Tutorial 5
Business Process Improvements and Organisational Change
Suggested Solutions

Objectives:

- **What is the value chain?**
- **What role does IS play in creating value in the value chain?**
- **Understand the use of various tools for Business Process Design**

1. What is the difference between a value chain and a supply chain?

   A value chain is a series (chain) of events that includes inbound logistics, warehouse and storage, production, finished product storage, outbound logistics, marketing and sales, and customer service. A supply chain is a network of suppliers, distributors, and retailers that participate in the production of a product.

2. What role does an IS play in today's organisations?

   An information system can indirectly add value by summarizing the feedback from value-added processes for use by management and other organizational employees. The monitoring and control capabilities of an IS are excellent support features. A more contemporary view of the IS function holds that this system is an integral part of the value-adding processes and is key to providing input collection, product transformation, and output creation. In this way, an IS system can become a direct, strategic tool used to accomplish organizational goals and objectives.

3. What are some of the key differences between re-engineering and continuous improvement?

   Reengineering is radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results. Continuous improvement is constantly seeking ways to improve business processes to add value to products and services.

4. Develop a general process chart for the requisition process below:

Step	Description	Time (minutes)
1	Requisition form initiated	10
2	Form mailed to procurement	720
3	Form sits in IN basket	75
4	Requisition form completed	18
5	Form sits in OUT basket	75
6	Form mailed for authorization	720
7	Form sits in IN basket	45
8	Form reviewed and authorized	12
9	Form sits in OUT basket	90
10	Form mailed to ordering	720

Suggestion:

General Process Chart

Activities	# of activities	Time (minutes)	%
Operation	2	10+18 = 28	1.1
Inspection	1	12	0.5
Transportation	3	720+720+720 = 2160	86.9
Delay	4	75+75+45+90 = 285	11.5
Total	**10**	**2485**	**100**

Operations = filling out the requisition form
Inspection = Authorization and review
Transport = in the mail
Delay = waiting in "out" and "in" boxes

5. A firm with 4 departments has the load matrix shown in Table 1 and the current layout is shown in Figure 1.

Table 1. Load Matrix

From/To	B	C	D
A	12	10	8
B		20	6

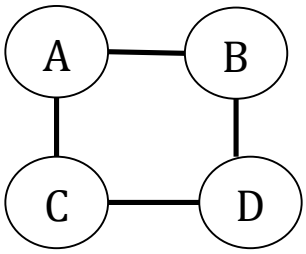


Figure 1. Current Layout

a. What is the Load–Distance score for the current layout? (Assume rectilinear distance)
b. Find a better layout. What is its total Load–Distance score?

Suggestion:

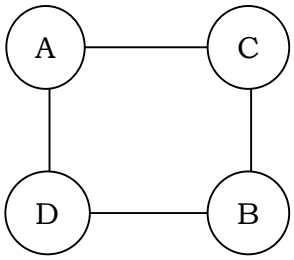
a) *What is the LD score for the current layout, assuming rectilinear distances?*

Centers	Load	Current Design	
		Distance	LD score
(A,B)	12	1	12
(A,C)	10	1	10
(A,D)	8	2	16
(B,C)	20	2	40
(B,D)	6	1	6
		Total	**84**

b) *Find a better layout. What is the total LD score for the improved layout?*

To improve the layout design further we can look at the LD scores in a) above and try to decrease the distance for the pairs with the highest scores.

⇒ A reasonable approach would be to change the places of stations B, C and D as shown in the following layout:



This new layout results in

- the distance between B and C with load 20 decreases to 1
- the distance between A and D with load 8 decreases to 1
- the distance between A and C with load 10 remains 1
- the distance between B and D with load 6 remains 1
- the distance between A and B with load 12 increases to 2

Centers	Load	Current Design	
		Distance	LD score
(A,B)	12	2	24
(A,C)	10	1	10
(A,D)	8	1	8
(B,C)	20	1	20
(B,D)	6	1	6
		Total	**68**

The total savings in LD score is then (84 - 68) =16

Case Study - Tesco uses Data and New Information Technologies to Stay Ahead

Tesco has come a long way since it began as a market stall selling surplus groceries in London's East End in 1919. It is now the largest food seller in the UK, and one of the largest general merchandise retailers in the world. It operates in 14 countries across Europe, Asia, and North America and has over 5,000stores – about half outside the UK.

Despite its history of nearly a century, Tesco is up to date with today's information systems. One way it uses these systems is to better understand its customers. As former CEO Sir Larry Leahy puts it, "The hardest thing to know is where you stand relative to your customers, your suppliers, and your competitors. Collecting, analysing and acting on the insights revealed by customer behaviour, at the [cash register] and online, allowed Tesco to find the truth." He added, "Customers [are] the best guide. They have no axe to grind. You have to follow the customers."

To track and analyse customer information, Tesco invested in a data warehousing system from Teradata along with reporting software from Business Objects. A data warehouse is a large collection of historical data to use for analysis and decision-making. At Tesco, "large" is no exaggeration: Its data warehouse contains over 100 TB (terabytes) of data. By comparison, a high–end personal computer might have a total storage of 1 TB.

Connecting with customers though isn't a one-way process of collecting data about them. Connecting also means reaching out to customers and allowing them to interact in new ways. Tesco is doing that, too. Using augmented reality technology from Kishino AR, Tesco lets customers see products online almost as if they were physically in a store. (You can see this in action in the Kishino AR video: (https://www.youtube.com/watch?v=vHKuMlln5tQ&ab_channel=WirelessFederation)
Tesco is also putting computers in its UK stores that allow customers to check out more products than a store can stock, and view heavy, bulky items from all angles. In Korea, Tesco has opened a complete virtual store: Customers can view over 500 items, scan their barcodes using a special smartphone app, and order products. The products can be delivered later that same day if they order by 1pm.

Recognizing that many of the customers it wants to connect with are members of social networking sites, Tesco has also developed a FB application in which the Club card holders (or most of its regular customers, 16 million in the United Kingdom alone) can vote on products they want added to its Big Price Drop promotion. Richard Brasher, (Former) CEO of Tesco UK explains, "We are committed to doing all we can to help our customers, and our new FB application will enable them to tell us directly where they most value reduced prices." Aside from the benefits of lower prices, voting on which prices should be lowered gives customers a feeling of being connected with the store and participating in decisions.

Tesco's applications require modern IS. More importantly, however, they require the ability to see the value of information and conceive of innovative ways to use it.

1. How does Tesco's Teradata database add value to the organisation?

   Tesco's Teradata database allows them to track and analyse customer information. This information can be used to achieve a competitive advantage.

2. How do Tesco's use of augmented reality and its FB application give Tesco a potential competitive advantage?

   Using augmented reality technology from Kishino AR, Tesco lets customers see products online almost as if they were physically in a store. Tesco is also putting computers in its UK stores that allow customers to check out more products than a store can stock, and view heavy, bulky items from all angles. In Korea, Tesco has opened a complete virtual store: Customers can view over 500 items, scan their barcodes using a special smartphone app, and order products. The products can be delivered later that same day if they order by 1 pm.

   Tesco has also developed a Facebook application in which the Clubcard holders (or most of its regular customers, 16 million in the United Kingdom alone) can vote on products they want added to its Big Price Drop promotion.

3. Tesco collects and analyses historical data from customers, such as weekly and monthly spending habits. How might this information help a food seller such as Tesco operate more efficiently, save money, attract customers, and make sure food doesn't go to waste?

   By analysing historical data, Tesco will be able to discover patterns and trends. They will be able to identify products with high turnover rates, determine when shoppers buy certain items, which shoppers buy certain items, etc.

4. How do you feel about a company, such as Tesco, collecting data about your spending habits?

   Responses will vary. Some students may be uncomfortable with the idea that their spending habits are being tracked.