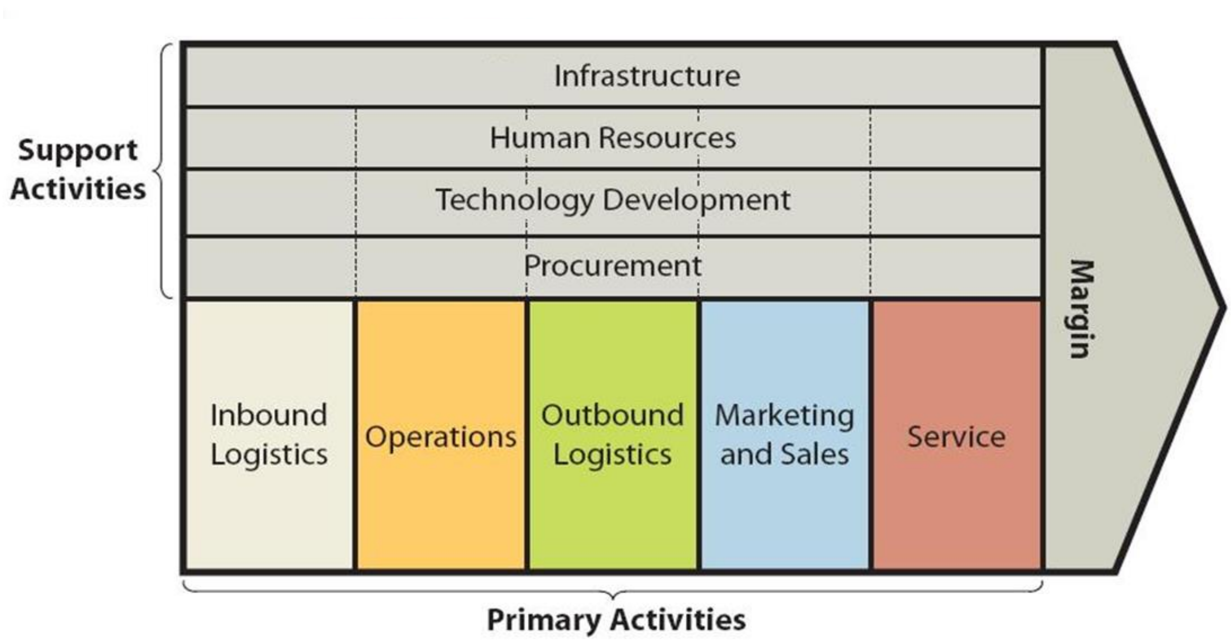
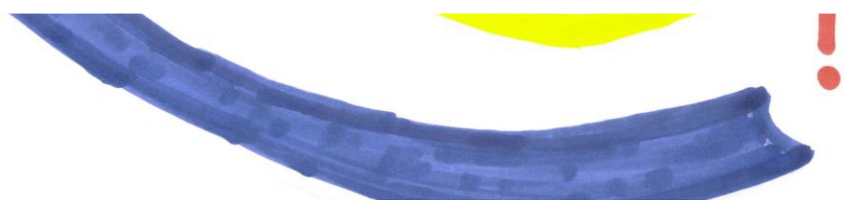
# Value Chain and Value Stream Mapping

A **value chain** is a set of activities (value generating) that an organization performs in order to deliver a valuable product or service for the market.

Michael Porter in his 1985 book **Competitive Advantage** introduced the concept of generic value chain model that comprises a sequence of activities found to be common to a wide range of firms. Porter identified primary and support activities.



**Primary Activities**

- **Inbound Logistics**: Arranging the inbound movement of materials, parts, and/or finished inventory from suppliers to value addition hub (manufacturing/assembly plants and/or warehouses/retail stores)
- **Operations**: Concerned with managing the process that converts inputs (in the forms of raw materials, labor, and energy) into outputs (in the form of goods and/or services)
- **Outbound Logistics**: Process related to the storage and movement of the final product and the related information flows from the end of the production line to the end user
- **Marketing and Sales**: Selling a product or service and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large

- **Service**: Includes all the activities required to keep the product/service working effectively for the buyer after it is sold and delivered

**Secondary Activities**

- **Infrastructure**: Consists of activities such as accounting, legal, finance, control, public relations, quality assurance and general (strategic) management.
- **Technological Development**: Pertains to the equipment, hardware, software, procedures and technical knowledge brought to bear in the firm's transformation of inputs into outputs.
- **Human Resources Management**: Consists of all activities involved in recruiting, hiring, training, developing, compensating and (if necessary) dismissing or laying off personnel
- **Procurement**: the acquisition of goods, services or works from an outside external source

The appropriate level for constructing a value chain is the business unit or business process, not division or corporate level. Products and/or services pass through a chain of activities in order, and at each activity the product and/or service gains some value. The chain of activities gives the products more added value than the sum of added values of all activities.

Value analysis involves assessing each process step through the eyes of the customer and determining whether the step is:

- **Value-adding activities (VA)**—VAs are activities directly satisfy customer requirements and the ones for which the customer is willing to pay.
- **Nonvalue-adding activities (NVA)—**NVAs consume time and/or resources, but do not directly satisfy customer requirements or the ones for which customers will not be willing to pay. Typical non-value adding activities include reworking, inspection, internal documentation and any of other wastes.
- **Value-enabling activities (VE)—**VEs are considered NVA from a customer perspective but can satisfy a regulatory/compliance issue or other business requirements. These are also called “nonvalue added, but necessary,” “business value add,” or “nonvalue added, but required.” For example, encryption required to satisfy regulatory compliance reporting is a value-enabling activity.

In software development and maintenance, the following are wastes and should be avoided:

1. Partial done work
2. Building the wrong feature or product
3. Task switching (Waiting/multitasking)

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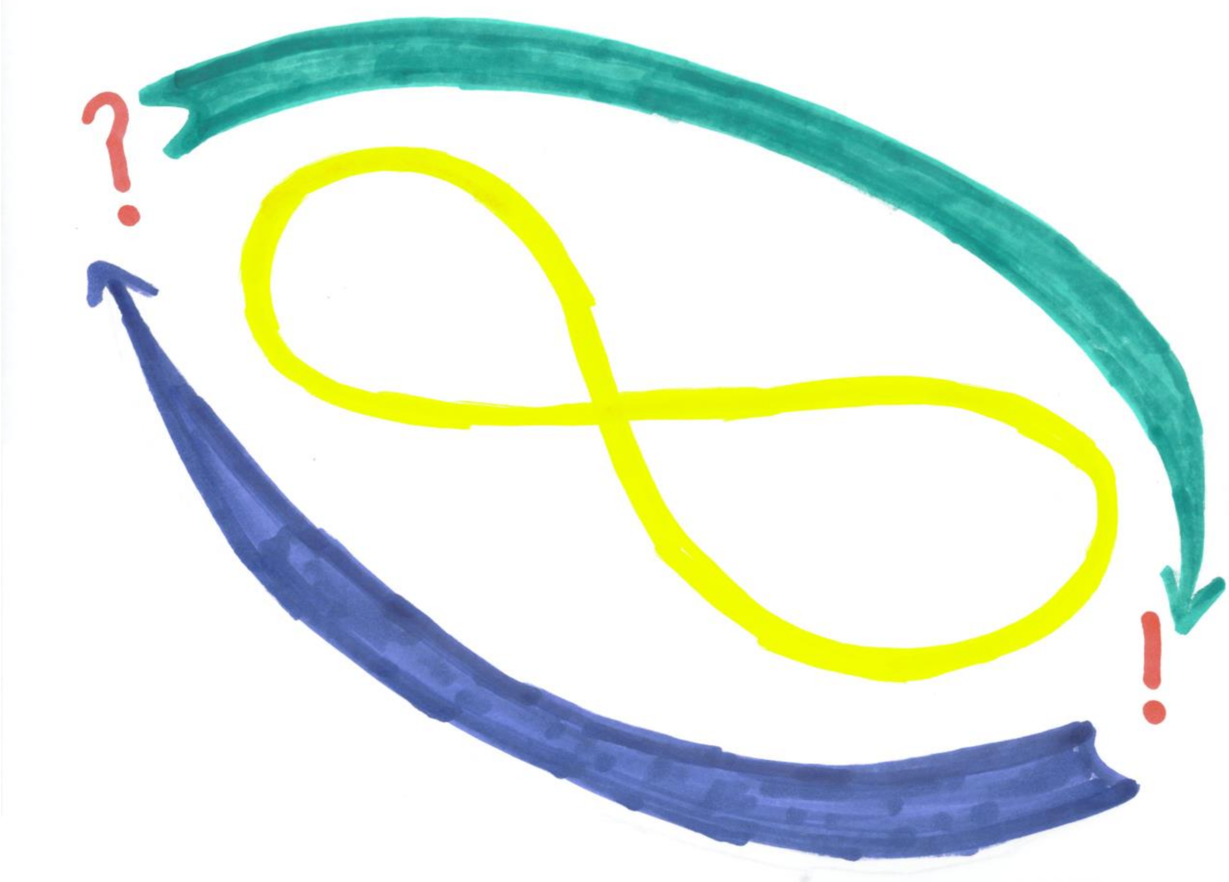
4. Over engineered solutions
5. Defects
6. Ineffective communication
7. Psychological distress
8. Knowledge loss
9. Management activities

**Value Stream Mapping** is an attempt to map a value chain. It can be employed for continuous process improvement by visual depiction of current (As-Is) state and desired future (To-Be) state.



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