

External environment and strategy analysis

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9. External environment and strategy analysis: Analytical methods related to market environment and strategy formulation

- PEST analysis: Analyze the political, economic, social, and technological environments.
- Five Forces analysis: Analyze the threat of new entrants, the threat of substitutes, the bargaining power of buyers, the bargaining power of sellers, and the rivalry between competing companies.
- Value Chain analysis: Analyze value creation in each process of corporate activities and identify competitive advantages.
- Supply Chain Management: Analyze the efficiency and optimization of the entire supply chain.

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PEST analysis

- PEST analysis (Political, Economic, Social, Technological Analysis) is a method for analyzing factors in the external environment, focusing mainly on four factors: politics, economy, society, and technology. → Rather than the code for PEST analysis, the process of collecting and analyzing information about each factor is more common.
- This is not an example for conducting a PEST analysis using Python, but an example of a method for collecting information about each factor: The actual code for PEST analysis mainly consists of information gathering, data organization, and part of the analysis.

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PEST analysis

- The following examples show how to gather information for each factor.
- These methods are just examples, and it is important to select the appropriate information gathering method for your actual project and purpose.

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P Political	E Economic	S Social	T Technological
- Government incentives of up to US\$10,000 for private purchase of new battery electric vehicles or plug-in hybrids - Government goal to raise the annual production capacity to 2,500,000 plug-in hybrid by the end of 2020 - Road Space Rationing scheme (New energy vehicles are exempted) - Vehicle quota system that inhibits the purchasing of new conventional autos.	- Increasing inflation rate - Increasing labor cost - The city's economic outlook is healthy according to the key economic indicators - Stable foreign currency exchange rate - September is the traditional peak season of automobiles - Rapidly increasing lithium-ion battery price	- Younger consumers are open to new technologies 75% of citizens need to travel an average of up to 35 km on weekdays - Consumers prefer a lower maintenance cost - Environmental protection is a key consideration to most consumers - Most consumers found the government subsidies very attractive - To recharge vehicles at home or workspace is impractical to most people due to the residential design - Most drivers regard new energy vehicle technology as unsafe and immature - Serious traffic jam demotivates people's desire to buy new vehicles	- Comparing to internal combustion engines, electric vehicles are more environmental friendly - Slow charging - Battery range is a concern - Lack charging stations

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Five Forces Analysis

- Five Forces Analysis is a business strategy model proposed by Michael Porter, used to evaluate the competitiveness of an industry.
- This is not an example for conducting a Five Forces Analysis using Python, but a simple code that shows the idea of Five Forces Analysis.
- Displays an evaluation of each element based on the factors of the business environment
- Specific businesses and industries require the collection of data and information and more detailed and objective analysis
- Five Forces Analysis is useful for understanding the competitive situation of an industry and considering business strategies

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Five Forces Framework is a method of analysing the competitive environment of a business.

- It draws from industrial organization (IO) economics to derive five forces that determine the competitive intensity and, therefore, the attractiveness (or lack thereof) of an industry in terms of its profitability.
- An "unattractive" industry is one in which the effect of these five forces reduces overall profitability. The most unattractive industry would be one approaching "pure competition", in which available profits for all firms are driven to normal profit levels.

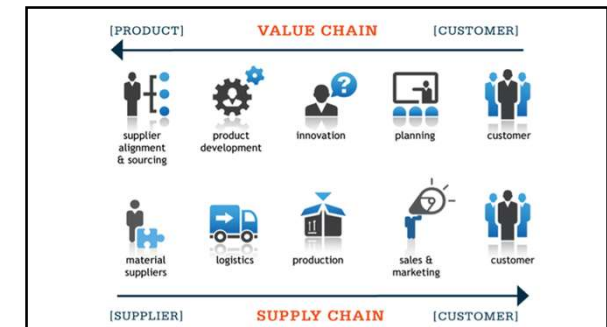


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Value chain analysis

- Value chain analysis is a method to understand the process of creating value in a company and evaluate which activities contribute to customer value.
- Value chain analysis does not generally have a dedicated code, and is primarily a method to understand and evaluate business processes and value flows.
- It is not a simple code example to explain the concept of value chain, but an explanation to show the concept.

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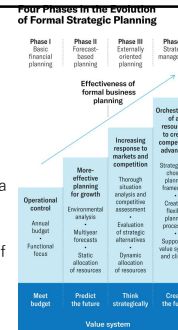
Strategic decision-making for companies, helping to improve customer value and establish a competitive advantage

- Classifies a company's value chain into primary activities and support activities and displays a description of each activity.
- Value chain analysis is used in **strategic decision-making for companies, helping to improve customer value and establish a competitive advantage**.
- Rather than implementing it as code, visual and documented explanations are usually used to understand the value chain and make strategic considerations.

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Poor decision making

- According to Harvard Business School, more than 30,000 new products are launched annually, but 80% of these fail as a direct result of poor decision making.
- Businesses face many opposing pressures which make **effective strategic decision making** difficult. Bad decisions are made for a variety of reasons – from the lack of business vision or purpose, the complexity of the process and short-term time constraints to lack of (or too much) information, poor situational awareness, poor comprehension of risk and strategy, organisational complexity, group dynamics and inherent bias which can mean decisions are made that are not based on critical thinking and reason but rather on 'gut' instinct.



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Value chain analysis

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Supply Chain Management

- SCM (Supply Chain Management) is a process or tool for efficiently managing the entire supply chain from production to sales.
- It is difficult to provide a concrete example of SCM code → Here is a simple example of inventory management: Implement a class to track product inventory

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Supply Chain Management

- The InventoryItem class represents the inventory information of a product, and the Inventory
- Management class provides methods for managing the inventory.
- Inventory management can be complicated based on the actual business requirements.
- Comprehensive code for managing the entire SCM needs to be designed to suit the individual business process.

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Systems, Applications, and Products in Data Processing

- SAP (Systems, Applications, and Products in Data Processing) is an enterprise software provider for managing integrated business processes in companies: SAP offers a variety of modules that can be customized and extended for specific business processes → To use SAP's API to manipulate data, you need an API key to access SAP modules and services.
- Example of simple Python code to retrieve data using SAP S/4HANA Cloud's OData API (Authentication, permissions, API endpoints, etc. when accessing the SAP environment actually depend on the project and instance, so you need to build the code in advance according to SAP's API documentation and environment)

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Systems, Applications, and Products in Data Processing

- Use the requests library to access the OData API of SAP S/4HANA Cloud and retrieve data.
- This code depends on the specific SAP environment and API endpoints.
- In a real project, you will need to build more specific and secure code based on the SAP API documentation and the provided authentication information.

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Generative AI

- There are various types of generative AI, such as GAN (Generative Adversarial Network), VAE (Variational Autoencoder), and language models (GPT, etc.).
- The code for which generative AI is shown depends on the specific generation task and type of model.
- Basic code example of GAN (Generative Adversarial Network)

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Summary

- Python code as a tool for business analysis, financial analysis, marketing analysis, etc. can be created relatively easily by using libraries and frameworks.
- Running Python code requires environment settings, which is tedious work.
- The analysis method introduced here does not require heavy resources, so we recommend running it on Google Colaboratory, which does not require environment settings.
- It takes a lot of time to prepare the data to be entered into the analysis tool → Data cleaning and cleansing are also important.

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