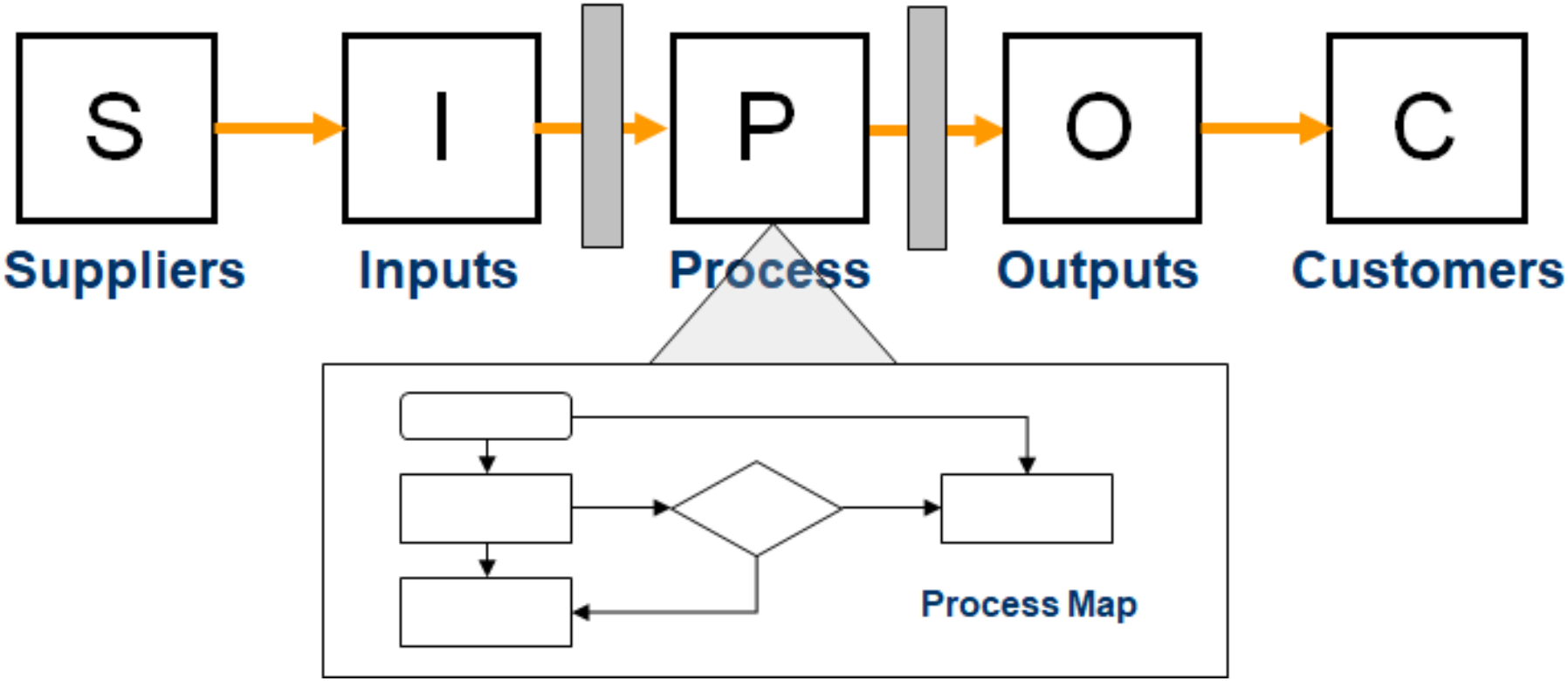
Level 5 – Continuous Improvement with Industry 4.0

SIPOC Mapping

SIPOC Mapping

- A High-level map which defines the scope of a process and its inputs, outputs, suppliers and customers.
- Represents the flow of the process and its key elements in a table format.
- Widely used in process design and process improvement initiatives.
- Helps identify relevant information before beginning a project

Define; SIPOC



SIPOC Mapping, when to use it?

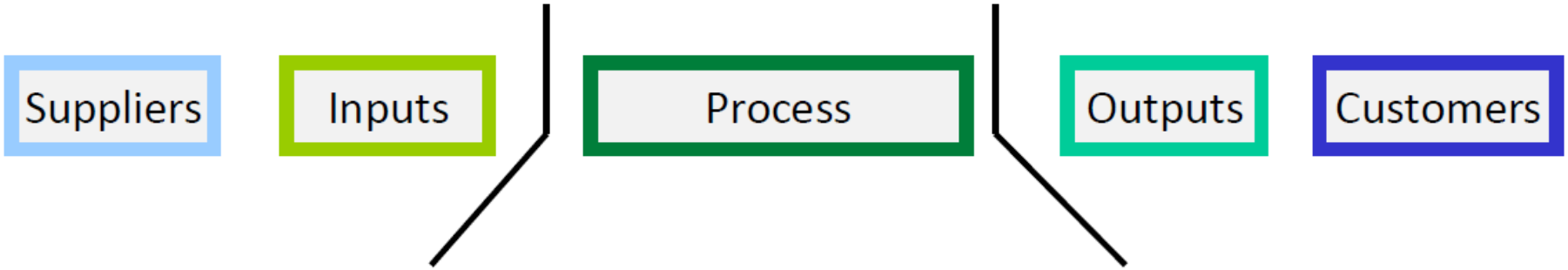
- When it's important that 'everyone' understands the core process.
- Used in defining and designing new processes.
- Used at the beginning of a process improvement initiative:
- DMAIC and Kaizen events.
- When you need to allow other stakeholders to agree on the project scope.

SIPOC Mapping, why do we use it?

- Helps define the scope of work for a project
- Identifies areas which are within or beyond the control of the team.
- Helps identify potential gaps, such as:
- Unnecessary inputs.
- Outputs which customers don’t want.
- Process steps which add no ‘value’
- Helps to begin thinking in terms of ‘cause and effect’
- Helps to see the relationship between the inputs and the outputs of the process.

SIPOC Mapping, why do we use it?

- A **SUPPLIER** is an individual or a company which supplies inputs
- An **INPUT** is the material, energy, information, manpower and financial resources which are required to execute the process
- A **PROCESS** is a collection of activities which take one or more inputs to create an output which is of value to the customer
- An **OUTPUT** is the product or service produced by the process
- A **CUSTOMER** is the individual or company which receives the outputs of the process.

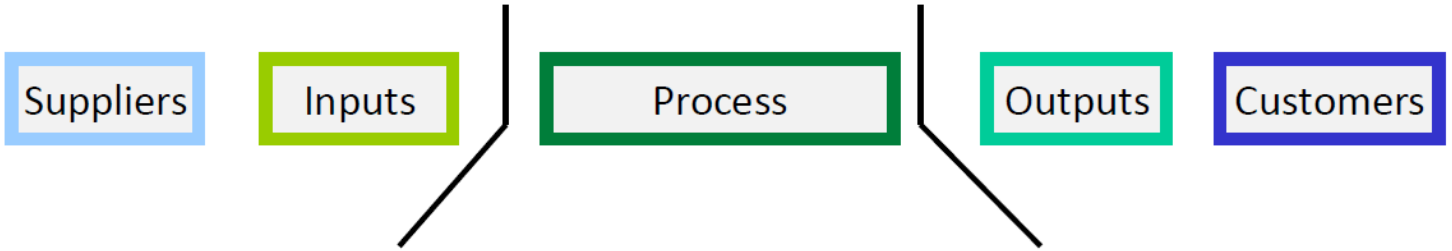


SIPOC Mapping, how we develop it…

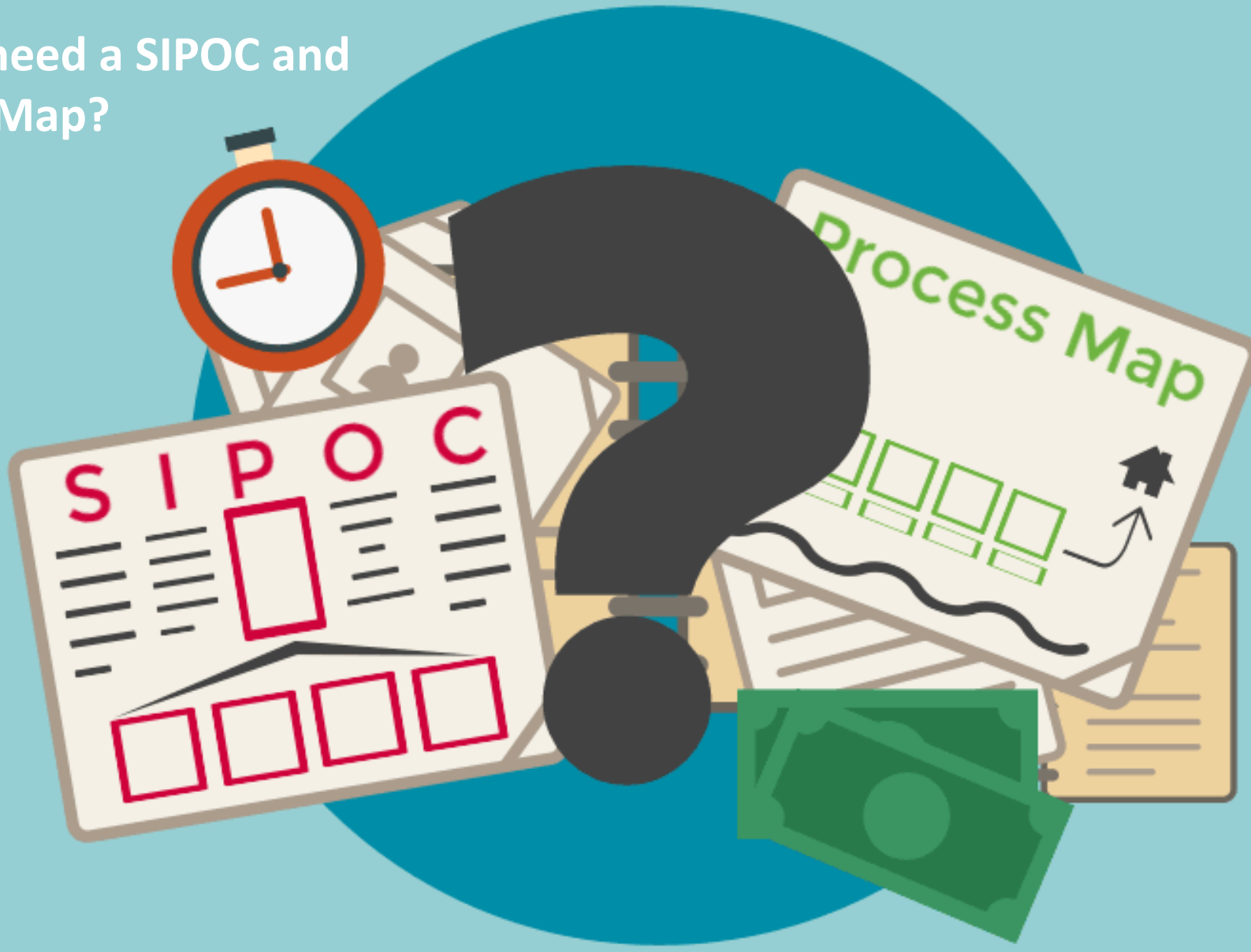
- Recommended procedure/sequence for creating a SIPOC Map:
- Clearly explain the purpose for creating the SIPOC map.
- Emphasize that the map must represent the situation as it exists.
- Use large flip charts or use an electronic template (with a large screen).
- Allow your team to provide input on each of the five categories.

SIPOC Mapping, how we develop it…

- Begin with the **PROCESS** by writing the ‘key’ highest-level steps.
- Identify the primary **OUTPUTS** of the process.
- Identify **CUSTOMERS** who will receive the outputs.
- Identify the **INPUTS** required for the process to function properly.
- Identify the **SUPPLIERS** of those inputs.
- Discuss the SIPOC map with key stakeholders to verify accuracy and completeness.



Why do I need a SIPOC and a Process Map?

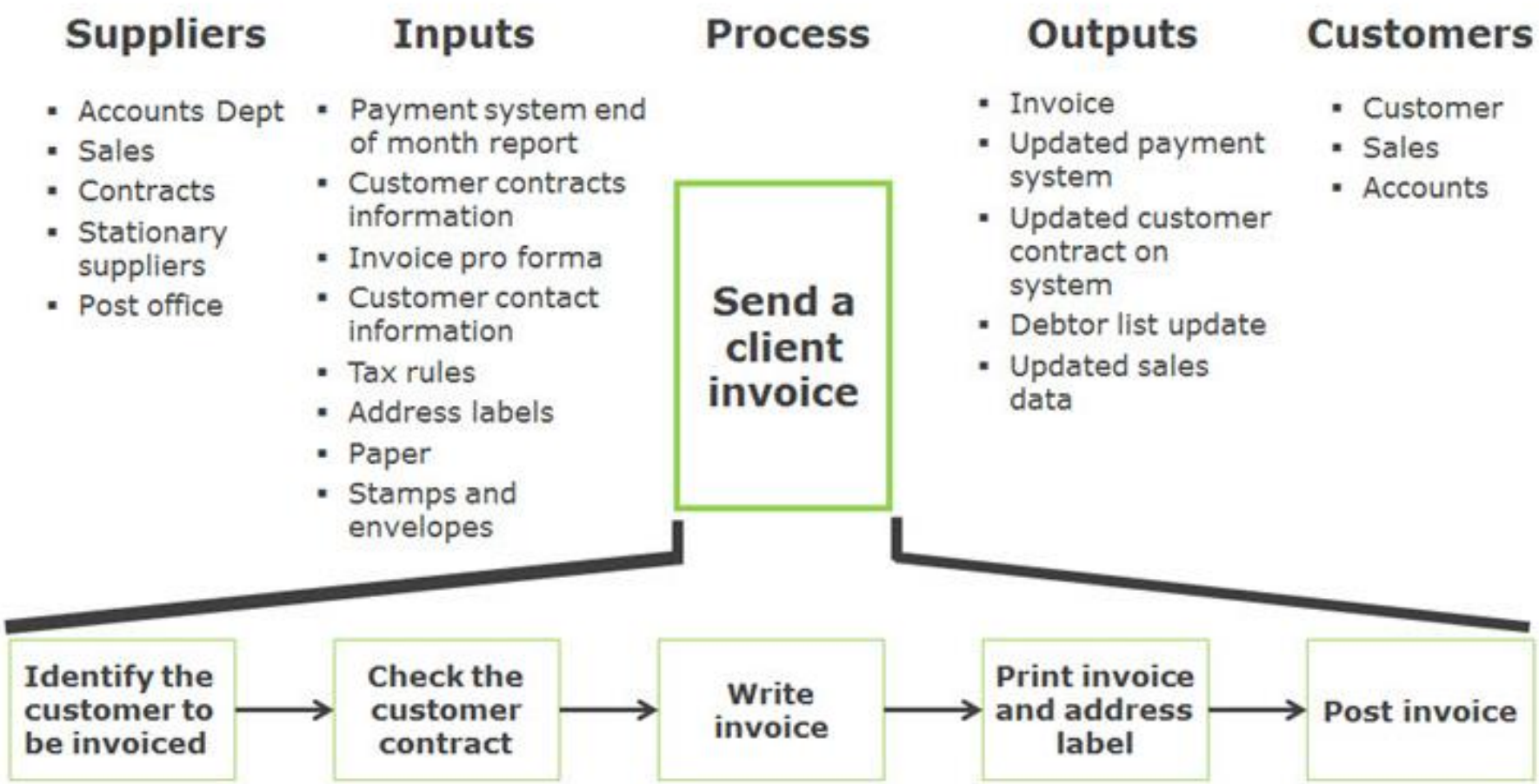


SIPOC Mapping example – Car Dealer

Suppliers	Inputs	Process	Outputs	Customers	Requirements
Manufacturer	Cars	See Below	New Client Account	Car Buyer	Color Selection
Suppliers	Option Packages		Paperwork To State	Dealership Owners	Build To Order
Gas Station	Fuel For Cars		Paperwork To Dealer	Department of Motor Vehicles	Paperwork Filed Within 48 Hours Of Car Purchase
Sal's Car Wash	Car Washes		Paperwork To Manufacturer	Service Dept	In-State Checks Or Money Orders
Printer	Car Needs Worksheet		Payment		
			Service Contract		
			Service Notifications		

Meet With New Client → *Understand Client Needs In New Car* → *Present Options To Client And Test Drive Cars* → *Come To Agreement on Options, Price and Delivery Date* → *Sign Paperwork and Hand Over Keys/Title*

SIPOC Mapping example – Sending an Invoice



SIPOC Mapping template

Suppliers	Inputs	Processes	Outputs	Customers
Who supplies the process inputs?	What inputs are required?	What are the major steps in the process?	What are the process outputs?	Who receives the outputs?

SIPOC Mapping, further thoughts

- Sometimes it's useful to display on the SIPOC map, the requirements which are important to the customers.
- The IPO (inputs-processing-outputs) is a simpler model which represents the most basic structure for describing a process.
- It is widely used in software engineering and systems analysis (including manufacturing systems) and can be equally useful in both process design and in process improvements efforts.

SIPOC Mapping versus COPIS

- SIPOC is often reordered to COPIS for the development of new processes or teams.

- **Buy why Customers, Outputs, Processes, Inputs, Suppliers?**

- It begins with the CUSTOMER, not with assumptions around what the team thinks is important to the customer. Never assume to know your customer's CTQ's
- Once customers are identified, the team can ask what OUTPUTS the customers are looking for, without making any assumptions.
- The resulting PROCESSES are then defined to deliver those outputs.
- Once the processes are defined, required INPUTS and SUPPLIERS are relatively easy to determine.

Task - SIPOC Mapping template

- Working in Groups, we can use ‘Breakout Rooms’ in Teams.
- Map the Coffee Shop operation in your organization.
- You can use generic terms for suppliers (eg Diary Suppliers for milk)

- To keep the exercise concise, please focus on Coffee products.
- When it comes to the Process Section, use Verb / Nouns format.

Verb – an Action, an Occurrence or a state of being.

Noun – a word that functions as the name of some specific thing or set of things, such as living creatures, objects, places, actions, qualities, states of existence or ideas.

Task - SIPOC Mapping template

Suppliers	Inputs	Processes	Outputs	Customers
Who supplies the process inputs?	What inputs are required?	What are the major steps in the process?	What are the process outputs?	Who receives the outputs?

Task - SIPOC Mapping template

Suppliers	Inputs	Processes	Outputs	Customers
Who supplies the process inputs?	**What inputs are required?**	**What are the major steps in the process?**	**What are the process outputs?**	**Who receives the outputs?**
	Coffee Request	Receive the customer order	Quality cup of coffee at affordable price	Coffee drinker, purchaser.
	Coffee	Select the coffee		
	Filter Papers	Pour coffee into filter, place filter into machine		
	Water	Pour water into Coffee Machine		
	Coffee Machine	Brew Coffee until ready.		
	Coffee Cup	Pour brewed coffee into Cup		
	Payment	Collect Monies	Receipt / Change	