

[VIRTUAL GUIDE ON ENTREPRENEURSHIP
Learning unit 3 Developing a business model
Lesson 3

Developing a business model. Part 3



Innovative smart textiles & entrepreneurship

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Introduction

A well-structured business model canvas delves into the cost structure, revenue streams, key resources, key activities, and key partners, providing a comprehensive framework for designing a successful business strategy. These components interact synergistically, shaping a company's ability to create value, generate revenue, and ultimately thrive in a competitive marketplace.

1. Revenue Streams

Revenue streams, a fundamental aspect of a business model, are the vital sources from which a company derives income. Revenue streams refer to the sources of income a business generates from its offerings. It represents how a company monetizes its products, services, or other value propositions. They provide the financial lifeblood that sustains and fuels the organization's growth. At their core, revenue streams represent a company's strategic and tactical decisions on capturing value from its offerings.

Revenue streams answer the question: "**How does the company convert its value propositions into tangible financial gains?**". This conversion process is not uniform across all businesses; it's highly contingent on the nature of the products or services offered and the market dynamics in which the company operates.

Some common revenue streams for smart textiles companies include:

- **Product sales.** It encompasses income generated through the sale of physical products, digital goods, or services. Companies selling smart textiles, for example, derive revenue from selling their innovative clothing or fabric technologies to consumers or businesses.
- **Licensing fees.** Companies may monetize their intellectual property by licensing it to other businesses or individuals, receiving royalties. In the smart textile industry, this could apply to licensing the use of proprietary technology or patents related to smart textiles.
- **Subscription models.** Generating revenue through ongoing subscription fees for smart textile services, such as access to personalized workout plans or industrial monitoring systems.

For example, a smart textiles company that specializes in creating clothing for athletes may prioritize product sales as its primary revenue stream. On the other hand, a company that creates smart fabrics for industrial use may prioritize licensing fees as its primary revenue stream, as the cost of developing and manufacturing the technology may be high.

The key for success is diversifying revenue streams to reduce reliance on a single source and ensure financial stability. Maximizing revenue streams often involves pricing strategies, product bundling, and understanding customer willingness to pay.

2. Key resources

Key resources are the strategic assets, capabilities, or materials required for a business to operate and deliver its value proposition.

They are the essential elements that enable a company to create, deliver, and maintain its products or services. These resources can be tangible, like manufacturing facilities or technology infrastructure, or intangible, like intellectual property or brand reputation. They contribute to the business model's uniqueness, efficiency, and effectiveness. Identifying and leveraging key resources is vital for creating a competitive advantage. Companies must ensure they have the right resources in place to meet customer needs and execute core activities.

When developing a business model, it is important to identify and prioritize the key resources necessary to deliver the value proposition and generate revenue. This can help inform decisions regarding resource allocation and investment.

Some key resources for smart textile companies include.

- **Manufacturing equipment.** Specialized or adapted equipment is often required to manufacture smart textiles, such as spinning equipment, weaving, knitting, embroidery machines, coating machines, etc. Equipment required by non-textile components is also to be considered, for example, electronics or equipment for micro-encapsulation of phase change materials.
- **Materials.** Specialized, more expensive textile raw materials, fibers, yarns, and fabrics are often required to create smart textiles. These materials are processed to add or integrate non-textile components or materials: electronic components, conductive inks, microcapsules with phase-change materials, etc.
- **Skilled personnel.** Employees with highly specialized skills may be required at all levels to develop and manufacture smart textile products. The need for a specialized work force emphasizes the importance of education and training in the sector of smart textiles.
- **Intellectual property:** patents or proprietary technology related to smart textiles are a key resource for companies seeking to protect their competitive advantage. To obtain proprietary technologies and materials, companies must structure their activities and costs to invest in research and innovation.

3. Key activities

Key activities are the core actions and processes that a business undertakes to deliver its value proposition, meet customer needs, and achieve its strategic objectives. They represent the critical operational and managerial activities that drive the business model. Key activities directly contribute to creating, producing, delivering, and supporting products or services. Identifying and optimizing these key activities is essential for delivering value to customers.

Some key activities for smart textile companies may include the following aspects:

- **Research and development.** These are essential activities for new smart textile products and technologies. As discussed in the first part of this unit, several issues are yet to be solved to ensure the maturity of the smart textiles market. There is a lot of research carried out by research institutes and universities worldwide, resulting in many patents. Still, few results are transferred successfully toward the market. Many start-ups are currently on the market, but established companies are also innovating the sector.
- Manufacturing smart textile products. The process requires specialized textile equipment and technological processes. Companies manufacturing textile equipment have started adapting existing machinery and creating new models suited to process smart textiles. For example, ZSK Stickmaschinen GmbH, a German company producing embroidery machines, have developed embroidery technologies that can create complex e-textiles like sensors, electrodes, connectors to electronic components, etc.
- Marketing and sales. Promoting smart textile products and services to target customers and generating sales.
- Customer support: ongoing support and maintenance for smart textile products and services. Maintenance is a big problem for e-textiles, as cleaning, wear due to environmental conditions, sweat, etc., affect the connections and circuits.

4. Key partnerships

Key partners are external entities that are critical in a company's operations and value delivery. Key partnerships refer to the relationships a company establishes with other organizations to leverage their resources, capabilities, and expertise to deliver its value proposition and generate revenue. Partnerships can take various forms, including suppliers, distributors, co-manufacturers, and strategic alliances. Collaborating with the right partners can extend a company's reach, reduce costs, and enhance its value proposition. Key partners can provide access to resources, expertise, or customer segments that may not be readily available internally.

They contribute to increased innovation, competitive advantage, cost-efficiency, and market expansion. Cultivating strong relationships with key partners is essential for optimizing operations, expanding reach, sharing costs and risks, and unlocking new opportunities.

Key partnerships are essential for smart textiles; their development and manufacturing require a multidisciplinary approach. These partnerships may include the following aspects:

- **Suppliers.** Partners who provide key textile and non-textile materials or components required for smart textile products throughout the entire value chain. The type of suppliers depends on the technological process employed for manufacturing smart textiles. For example, a company producing smart clothing used to monitor vital signs

may need suppliers of conductive yarns to integrate them into the fabrics according to the design, and or conductive inks to be printed on the textile fabrics.

- **Technology partners.** Partners who provide access to specialized technology or expertise in textiles and other areas, like Producers of textile equipment, offering adapted or dedicated technologies.
- **Distribution partners.** Partners who provide access to distribution channels such as retailers or online marketplaces.
- **Research partners.** These partners, like universities and research institutes, provide access to research facilities or academic expertise to support product development and innovation. Other forms of access to research and innovation facilities are innovation hubs, like the open innovation hub established by the Danish Technological Institute dedicated to printed electronics or the Fabric Innovation Hub organized by MIT (USA) and maker spaces, organized either by the universities or by companies with a great interest in smart textiles, for example, Karl Mayer, a German company producing warp knitting technology.

Identifying research partners is a target of EU initiatives with EU-funded projects dedicated to fostering cooperation in smart textiles, like the WEAR Sustain project that developed a knowledge platform to create a European network of stakeholders and hubs in the sector.

5. Cost structure

The cost structure is the foundation upon which a business model is built and it refers to the composition and allocation of costs within a business. It represents the expenses incurred in delivering the value proposition and operating the business model. It outlines all the expenses a company incurs while operating. These costs can be categorized into various types, including fixed costs (such as rent and salaries), variable costs (like raw materials and production expenses), and semi-variable costs (such as utilities and maintenance). Understanding and managing the cost structure is crucial for profitability. Effective cost control can help maximize profits and reduce financial risks.

Cost structure impacts profitability, pricing strategy, and financial sustainability. It influences the overall competitiveness and ability to deliver value to customers.

Some common cost structures for smart textiles companies may include the following:

- **Research and development costs.** Expenses related to designing, simulating and testing, prototyping and improving smart textile products and technologies.
- **Manufacturing costs.** Expenses related to producing and assembling smart textile products: costs related to equipment, energy, labour, materials, and so on.
- **Marketing and sales costs.** Expenses related to promoting and selling smart textile products, including advertising, public relations, and sales commissions.
- **Customer support costs.** Expenses related to providing ongoing customer support and maintenance for smart textile products and services.

6. Testing and validating the business model

Testing and validating the business model is important in developing a successful smart textiles business. Ensuring efficient resource utilization and saving valuable time in the process of launching a new business centre on the continuous testing of its vital components. Rather than investing in the full-scale development of a solution, launching it into the market, and relying on the hope of customer adoption, it's paramount to seek early feedback from stakeholders. This iterative approach allows for progressively refining the business model and serves as a litmus test for its overall viability and potential for success.

Several methods can be used to test and validate the business model, including:

- **Market research.** Gathering information on customer needs and preferences, competitor offerings, and industry trends through surveys, focus groups, and other research methods. When conceptualizing a business model, there are often assumptions about market demand, customer behaviour, and pricing. Market research serves as a reality check. Businesses can validate or debunk these assumptions by collecting data and feedback directly from potential customers. This mitigates the risk of building a product or service that the market doesn't need and guides the business toward more accurate pricing strategies and market positioning.
- **Minimum viable product (MVP).** Developing a basic version of the product or service to test in the market and gather feedback on its viability and potential for success. The MVP is just the starting point in the journey of business model testing. Market research facilitates an iterative approach, where feedback from initial customers informs subsequent product or service iterations. This iterative process enables businesses to refine their offerings, addressing identified weaknesses, enhancing strengths, and aligning more closely with customer expectations. A dynamic cycle of testing, learning, and adapting ultimately leads to a more robust and customer-centric business model.
- **Prototyping.** Prototyping goes beyond functionality testing; it's also critical for optimizing the user experience (UX). By observing how users interact with the prototype, businesses can identify pain points, usability issues, and areas where the design can be improved, ensuring that the final product works and delivers a seamless and delightful user experience, pivotal for customer satisfaction and retention. Prototyping also serves as a risk mitigation strategy by uncovering potential flaws or challenges early in development. By addressing these issues during the prototype stage, businesses can save substantial time and resources that would otherwise be spent on rectifying problems after a full-scale product launch.
- **A/B testing.** A/B testing is the cornerstone of data-driven decision-making in business model validation. By rigorously comparing different product or service variations, businesses collect quantitative data on customer behaviour, preferences, and responses. A/B testing doesn't stop at the initial product launch; it's an ongoing process that drives iterative product development. As customer preferences evolve and

market dynamics change, businesses must adapt to stay competitive. A/B testing allows for continuous refinement, ensuring that the product or service remains aligned with customer expectations. This adaptability is crucial for long-term success in dynamic markets. In summary, A/B testing is a data-driven methodology that empowers businesses to make evidence-based decisions, drive iterative product development, reduce risks, and gain a competitive edge. It's an indispensable tool in business model testing and validation, fostering continuous improvement and alignment with customer needs.

Testing and validating the business model can help identify areas of strength and weakness in the value proposition, customer segments, and revenue streams. It can also provide valuable feedback on pricing, distribution channels, and customer acquisition strategies.

Want to learn more about this topic?

In *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers* Alexander Osterwalder, Yves Pigneur you will find a visual framework for designing, analysing, and innovating business models. The book offers practical tools and insights to help entrepreneurs and businesses create value, adapt to changing markets, and stay competitive.

Summary

Creating a business model canvas is a multifaceted endeavor, encompassing various critical facets that collectively shape a company's success. First, strategic resource utilization is pivotal, as it involves carefully allocating key resources like technology, human capital, intellectual property, and financial assets to align with business objectives. This efficient use of resources enhances value delivery and competitive advantage. Next, optimizing core activities is essential, as it allows companies to identify and refine the key processes that contribute directly to creating, delivering, and capturing value. This streamlining of operations reduces inefficiencies and heightens customer satisfaction. Moreover, cultivating strong partnerships can be a strategic game-changer, extending a company's reach, broadening its offerings, and creating new revenue streams. Collaborations tap into external expertise and resources, fostering innovation and market expansion. In the financial realm, balancing revenue maximization and cost management is crucial. This involves diversifying revenue streams, optimizing pricing strategies, and controlling expenses without compromising quality or customer satisfaction.

Lastly, rigorous testing and validation form the cornerstone of refining a business model. Market research provides insights into customer needs and market trends, guiding business decisions. Developing Minimum Viable Products (MVPs) and prototypes allows experimentation and the collection of invaluable user feedback. A/B testing further enhances

offerings based on data-driven decisions, ultimately boosting customer satisfaction and revenue generation. In sum, creating a business model canvas is not a theoretical exercise but a dynamic process that necessitates strategic resource allocation, core activity optimization, partnership cultivation, revenue maximization, cost management, and rigorous testing and validation. These interrelated considerations collectively shape a business's ability to thrive in a competitive market, fostering sustainable growth and profitability.

References

Aulet, B. (2013, August 12). *Disciplined Entrepreneurship: 24 Steps to a Successful Startup*. John Wiley & Sons.

Bland, D. J., & Osterwalder, A. (2019). *Testing Business Ideas: A Field Guide for Rapid Experimentation*. John Wiley & Sons.

Blank, S., & Dorf, B. (2020). *The Startup Owner's Manual*. John Wiley & Sons.

Bodea, T., & Ferguson, M. (2014). *Segmentation, Revenue Management and Pricing Analytics*. Routledge.

Osterwalder, A.; Pigneur, Y. (2010) *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*.

Partnership



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