

# Topic 1: Digital Immersion

8 february 2022 - 1 march 2022

## Welcome to the digital transformation for internationalization course!

This first topic aims to give you a sneakpeak of the topics that will be covered throughout the programme so we can all start on the same page and thus start or continue building your digital transformation path.

**Contents:** value chain, DIKW hierarchy, macro trends

The **objective** of this document is to present the main concepts and aspects of digital transformation that will shape the other topics proposed in this programme, so that it will be possible to adopt digital transformation from a strategic thinking and apply it to all areas of the business.

**¡Get ready! It's time to start learning together**

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## Value Chain

### What is a value chain?

It refers to a set of activities that are carried out in a systematic way, to add value to the final products or services offered for sale.

### Value Chain Analysis (VCA)

Value chain analysis is a dynamic management tool that classifies hundreds of business activities into nine broad categories.

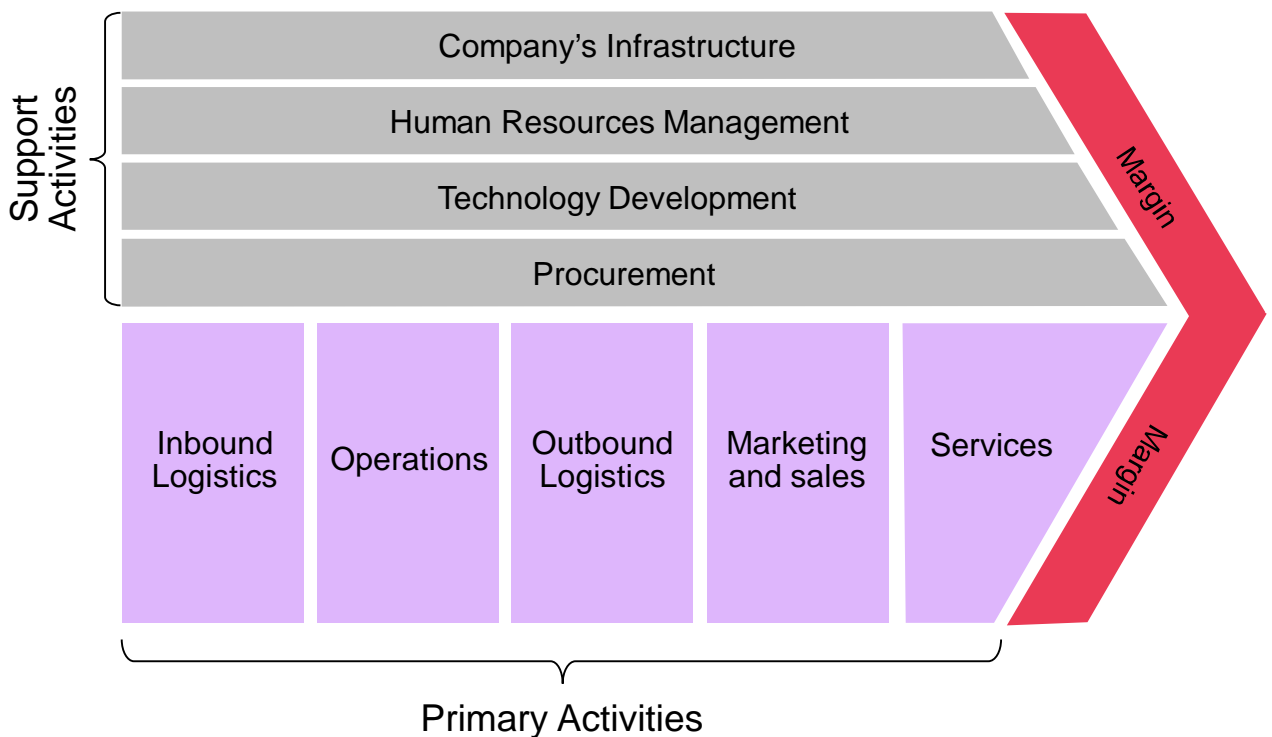


Figure 1. Value Chain

## Value chain

### Primary activities

A company has five primary activities necessary for the creation, sale, maintenance and support of a product or service.

These activities are placed in chronological order, i.e. inbound logistics (storage of raw materials, data collection, etc.) comes before marketing and sales (advertising and selling the final product).

#### Inbound logistics

All activities necessary to receive, store and disseminate inputs, such as raw material storage, warehousing, supplier relations, inventory control, transportation, customer relations, data collection, etc.

#### Operations

Operations are the activities necessary to convert raw materials and resources into a final product or service. This would include machinery, assembly lines, equipment maintenance, etc.

#### Outbound logistics

All activities related to the physical collection, storage and distribution of products, such as packaging, shipping, order processing, scheduling, product picking, etc.

#### Marketing and sales

Activities necessary to ensure that a) customers are aware of your product or service, and b) have the means to purchase it. This includes advertising, inbound and outbound sales, channel selection, channel service, promotion, pricing strategy, etc.

#### Services

The last segment of primary activities refers to the way in which after-sales support is provided to customers, such as product training, warranties, repair, product supply, etc.

## Value chain

### Supporting activities

Ensure that all primary activities function as well as possible. As can be seen in the value chain model, the supporting activities simultaneously cover all five primary activity segments.

#### **Company's infrastructure**

This refers to all the management, financial and legal systems that a company has in place to make business decisions and manage resources effectively.

#### **Human resource management**

This activity includes the recruitment, training and rewarding of employees. Retaining talent in today's "knowledge economy" can be crucial to maintaining a competitive advantage.

#### **Technology development**

This refers to all the technology needed to turn your inputs into outputs. It is also the area of R&D, product design, market research and product development.

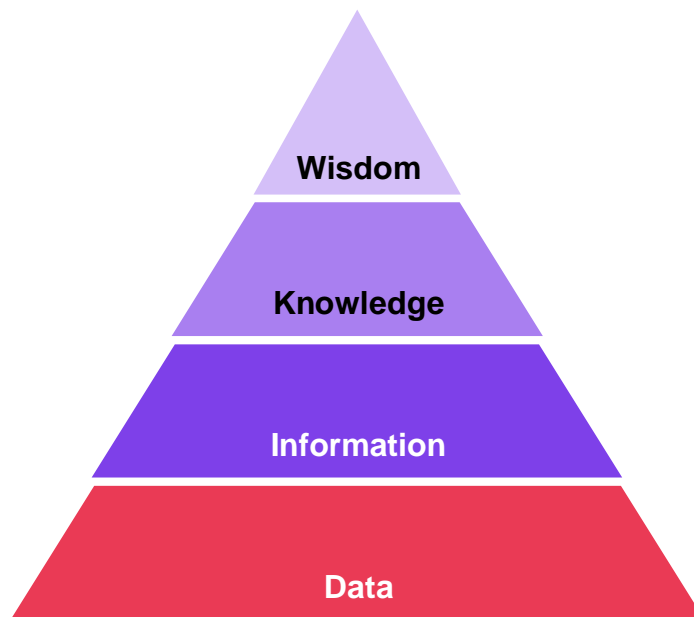
#### **Procurement**

This is also known as "purchasing" and involves sourcing new suppliers, sourcing raw materials and basically negotiating the best possible prices.

## DIKW hierarchy

Also known as knowledge hierarchy.

This model originally based on the text written by Russell Ackoff (a pioneer in strategic thinking and operations research) "From Data to Wisdom" (1989), describes the hierarchical transformation of data into information, knowledge and ultimately wisdom.



*Figure 2. DIKW Hierarchy*

The model posits that the effective use of data, information and knowledge would lead to wisdom that can assist in strategic decision making to transform the value chain, resulting in optimal market value.

As the DIKW hierarchy increases so does the value in the value chain.

The DIKW model should be applied iteratively as the knowledge generated will enable descriptive and predictive analyses that will guide the transformation of the value chain, from the identification of data sources and technological enablers to the mapping of possible intervention points.

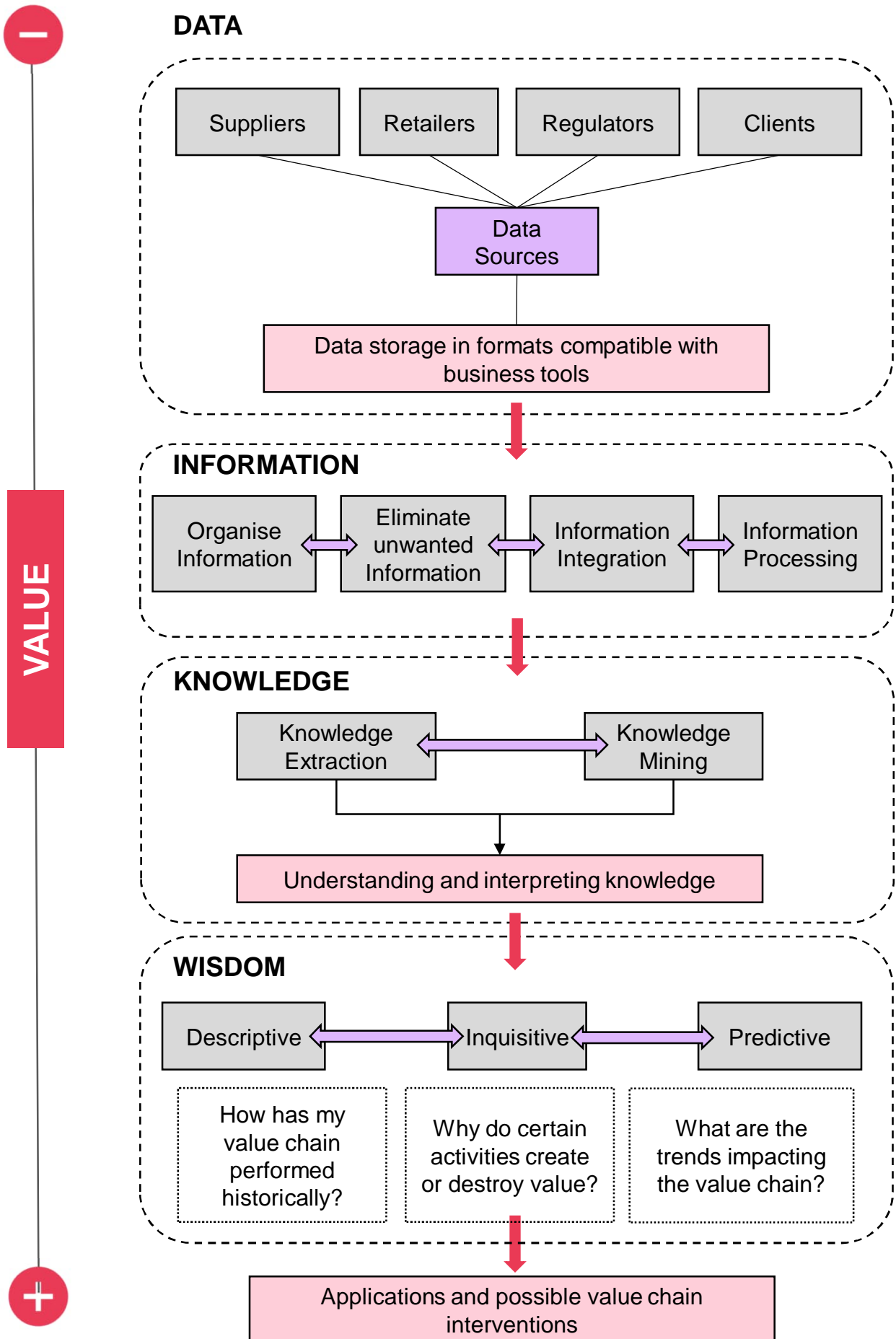


Figure 3. Framework for transforming the value chain based on the DIKW hierarchy

## The new value chain

The above concept allows us to broaden the traditional conception of the value chain to include a new group of activities "Information Systems" that are key to delivering customer value in the digital age.

This new activity is then in charge of constantly searching for the right combination of people, processes and technology to ensure the optimal market value, increasing the value for the customer or consumer and generating a competitive advantage.

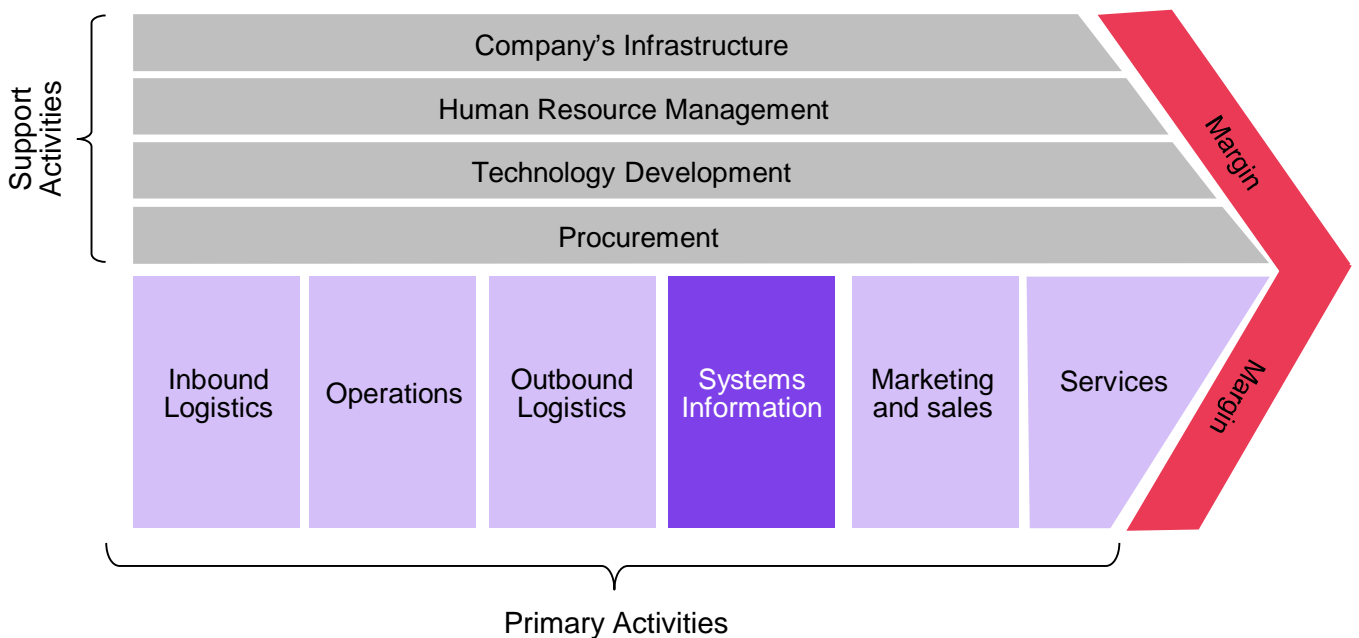


Figure 4. The new value chain



## **Macro trends transforming the value chain**

### **The connected supply chain**

Recent advances in supply chain technology provide companies with real-time information on the status and location of assets. Real-time tracking can be used to measure transportation performance and delivery route inefficiencies. Automation and business intelligence technologies have been instrumental in improving adaptability and optimising the supply chain for variable customer demand. Internet-connected sensors can detect supply chain disruptions or quality issues and address the problem or adapt production flows in real time with minimal human intervention. When done well, the results include increased visibility, responsiveness and resilience across the supply chain ecosystem.

### **Demand-driven supply chain management**

The digital age means greater availability of data and greater ability to extract information from it. Integrated sensor technologies (IoT) can monitor, collect and communicate information from the environment and respond to remote instructions. Intelligent analysis of this data can greatly improve the accuracy of demand forecasting and replenishment. Predictive analytics and machine learning can take these additional variables into account to reliably predict demand, recognise patterns and anticipate changes.

### **Penetration of new digital technologies and formation of the digital thread**

The digital thread is a communication framework for sharing information with all upstream and downstream data consumers, creating a constant feedback loop. In addition to connecting data and systems, the digital thread requires the integration of workflows and people. Establishing this digital thread between suppliers, the business and customers is a key point in the transformation of the value chain, where suppliers and customers collaborate to achieve efficiencies.

## Macro trends transforming the value chain

### Co-creation of value

The new value chain is based on information sharing, including constant, two-way communication and visibility between businesses on everything from inventory conditions, supply status and shipment delays to future factors that predict changes in demand. Best practices are shared with internal and external stakeholders to increase efficiency and improve interoperability. End-to-end visibility is largely a function of being able to access data across enterprise networks. This enables synergistic co-creation of value, where savings and opportunities are generated and shared across trading partner organisations.

### Evolving customer expectations

Many companies are re-evaluating their distribution models as consumer buying habits change. Today's customers have little tolerance for delays or incorrect orders, which means that logistics and distribution - from warehousing to order fulfilment to shipping - must be done almost immediately. As a result, some organisations are moving from single-location care to centralised distribution and real-time inventory management, allowing order points to be less tied to warehouse inventory levels and more responsive to demand. As the majority of customer transactions moved to the Internet during the COVID-19 pandemic, companies are following the lead of retailers and building their own e-commerce capabilities. Some business-to-business (B2B) organisations may even decide to move to direct-to-consumer (DTC) and leverage retailers' strategies to enhance their digital customer service capabilities. This includes the creation of digital order forms and online shop fronts, enabling remote communication with customers. By leveraging virtual or augmented reality tools, companies can even offer simulations of site visits and showcase new product or service offerings.

## Macro trends transforming the value chain

### Growth of the gig economy

This is a general term that refers to non-standard work arrangements, including temporary or contract work. Although this type of work is not new, it has grown and attracted renewed attention recently with open call online work platforms. Many workers prefer flexibility, diversity of income sources and the ability to control their working hours and activities. Other workers use technology platforms to identify short-term and sometimes unskilled personal service jobs for people looking for a service provider through websites or apps; for example, Uber drivers, Rappi/iFood food delivery workers, among others.

### Changing nature of work

The digital age is altering labour markets and changing skill needs. Technological advances - automation, AI and other emerging technologies - change the nature of work and employment. New models of work are emerging; work is increasingly flexible, decentralised and knowledge-based, driven by self-fulfilment and growing entrepreneurship. Digital and socio-emotional skills are increasingly necessary to thrive in the new world of work.

Work is becoming more cognitively complex, more collaborative, more dependent on technological competence, more mobile and less dependent on geography.

### War for talent

Companies have been fighting to attract the best candidates for years and one of the best ways to maintain a competitive advantage is to start building a strategic talent pipeline. This means anticipating hiring trends, as well as being open and flexible to new work patterns. Until very recently, the idea that employees could be equally productive at home was a radical idea, but here we are today in a completely revamped working and hiring environment.

## Macro trends transforming the value chain

### Evolution towards sustainable logistics

Today, supply chain leaders are using different methods to go green and maintain - or increase - profits for their companies:

- **Green service model:** You can find everything from green warehouse lighting to alternative energy sources as a service. That means you don't have to take on the initial expense, risk and ongoing maintenance of green solutions. An expert service provider takes care of everything for a monthly fee.
- **Think outside the box:** It is entirely possible to combine green distribution practices with the aim of increasing cost and profit efficiency. For example, lighter packaging reduces weight and freight volume, thus cutting costs and energy use; shipping large volumes of goods by sea rather than transporting smaller quantities by air is a cost-saving and more sustainable option.
- **Circular economy:** This involves giving waste materials a new life. For example, companies could convert recycled content into environmentally friendly products or packaging, or sell by-products instead of discarding them.

### Labour shortages

As a country's economy grows and evolves, industries become more mechanised and require fewer workers, and new industries replace older ones.

The demand for new skills can lead to temporary labour shortages, so a free flow of global talent that can solve short-term problems should be welcomed. But if these new industries offer higher wages, potential employees will be trained to meet the new demand in the longer term.