

8. Business strategies for enterprise

Business models and finance

Business strategies and models

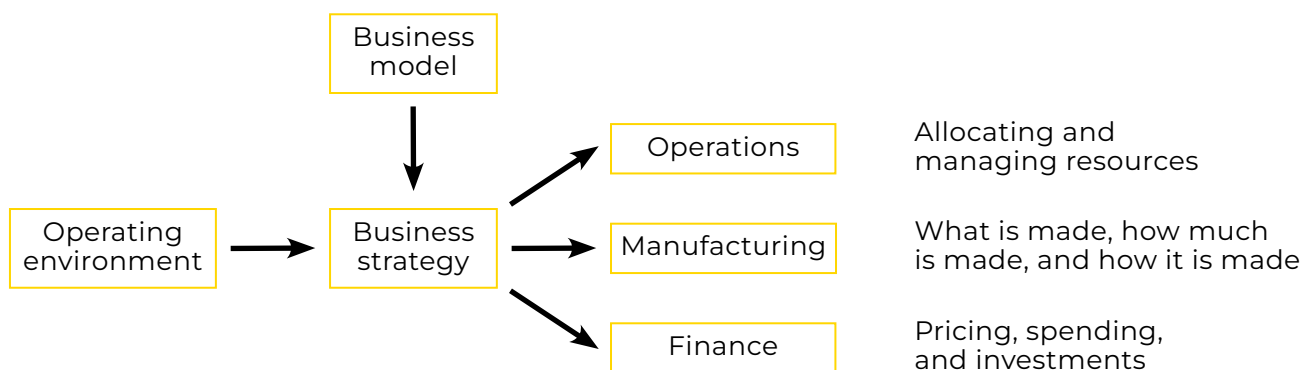
Good ideas require good execution. This is why potential investors place such emphasis on a strong strategy for dealing with competitors and turning the idea into a well-executed product and strong sales. The decisions required need a combination of engineering and business knowledge and understanding.

Business strategies deliver your model

A strategy is a plan of action. It describes how you will focus your attention, efforts, and resources to achieve a goal or respond to an issue. **Your business strategy plans how you will deliver your business model and outperform your competitors.**

Your operating environment includes everything that might affect your business, from the wider economy to social, political and technological factors, customers, and competitors.

Strategic analysis researches your operating environment to understand how it affects your enterprise. This process helps your strategy to make informed decisions about operations, manufacturing, and finance.



The following pages explore each element in more detail and provide contrasting examples.

Engineering is a highly competitive industry. Your **strategic decisions must help the enterprise outperform its competitors** by identifying and maximising:

- **competitive advantages:** things that help you to produce better or cheaper products, for example, a patent for a technology or manufacturing process
- **core competences:** engineering skills, knowledge, and capabilities that support your competitive advantage, for example, unique research data or excellence in design.

An enterprise's mission, vision, and values are fundamental and slow to change. In contrast, business strategies are nimble and may focus on short-term (one year), medium-term (two to five years), and long-term (five to 10 years) planning.

Check your understanding:

1. How might a business strategy need adapting if a competitor appears?

Strategy and the operating environment

The external influences in your operating environment are outside your direct control. They include the following factors.

Political	government policies that affect tax, trade, employment, funding
Economic	spending, inflation, employment, exchange rates
Social	demographics, health, ethics, trends, cultural influences
Technological	innovation, research, intellectual property (eg patents)
Legal	legislation (eg health and safety, employment, trade, environment)
Environmental	climate change, sustainability, pollution, waste reduction

Together these external influences will increase or decrease market demand for your product or service, expanding or shrinking markets, creating new markets, or causing them to disappear. These examples are not comprehensive, and every operating environment presents ever-changing markets, opportunities, and risks.

<p>Opportunities are where growth is possible, including:</p> <ul style="list-style-type: none"> • greater sustainability • artificial-intelligence (AI) led processes • favourable legislation • a less-polluting material • a need not yet met. 	<p>Risks are where contraction is possible, including:</p> <ul style="list-style-type: none"> • a stagnant economy • a new competitor • tighter regulation • shrinking market size • carbon emissions.
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Your business strategy describes your responses to take advantage of opportunities and to manage or pivot in response to risks. An unresponsive business will fail.

Example

A political party announces legislation to provide tax breaks for sustainable energy generation while increasing tax on carbon-emitting energy generation.

This is an **opportunity** for companies in the renewable energy sector to grow, but a **risk** because it will encourage new competitors into the market, to which existing companies will need to respond.

It is a **risk** for companies connected to fossil-fuel generation because their customer market will shrink, but an **opportunity** to pivot into carbon-capture technologies or renewables.

Check your understanding:

2. What social trends do you think will influence engineering startups in the coming years?
3. What opportunities does climate change create for innovative engineering startups?

Strategy and the organisation

Your business strategy describes how you will respond to external influences through your decisions about what the business can control: your operations, manufacturing, and finance.

Operations (allocating and managing resources)	Manufacturing (what is made, how much, and how)	Finance (pricing, spending, and investments)
people and teams sites equipment materials intellectual property	equipment processes capacity inventory outsourcing	product prices overheads marketing research new facilities investor returns

These examples are not comprehensive. Every enterprise has a different mix of resources, manufacturing requirements, and financial options. Enterprises that offer software or AI/machine-learning systems will not manufacture products but will instead focus on distribution, hosting, and upgrade development/roll-out, for example.

Example

An entrepreneur is developing a business strategy to use robotics and automation to help them scale up to meet high customer demand for their products: autonomous caddies that move stock and parts on demand to pre-selected locations in small manufacturing environments. Their strategy might include the following main responses:

- **Operations:** The business will need larger facilities, which may mean a move to a bigger site. They will need to invest in automation and training to enable their existing staff to fill new roles to operate and maintain the equipment. They may also need new staff.

- **Manufacturing:** The key decision will be how much capacity to add: this depends on the reliability of the strategy's understanding of its growing market and sales opportunities.

The entrepreneur could investigate outsourcing production of some parts to reduce the investment needed.

- **Finance:** This investment must be funded. The entrepreneur will need to make a business case to investors or the bank, and will need to factor in how this investment is repaid. The overheads will change as the energy and maintenance costs of the new capacity are added.

Check your understanding:

4. In the example above, what is the opportunity that the business strategy is responding to?
5. What are two main risks that the entrepreneur will need to respond to in the strategy?

Case study: Competitive advantage

Background

MachineCo is the sole UK distributor of a unique range of small additive CNC machines. Instead of removing material from a block, the machines create parts by heating fine metal powder with a laser. Their customers are small engineering companies that need low-volume, detailed machining.

The owners have decided to set up a new enterprise to offer CNC machining of low-volume product runs, to operate alongside the sales and servicing business. Customers will email CNC files and the company will use the latest machines to provide a machining service that is difficult to achieve using competitors' machines.

The owners are developing a business strategy for the new enterprise.



Your task

1. What is the opportunity the owners have identified? Describe at least two external factors in the operating environment that might create this opportunity.
2. What competitive advantage might the strategy identify, and what are three core competencies the enterprise will need to support this?
3. Briefly describe three decisions the owners will need to make about their operations, manufacturing, and finance.
4. Identify five risks the owners might need to respond to, including at least one risk for each of operations, manufacturing, and finance.

Extend your learning

- Research some engineering companies you may wish to work for. Can you identify (or guess) what their competitive advantage is?
- Consider what factors an engineering startup may need to consider over a one-, five-, or 10-year planning period as it develops its strategy.

Answers: Check your understanding

These are example answers – your own suggestions may differ.

Business strategies deliver your model

1. The business's response will depend on what the competitor is offering. It may need to review its pricing to compete on cost or consider changes to its revenue model if the competitor offers a lease or subscription alternative. It may need to respond to innovations by developing and launching new products or services to remain competitive. These might aim to replicate these innovations (where IP law allows), or to create their own new forms of customer value.

Strategy and the operating environment

2. Some social trends that might influence engineering startups include:
 - opportunities to use virtual reality (VR) to work, socialise, and relax
 - biomonitoring for health and sports performance
 - transport and deliveries around livable '15-minute' cities and towns
 - personal aspirations to be more sustainable
 - personalised clothing and 'one-off' production.

3. Climate change presents many opportunities for startups where processes that rely on fossil fuels could be 'decarbonised' to use renewable-energy alternatives. This includes transport, manufacturing, home energy use, farming, and food production. At the same time, engineering will play a central role in helping mitigate the effects of climate change, for example, adaptations to rising sea levels, droughts, heatwaves, or other extreme weather events.

Strategy and the organisation

4. The opportunity that the business strategy must respond to is high customer demand for automated stock movements in small manufacturing environments.
5. Two risks are that this may prompt new startups that increase the competitive environment, and that the business over-invests to meet demand that is not sustained. The business strategy must therefore research both possible competitors and long-term demand forecasts. This can inform product development that keeps the company competitive and investment at the right scale. The strategy might suggest more than one phase of scaling up over time.

Answers: Case study

These are example answers – your own suggestions may differ.

1. The owners have identified that many small engineering companies need small, precision parts to be machined. Two external factors that might create this opportunity are the high cost of buying suitable CNC machines and an uncertain economic environment, which means companies may not be confident that purchasing a machine is a good financial decision.
2. The new company's competitive advantage might be the unique CNC machines it can use and the types of parts they can produce, which competitors might not be able to match easily.

Core competencies: operating the CNC machines to a very high standard, communication and collaboration with customers, managing the safe delivery of finished parts.

3. Three decisions the owners will need to make might include:
 - operations: how many machines to allocate to the new enterprise at first and how many staff to employ as operators, customer support, and logistics
 - manufacturing: how to source blanks of the right materials for customer parts, for example, partnering with a high-quality metals supplier
 - finance: how to price their machining service and how much to spend on marketing that reaches and persuades potential customers.

4. Five risks the owners might need to respond to include:

- competition: other CNC service providers may pursue the market for small, precision parts
- competitive advantage: is the company's unique access to these machines secure?
- operations: meeting demand while not over-investing in equipment and staff that are under-employed; being able to scale up as demand grows
- manufacturing: the cost of keeping material stock inventory
- finance: competing on price as well as on service and quality.