceeded, the network economy ends, and a new tower or better equipment or new way of maximizing bandwidth use is required, which establishes a new maximum number of calls for the system's network economy.

Often, semi-variable costs are lumped with variable costs. For example, attendees at an in-person event can be added as long as the room capacity is not exceeded, but food and beverage costs for the event usually are not amenable to network economies because when attendees are added, more food and beverages are needed. The exception is when a minimum order must be placed, which sets a fixed price of a certain amount. Until that minimum is reached there can be a network economy as people are added.

Sunk costs are those made regardless of whether any units are made or sold. NPD is a sunk cost. So is a factory built for a product that never sells. Once equipment is purchased, it can be treated as a sunk cost. If an item such as a piece of equipment can be depreciated or amortized, the associated costs may be able to be treated as fixed or variable.

Cost structures typically involve looking at the fixed, variable and semi-variable costs, and the ratio between them. Sunk costs are usually not considered. Cost structure is determined by calculating the mix of fixed, variable and semi-variable costs, and the line items included in each. Typically, these costs are aggregated into categories such as operations, marketing, sales, support and other liabilities. They could also be aggregated into categories reflecting your value chain. The ratio of these categories as part of the overall costs of making, selling, distributing and supporting the product, product line or product family is the cost structure. By value-engineering the value chain and leveraging your assets (which includes the goodwill and brand loyalty resulting from customer relationships), you create a more favorable cost structure for generating profit, as that will reflect reducing the costs of the various line items. For example, for an existing company greater goodwill and brand loyalty reduces marketing costs. For any company, use of public domain technology may reduce operations costs. An advantageous, value-engineered cost structure can reduce execution risk.

The ratio between these is calculated by estimating the expenses within each category of the cost structure. By examining the value chain and looking at the costs associated with it, it is possible to identify these expenses. This activity requires a level of analysis that usually has not previously been done by this stage of NPD, but for the purposes of the BMC it can be an initial estimate based on the experience of staff. If there is insufficient expertise to make an educated guess in-house, consultants can be brought in who have solid experience in the industry. These results will be useful when using Tool 15: Net Present Value, where a more detailed examination of costs will need to be made.

With the revenue and cost structure estimates, you can also calculate the relationship between cost of goods sold and sales, which is called cost of goods sold ratio or cost of sales to revenues ratio.

The two ratios, the cost structure ratio and the cost of sales to revenues ratio are used to compare the prospects of your product or service with those of other similar products or services. It can also be used to compare products and services being considered for an NPD portfolio. If you know these ratios for other goods or business units and their gross profit (net revenues minus costs of goods sold), you can tell if this product or service should be more profitable or less profitable than those it is benchmarked against. Such ratio analysis is a good tool for checking the efficiency of a business or business unit. Typically, the comparison data is provided by experts in that industry or found through examining the financial disclosures of companies focused on making the same or related products or services. Such financial disclosures are sometimes found in government filings or in reports to shareholders for publicly traded companies.

Collecting the background data necessary to complete the cost structure is tedious, unfortunately. But it is important because you will need the cost estimates to calculate expenses for ensuring you have sufficient resources to complete NPD and bring the product or service to market. You also need them for calculating the net present value of the product or service (see Tool 15).

To find your costs, first examine each page of the Value Chain workbook in order to determine the costs associated with the activities required during that part of the value chain. See Figure 20, from the "Operations" tab of the Value Chain workbook using the biofuels example. This tool contains the activities involved in the primary activities of Porter's Value Chain. These are the tasks associated with making the product or service, getting it to customers and supporting it once there. They do not include R&D, NPD, human resources, and other overhead or general and administrative activities. Those are called secondary activities in Porter's Value Chain. If Porter's Value Chain is new to you, you can read more about it in Module III of *Using Inventions in the Public Domain: A Guide for Inventors and Entrepreneurs* (2020), section 2.3 "Value chain analysis in an assessment of a firm's competitive environment."

Figure 20: **Primary value chain activities found in the "Operations" tab in the Value Chain workbook using the biofuels example.**

Operations part 1

Parts, components, etc.	Average of risks	Production methods and facilities/equipment concerns: Spoilage/deterioration	Waste disposal	Labor availability at affordable price	Special fixtures or machinery	Energy consumption	Welding and other connections
Vats	1	1	1	1	1	1	1
Piping and valves	1	1	1	1	1	1	1
Sensors	1.5	1	2	2	1	1	2
Organism	2.33333	3	3	2	3	2	1
Mats for organism	1	1	1	1	1	1	1
Conveyers	1.16667	1	1	2	1	1	1
Chippers/ mulchers	1.33333	2	2	1	1	1	1
Filters	1.33333	2	1	1	2	1	1
Software for monitoring and maintenance	1.16667	1	1	2	1	1	1
Telecommunications for data transmission and remote control	1.16667	1	1	2	1	1	1
Average risk for operations part 1	1.3						

Operations part 2

Parts, components, etc.	Average of risks	Outputs/product systems/major components: Mini-refinery hardware	Sensor system	Operations and maintenance module	Organism kit	Regulatory approvals and certification	User and remote operation manuals
Vats	1	1	1	1	1	1	1
Piping and valves	1.5	3	1	2	1	1	1
Sensors	2	2	2	2	3	1	2
Organism	2.33333	2	2	2	3	3	2
Mats for organism	2	1	2	2	3	2	2
Conveyers	1.16667	1	1	2	1	1	1
Chippers/mulchers	1.16667	1	1	2	1	1	1
Filters	1.33333	1	1	2	1	1	2
Software for monitoring and maintenance	2.16667	2	2	2	3	2	2
Telecommunications for data transmission and remote control	1.66667	1	2	2	1	2	2
Average risk for operations part 2	1.6333						

Average risk for operations overall	1.4667

Risk
3 High
2 Medium
1 Low

Next you must estimate and categorize your costs for Porter's secondary value chain activities. One way to estimate these is to look at publicly available records of similar entities engaged in similar businesses and use those as a benchmark. Another way is to hire an accountant with experience working with companies, nonprofits or agencies similar to yours engaged in similar or equivalent activities. Hiring an accountant usually makes sense, especially in a startup or entity that has never done anything like this before, because the bins you set up for your expenses will typically be the same ones used in the chart of accounts for tracking costs in the bookkeeping of the entity. If you do engage a consultant, it is usually helpful to look at your estimates for the primary value chain activities as well.

The data is then entered in the BMC workbook in the cell labelled "Cost structure," as shown in Figure 21 from the BMC workbook using the biofuels example. Note that only the key activities in the value chain are entered into the cell.

Figure 21: **Cost structure from the "Business Model Canvas" tab of the BMC workbook using the biofuels example.**

Cost structure

- Variable costs: Parts and components for integration; organism mats; assembly labor; delivery and associated labor; video production; energy and other utilities.
- Fixed costs: Factory; organism farm/clean room; core technical, customer support, marketing, installation/training, and managerial staff; telecom infrastructure; analytical lab; regulatory compliance; legal fees; amortization; taxes; interest; insurance; repair and maintenance; research and development (R&D) and new product development (NPD); advertising and promotion.
- Semi-variable costs: Click-through advertising; webstore; supplemental staff as needed; network economies in social media marketing.
- Initial estimate of cost ratios: Variable costs to fixed costs to semi-variable costs is approximately 3:1:0.5.

The cost structure indicates the control the entity making the product or service will have over its expenses. In a BMC, the cost structure component must present the information in a form such that a reviewer of the BMC can see how the revenue streams can be obtained in a way that makes money for the company or meets other financial goals of a governmental or nonprofit organization.

How do you interpret the data in the BMC tool and use it in your NPD process?

Taken together, the cells of a completed BMC tool provide an outline of how the product or service will generate value for the customers and end-users on the one hand, and for the company or organization developing the product or service and offering it for sale or use on the other. Where it is coherent (i.e., where it makes sense as a whole), the BMC provides a value framework and a point of reference for developing and evaluating designs and conducting development. It does this because the design and development decisions have to cohere with the BMC. If they do not, the likelihood the product or service will fail in the market increases.

Common problems are uncertainty as to whether the right data is in the BMC, or if it seems complete enough. One way to gain a feel for whether you have the right data, or enough data, is to view the BMC as a business plan for a one-product or one-service company. Adopting your most skeptical mindset, ask yourself whether you would invest in it. If you are still not certain, ask a qualified friend or colleague outside your company, nonprofit or agency to review it. Before doing so, it is prudent to have them sign a non-disclosure agreement (NDA) because at this point you are still in NPD for a product or service which may qualify for IP protection, and you want to guard against prior public disclosure or unauthorized use of information. You may also wish to hire an outside expert as a consultant and, if so, have them sign an NDA too.

If this BMC review is negative, stop the NPD process. Determine if there is a problem due to insufficient or inadequate data, or if the product or service no longer makes sense to develop. If it is a data problem, go back to the tool or tools referenced as the source for the data. Re-examine the data in any relevant workbook(s) and, if necessary, add to or redo them. Then use the BMC tool to create a new BMC and repeat your review. If it is still negative, you may choose to abandon the NPD initiative until you can seriously rethink and revise it. It is imperative to generate a BMC that makes the NPD initiative seem investment-worthy.

© WIPO, 2024 / Attribution 4.0 International (CC BY 4.0) / The CC license does not apply to non-WIPO content in this publication. / Cover: WIPO / WIPO Reference RN2024-29EN

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

wipo.int