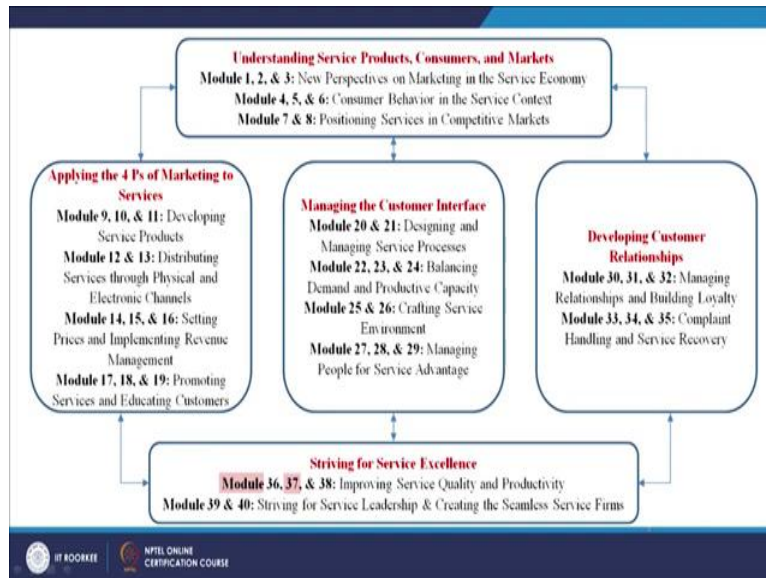


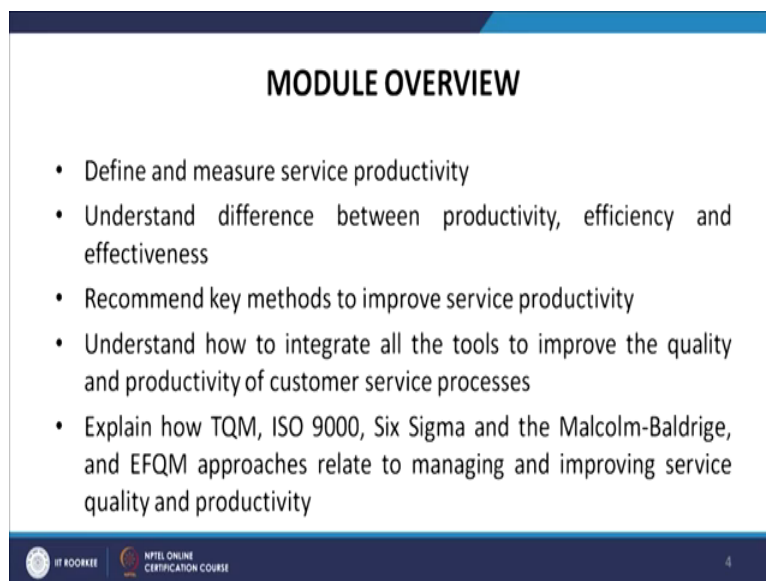
Services Marketing: Integrated People, Technology, Strategy
Professor. Zillur Rahman
Department of Management Studies
Indian Institute of Technology, Roorkee
Lecture: 38
Improving Service Quality and Productivity
Part III

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Welcome to services marketing and now we will discuss module 38. As you have seen earlier that module 36, 37 and 38 are dedicated to improving service quality and productivity. We have talked about module 36 and 37 and now it is the turn for module 38.

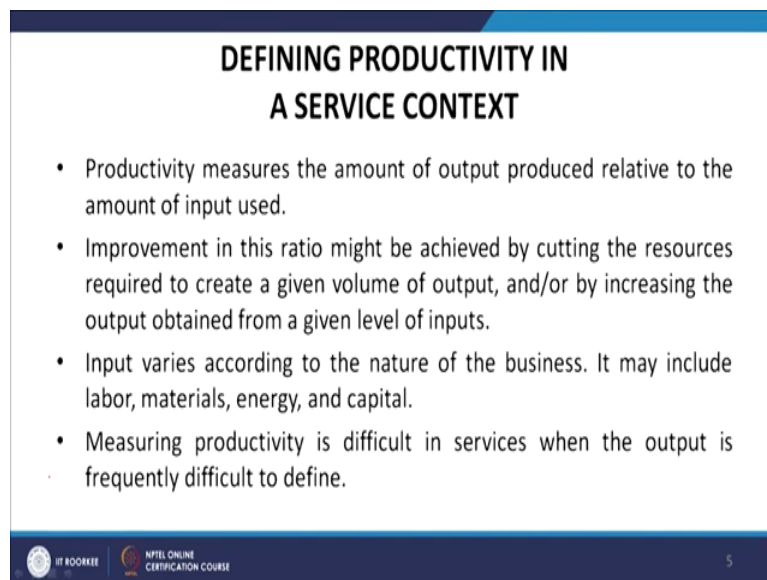
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Now, let us look at what are the things that we will cover in this module. The first is that we will define and measure service productivity, the second is to understand the difference between productivity, efficiency and effectiveness, then recommend key methods to improve service productivity.

Understand how to integrate all the tools to improve the quality and productivity of customer service processes and then we will explain how the TQM, ISO 9000, Six Sigma and the Malcolm-Baldrige and EFQM approaches relate to managing and improving service quality and productivity. So, you see that all through our focused have been on quality and productivity both of them.

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**DEFINING PRODUCTIVITY IN
A SERVICE CONTEXT**

- Productivity measures the amount of output produced relative to the amount of input used.
- Improvement in this ratio might be achieved by cutting the resources required to create a given volume of output, and/or by increasing the output obtained from a given level of inputs.
- Input varies according to the nature of the business. It may include labor, materials, energy, and capital.
- Measuring productivity is difficult in services when the output is frequently difficult to define.

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So, let us look at defining productivity in a service context. Productivity measures the amount of output produced relative the amount of input used. Improvement in this ratio might be achieved by cutting the resources, required to create a given volume of output and or by increasing the output obtained from a given level of inputs. Input varies according to the nature of business. It may include labor, materials, energy and capital.

Measuring productivity is difficult in services when the output is frequently difficult to determine, so that makes it difficult for people to understand or calculate the productivity because you don't know what is the output.

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**DEFINING PRODUCTIVITY IN
A SERVICE CONTEXT**

- In a **people-processing service** such as a hospital, we can look at the number of patients treated in the course of a year and the hospital's "census" or average bed occupancy.
- However, how do we take into account the different types of medical activities performed, such as the removal of cancerous tumors, treatment of diabetes, or setting of broken bones?
- Relatively few standardized medical procedures offer highly predictable outcomes.

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In a people processing service such as the hospital, we can look at the number of patients treated in the course of a year and the hospital's census on average bed occupancy. However, how do we take into account the different type of medical activities performed such as the removal of cancerous tumors, treatment of diabetes or setting of broken bones? Relatively few standardised medical procedures offer highly predictable outcomes.

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**DEFINING PRODUCTIVITY IN
A SERVICE CONTEXT**

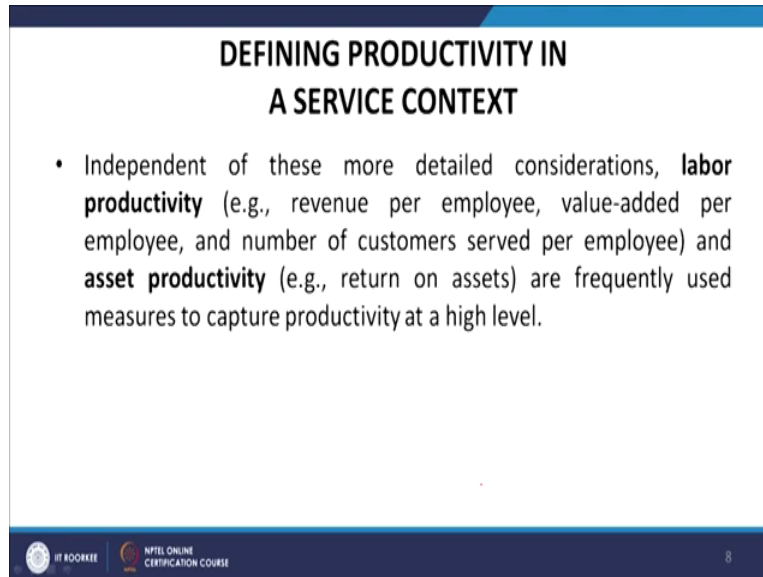
- In **possession-processing services**, since many quasi-manufacturing are performing routine tasks with easily measurable inputs and outputs.
- Examples include garages that change a car's oil and rotate its tires, or fast-food restaurants that offer limited and simple menus.
- However, the task gets more complicated when the garage mechanic has to find and repair a water leak, or when we are dealing with a French restaurant known for its varied and exceptional cuisine.

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When we are talking of possession processing services, since many quasi manufacturing are performing routine activities with easily measurable inputs and output. Examples include garages, that change a car's oil and rotate its tyre or fast food restaurant that offer limited and simple menu.

However, the task gets more complicated when the garage mechanic has to find and repair a water leak or when we are dealing with a French restaurant known for its varied and exceptional cuisine. So, then this time and output relationship, it breaks down.

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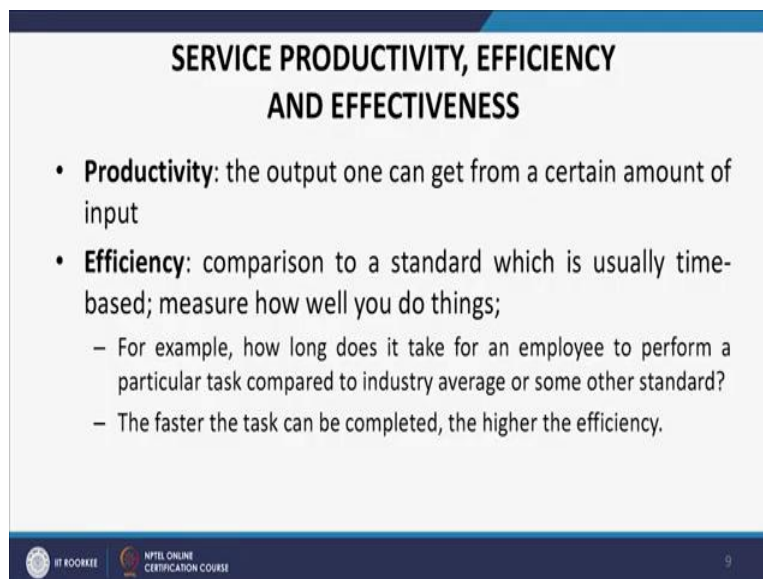
DEFINING PRODUCTIVITY IN A SERVICE CONTEXT

- Independent of these more detailed considerations, **labor productivity** (e.g., revenue per employee, value-added per employee, and number of customers served per employee) and **asset productivity** (e.g., return on assets) are frequently used measures to capture productivity at a high level.

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Independent of these more detailed considerations labor productivity, for example, revenue per employee, value added per employee and the number of customer served per employee and asset productivity that is the return on assets are frequently used measures to capture productivity at a high level.

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SERVICE PRODUCTIVITY, EFFICIENCY AND EFFECTIVENESS

- **Productivity:** the output one can get from a certain amount of input
- **Efficiency:** comparison to a standard which is usually time-based; measure how well you do things;
 - For example, how long does it take for an employee to perform a particular task compared to industry average or some other standard?
 - The faster the task can be completed, the higher the efficiency.

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Now, let's look at what is this productivity. The output one can get from a certain amount of input. Efficiency is comparison to a standard which is usually time based measures how


well you do things. For example, how long does it takes for an employee to perform a particular task compared to industry average or some other kind of standard. The faster the task can be completed, the higher will be the efficiency.

Now, the problem here is that so when the employee keep on doing the same task that is standardised or routine, then obviously it becomes easy to do that in lesser amount of time. But when the task becomes complex and they becomes customised, then the number of task that can be performed within a given time period, they reduces.

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**SERVICE PRODUCTIVITY, EFFICIENCY
AND EFFECTIVENESS**

- **Effectiveness:** the degree to which an organization meets its goals and desired outcomes, which typically include customer satisfaction.
- Peter Drucker expressed it succinctly: "Efficiency is doing the thing right. Effectiveness is doing the right thing."



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Now, what is effectiveness? The degree to which an organization meets its goals and desired outcomes which typically include customer satisfaction. So, Peter Drucker expressed it succinctly, "Efficiency is doing the thing right. Effectiveness is doing the right things." So, one is about doing the things rightly, another is doing the right things.

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SERVICE PRODUCTIVITY, EFFICIENCY AND EFFECTIVENESS

- Classical techniques of productivity and efficiency measurement focus on outputs and benchmarking, rather than outcomes.
- This means that productivity and efficiency are stressed, but effectiveness is neglected.
- For example;
 - A hairdresser usually serves three customers per hour.
 - However, she can increase her output to one every 15 minutes by reducing conversation with the customer and by rushing them.

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Classical techniques of productivity and efficiency measurement focuses on output and benchmarking rather than outcomes, so we are the classical techniques they talk of the outputs and the benchmarking and not the outcome. This means that productivity and efficiency are stressed, but effectiveness is not and in fact it is neglected.

For example, a hair dresser usually serve 3 customers per hour, however she can increase her output to 1 every 15 minutes by reducing conversation with the customer and by rushing them.

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SERVICE PRODUCTIVITY, EFFICIENCY AND EFFECTIVENESS

- Even if the haircut itself is just as good, the delivery process may be perceived as functionally inferior, leading customers to rate the overall service experience less positively (Figure).
- In this example, productivity and efficiency have been achieved, but not effectiveness.

Productivity for the firm may result in customer frustration when they cannot easily talk to service personnel.

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But even if the haircut itself is just as good, the delivery process may be perceived as functionally inferior, leading customers to rate the overall service experience less positively

and in this example, on the right hand side, productivity and efficiency have been achieved but not the effectiveness.

So, now this shows this person sitting here and if and it says that if you are losing patience with our endless automated systems and need to run outside in the screen press 44, if you are feeling better now and wish to continue, press 45, so productivity for the firm may result in customer frustration when they cannot easily talk to the service personnel but that increases the productivity of the company.

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The slide is titled "SERVICE PRODUCTIVITY, EFFICIENCY AND EFFECTIVENESS". It contains two bullet points. The first bullet point states: "In the long run, organizations that are more effective in consistently delivering outcomes desired by customers should be able to command higher prices for their output, and build a loyal and profitable customer base." The second bullet point states: "Therefore, there is a need to place emphasis on effectiveness and outcomes (including quality and value generated for customers) in addition to productivity and efficiency." There are handwritten red annotations on the slide. An arrow points from the text "effectiveness and outcomes" to the handwritten note "View of the customer". Another arrow points from the text "to productivity and efficiency" to the handwritten note "View of the company's". A bracket on the right side of the slide encompasses the second bullet point and is labeled "Both are important". At the bottom of the slide, there are logos for IIT KOOERKE and NPTEL ONLINE CERTIFICATION COURSE, and the number 13.

So, in the long run, organisations that are more effective in consistently delivering outcomes desired by customers should be able to command high prices for their output and build a loyal and profitable customer base. Therefore, there is a need to place emphasis on effectiveness and outcomes including quality and value generated for customers in addition to productivity and efficiency.


So, these effectiveness and outcomes are equally important if not more in addition to the productivity and efficiency. Now the problem is that this productivity and efficiency, they are the company's view. View of the company. While this effectiveness and outcomes both of them, they are related to the view of the customer and both these are important. Both of them are important.

So, we cannot sacrifice one for the other and the company needs to work on both the sides of the same coin.

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MODULE OVERVIEW

- Describe key customer feedback collection tools
- Be familiar with hard measures of service quality and control charts
- Select suitable tools to analyze service problems
- Understand return on quality and determine optimal level of reliability



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How to go about improving service productivity? Intense competition in many service sectors push firms to continually seek ways to improve the productivity. Because of the competition obviously there is a need to increase productivity otherwise the company will be wiped out. Following are the sources of and possible approaches to productivity gains.

The first such type of approach is generic productivity improvement strategies. The second ones are customer driven approaches to improve productivity. So, we are talking of two types of productivity improvement techniques, the first is generic and the other are customer driven approaches. So, what are these generic strategies to improve productivity of services?

(Refer Slide Time: 08:31)

GENERIC STRATEGIES

- 1 • Careful cost control at every step in the process
- 2 • Reduce waste of materials and labor
- 3 • Train and motivate employees to do things faster, better and more efficiently
- 4 • Broaden variety of tasks a service worker can perform
- 5 • Improve capacity utilization through better matching of supply and demand



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The first one is careful cost control at every step of the process. Reduce waste of material and labor. The third is to train and motivate employee to do things fast, better and more efficiently. The fourth one is to broaden variety of task a service workers can perform and then improve capacity utilization through better matching of supply and demand.

(Refer Slide Time: 09:06)

GENERIC STRATEGIES

- 6 • Use machines, equipment, technology and data that enables employees to work faster
- 7 • Install expert systems that allow paraprofessionals to take on work previously performed
- 8 • Redesign customer service processes to be more productive and effective
- 9 • Replace service employees with automated machines and customer-operated self-service technologies

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So, these are some generic strategies and in addition to those, use machines equipment technology and data that enables workers to work fast. Install expert systems that allow paraprofessionals to take on work previously performed. Redesign customer service processes to be more productive and effective and then replace those service employees with automated machines and customer operated self-service technologies. So, where the processes are automated, are fairly established and standardised, in those processes, the human can be replaced with this automated machine.

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GENERIC STRATEGIES

- 10 • Tier service levels to allocate resources better to more important customers
- 11 • Outsource non-core activities that can be provided more cost-effectively

*Keep it → Core activity
outsourced → non core activity
non value adding
and someone else
can do these activities
more efficiently*

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The tenth one is tier service levels to allocate resources better to more important customers. So, when the service are tiered, so now you know which customers are more important and where more attention and more money should go. And the eleventh strategy is outsource non-core activities that can be provided more cost effectively by someone else.

So, you keep only core, you continue to do only core activity while all non-core activities are to be outsourced. So, because these are non-value adding activities and someone else can do these activities in a better way. So, therefore there is a need to outsource these activities and that will reduce the cost for this company.

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CUSTOMER DRIVEN STRATEGIES

- 1 • Change timing of customer demand
 - Encourage customers to use a service outside of peak periods and offer incentives to do so.
 - This way, managers can make better use of their productive assets and provide better service.
- 2 • Ask customers to use third parties
 - Specialist intermediaries like a travel agency can be delegated with some service support functions.
 - This allows the service provider to focus on quality and productivity in its own area of expertise.

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The next are some customer driven strategies. First is changed timing of customer demand. How? Encourage customer to use a service outside of peak periods and offer incentives to them to do so. Then this way, managers can make better use of their productive assets and provide the better services because now there will be no waiting time and no crowding in the service factory.

The second is ask customers to use third parties. Specialist intermediaries like a travel agency can be delegated with some service support functions. This allow the service provider to focus on quality and productivity in its own area of expertise.

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CUSTOMER DRIVEN STRATEGIES

3 • Encourage use of lower cost service, delivery channels and self-service

- Shifting transactions to more cost-effective service delivery channels such as the Internet, through apps or self-service machines, improves productivity.
- It also helps in demand management by reducing the pressure on employees and certain types of physical facilities at peak hours.
- Many technological innovations are designed to get customers to perform tasks previously undertaken by service employees

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The third is to encourage use of low cost service delivery channels and self-services. For example, shifting transactions to more cost effective service delivery channel such as the internet through apps or self-service machines and that improves the productivity. It also helps in demand management by reducing the pressure on employees and certain types of physical facilities at the peak hour.

Many technological innovations are designed to get customers to perform task previously undertaken by the service employee, so some of the task can be given to the customers to perform instead of the service employee and then obviously the productivity of the company will go up.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- We discussed a number of tools and concepts on how to improve service quality and productivity.
- In the following discussion, a generic nine-step framework is discussed. It can be used to structure one's approach to improve the quality and productivity of a single customer service process.
- Such projects are typically conducted by experienced in-house teams or external consultants.
- However, the continual improvement of a process should typically be the responsibility of the process owner.

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Now, integration and systematic approaches to improve service quality and productivity. So, we have discussed a number of tools and concepts on how to improve service quality and productivity. In the following discussion, a generic nine step framework is discussed. It can be used to structure one's approach to improve the quality and productivity of a single customer service process.



Such projects are typically conducted by experienced inhouse teams or external consultant. However the continual improvement of a process should typically be the responsibility of the process owner.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 1**
- **Objective:** Determine priority processes for improvement and redesign
 - Frequency count of process occurrence and number of complaints per process to identify priority processes
 - Use prioritization matrix (ease of implementation vs. potential business impact) to identify "low hanging fruits" with which to start a service improvement initiative



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So, let us look at the first step of this framework. So, the objective is to determine priority processes for improvement and redesign. So, these, we are looking at some priority processes that needs improvement or redesign. Frequency counts of process occurrence and number of complaints per process to identify priority processes. Use prioritisation matrix ease of implementation versus potential business impact to identify low hanging fruits with which to start a service improvement initiatives.

So, these low hanging fruits means that they are easily catchable and the person can easily with the little efforts the person can start eating them. So, it means that those things that can be changed easily and that will lead to more profits.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 2**
- **Objective:** For the shortlisted processes, set targets for (1) customer satisfaction, (2) defects, (3) cycletime, and (4) productivity improvements
 - Benchmarking internally, against competition, best in class and world-class to determine targets for all four priorities
 - Decide the target level of performance (e.g., do you aim to be the best in your industry, or just catch up with industry average on those four priorities?)
 - Use a project charter to formalize the objectives of this customer service process redesign project

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Now, the next step is, in the next step the objective is to shortlist processes, set targets for 1 is customer satisfaction, 2 is defects, 3 is cycle time and 4 is productivity improvement. Benchmarking internally against competitors, best in class and world class to determine targets for all 4 priorities. As 4 priorities I have mentioned above.

Decide the target levels of performance, do you aim to be best in your industry or just catch up with industry averages on those 4 priorities. Use a project charter to formalise the objectives of this customer service process, redesign project.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 3**
- **Objective:** Identify key elements of quality in priority service processes and determine customer needs and expectations
 - Use blueprinting to identify all touchpoints of a customer journey and the line of visibility to understand the customer view of a process
 - For each touch point, determine what quality means in the customer's eyes (e.g., use the five dimensions of service quality to cover all important dimensions, review customer feedback, content analysis of compliments and complaints to understand drivers of customer delight and disgust, conduct focus groups)

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In the step 3, the objective is to identify key elements of quality in priority service processes and determine customer needs and expectations. So, here you can use blueprinting to identify all touchpoints of the customer journey and the line of visibility to understand the customer view of this process. And for each touch point, determine what quality means in the customer's eye.



For example, use the 5 dimensions of service quality to cover all important dimensions, review customer feedbacks, content analysis of complements and complaints to understand drivers of customer delight and disgust and conduct focus groups.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 4**
- **Objective:** Assess process performance
 - Review hard, operational process measures (e.g., cycle times, customer waiting times, one-time resolution, etc.)
 - Measure customer perceptions of process performance (e.g., process-specific customer satisfaction surveys)
 - Interview frontline employees to obtain their view of what works and what doesn't, and what needs urgent improvement



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In the fourth step, the objective is to access process performance. Review hard operational process measures, for example, the cycle times, customer waiting times and one time resolution. Measure customer perception of service performance for example, process specific customer satisfaction surveys, interview the frontline employees to obtain their view of what work and what does not and what needs urgent improvement.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 5**
- **Objective:** Identify performance shortfalls and quality gaps *Gap model & SQ*
 - Map customer needs and wants of the process against process performance measures to determine important performance and quality gaps
 - Identify the main performance gaps, e.g., map frequency counts of service failures (and/or complaints) on service blueprints to understand where exactly service processes fail

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In the fifth step, the objective is to identify process shortfalls and quality gaps and we have seen Gaps model of service quality. So, map customer needs and wants to the process against process performance measures to determine important performance and the quality gaps.

So, what are the important performance and quality gaps? Identify the main performance gap, map frequency count of service failures and or complaints on service blueprints to understand where exactly service processes fail.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 6**
- **Objective:** Identify root causes of quality gaps
 - Use the Gaps Model to capture all possible sources of gaps in customer's service quality perceptions
 - Use TQM tools to drill down on specific gaps, e.g., use Pareto charts to understand which fail points to focus on, use Fishbone diagrams to identify the exact causes of key fail points, and again use Pareto charts to identify the main root causes to be designed out of the processes


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In the step 6, the objective is to identify root causes of quality gaps. Here again you use the Gaps model to capture all possible sources of Gaps in customer service quality perceptions. Use TQM tools to drill down on specific gaps that is use Pareto charts to understand which fail points to focus on, use fishbone diagrams to identify the exact causes of key fail points and again use Pareto charts to identify the main root causes to be designed out of the process.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY


- **Step 7**
- **Objective:** Improve process performance
 - Use prescriptions from the Gaps Model to close each of the six gaps performance
 - Use customer service design and redesign tools
 - Plan service recovery for fail points that cannot be designed out of the system



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In the seventh step, the objective is to improve the process performance. Use prescriptions from the Gaps model to close each of the 6 Gaps performance. Use customer service design and redesign tools. Plan service recovery for failed points that cannot be designed out of the system.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 8**
- **Objective:** Control and continuously fine-tune and further improve the process
 - After redesign, monitor the performance of the redesigned process using operational measures and customer feedback
 - Make it a routine process at the new, high level of performance
 - Ask the process owner to fine-tune the process through incremental improvements (e.g., use Kaizen or other tools to get the process team to monitor and continually improve the process it is responsible for)

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In the 8th step, the objective is to control and continuously fine-tune and further improve the process. After redesign, monitor the performance of the redesigned process using operational measures and customer feedback. Make it a routine process at the new high level of performance. Ask the process owners to fine-tune the process through incremental improvements. For example, use Kaizen or other tools to get the process teams to monitor and continually improve the process it is responsible for.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- **Step 9**
- **Objective:** Start over, the journey is the destination...
 - Create a culture of customer centricity, process improvement, and change by continuously working and redesigning customer service processes; become a customer-driven learning organization



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In step 9, the objective is to start over the journey is the destination. Create a culture of customer centricity, process improvement and change by continuously working and redesigning customer service processes. Become a customer driven learning organisation.

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INTEGRATION AND SYSTEMATIC APPROACHES TO IMPROVE SERVICE QUALITY AND PRODUCTIVITY

- There are also systematic approaches that help service firms to achieve an organization-wide culture of becoming customer, service quality and productivity focused.
- These approaches include the following approaches:
 - the Total Quality Management (TQM),
 - ISO 9000,
 - Six Sigma, and
 - the Malcolm-Baldrige and European Foundation for Quality Management (EFQM).

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Now let us look at the integration and systematic approaches to improve service quality and productivity. So, there are also systematic approaches that help service firms to achieve an organisation wide culture of becoming customer service quality and productivity focussed.

So, now we are looking at this systematic approaches that will be used for becoming customer, service quality and productivity focused. These approaches include the following. The total quality management that is the TQM, ISO 9000, Six Sigma and the Malcolm-Baldrige and the European Foundation for quality management. So these are those tools.

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TOTAL QUALITY MANAGEMENT

- It was originally developed in Japan.
- It is probably the most widely-known approach to continuous improvement in manufacturing, and more recently, in service firms.
- TQM help organizations attain service excellence, increase productivity and is a continued source of value creation through innovative process improvements.

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Let us look at what is this total quality management. It was originally developed in Japan. It is probably the most widely known approach to continues improvement in manufacturing and

more recently in services firms also. TQM help organisation attain service excellence, increase productivity and is a continued source and is a continued source of value creation through innovative process improvements.

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TOTAL QUALITY MANAGEMENT

- 12 critical dimensions for successful implementation of TQM
 1. Top management commitment and visionary leadership
 2. Human resource management
 3. Technical system, including service process design and process management
 4. Information and analysis system
 5. Benchmarking


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So, there are 12 critical dimensions of successful implementation of total quality management. The first is the top management commitment and visionary leadership. So, that is the most important one and it starts from the top. The next comes human resource management followed by technical systems including service process design and process management. The fourth is information and analysis system and then comes benchmarking.

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TOTAL QUALITY MANAGEMENT

- 12 critical dimensions for successful implementation of TQM
 6. Continuous improvement
 7. Customer focus
 8. Employee satisfaction
 9. Union intervention and employee relations
 10. Social responsibility
 11. Services capes
 12. Service culture



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The sixth is continuous improvement followed by customer focus, employee satisfaction, union intervention and employee relations. The tenth is social responsibility, the services capes and the service culture.

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ISO 9000 CERTIFICATION

- ISO 9000 is all about quality management.
 - ISO (the International Organization for Standardization based in Geneva, Switzerland), which promotes standardization and quality to facilitate international trade.
- Comprises requirements, definitions, guidelines and related standards to provide an independent assessment and certification of a firm's quality management system.



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Another tool was that we wanted to talk about is ISO 9000 certification. ISO 9000 is all about the quality management. So, ISO stands for the International Organisation for Standardisation and it is based in Geneva, Switzerland which promotes standardization and quality to facilitate international trade. So, when the products and qualities they are standardised, then it becomes easier to trade them internationally.

So, that comprises requirements, definitions, guidelines and related standards to provide an independent assessment and certification of the firm's quality management program.

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ISO 9000 CERTIFICATION

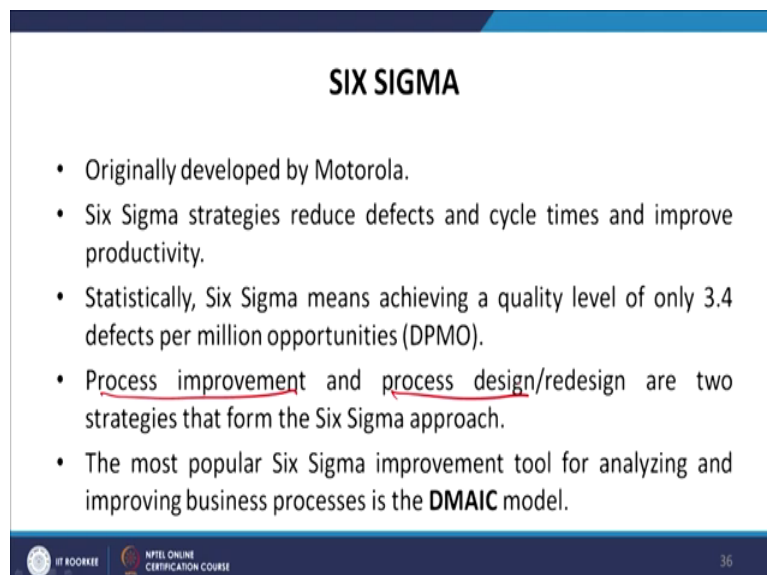
- Comprised of a family of sub-standards family addressing various aspects of quality management.
- Major service sectors with ISO 9000 certification include wholesale and retail firms, IT service providers, health care providers, consultancy firms and educational institutions.



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So, these ISO 9000 certification they comprise of a family of sub-standard family addressing various aspects of quality management. Major service sectors with ISO 9000 certification includes wholesale and retail firms, IT service providers, healthcare providers, consultancy firms and educational institutions. So, now you see that these ISO 9000 certifications are also becoming very common for service sector companies although they started with the manufacturing companies.

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SIX SIGMA

- Originally developed by Motorola.
- Six Sigma strategies reduce defects and cycle times and improve productivity.
- Statistically, Six Sigma means achieving a quality level of only 3.4 defects per million opportunities (DPMO).
- Process improvement and process design/redesign are two strategies that form the Six Sigma approach.
- The most popular Six Sigma improvement tool for analyzing and improving business processes is the **DMAIC** model.

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Another tool is Six Sigma. So, that was originally developed by Motorola. Six Sigma strategies reduce defects and cycle times and improve productivity. Statistically, Six Sigma means achieving quality level of only 3.4 defects per million opportunities.



Process improvement and process design or redesign are 2 strategies that form the Six Sigma approach. So process improvement and process design, so these are the 2 approaches. Most popular Six Sigma improvement tools for analysing and improving service business process is the DMAIC model.

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THE DMAIC MODEL

	Process Improvement	Process Design/Redesign
1 Define	<ul style="list-style-type: none"> Identify the problem Define requirements Set goals 	<ul style="list-style-type: none"> Identify specific or broad problems Define goal/change vision Clarify scope and customer requirements
2 Measure	<ul style="list-style-type: none"> Validate problem/process Refine problem/goal Measure key steps/inputs 	<ul style="list-style-type: none"> Measure performance to requirements ✓ Gather process efficiency data ✓
3 Analyze	<ul style="list-style-type: none"> Develop causal hypothesis ✓ Identify root causes ✓ Validate hypothesis ✓ 	<ul style="list-style-type: none"> Identify best practices ✓ Assess process design ✓ Refine requirements ✓
4 Improve	<ul style="list-style-type: none"> Develop ideas to measure root causes Test solutions Measure results 	<ul style="list-style-type: none"> Design new process Implements new process, structures, and systems
5 Control	<ul style="list-style-type: none"> Establish measures to maintain performance Correct problems as needed 	<ul style="list-style-type: none"> Establish measures and reviews to maintain performance Correct problems as needed

Table: Applying the DMAIC model to process improvement and redesign



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This is the DMAIC model. So on the left, it starts with the activities that are to be done, define, measure, analyse, improve and control and then, it outlines how to go about doing process improvement at each stage and how to do process design or redesign at each stage.

So, now let us start with the first one that is to define. So what happens in process improvement? You identify the problem, define requirements and set the goals. When we are talking of process design, we have to identify specific or broad problems, identify goal or change the vision and clarify scope and customer requirements.

So, after defining then we move on measure. So, what happens when we are talking of process improvement? Validate the problems and processes. Refine the problem and goal and measure key steps or input. In process design, you measure performance to requirement and gather process efficiency data.

The third is to analyse. So, here we have to develop the causal hypothesis, identify the root causes and then validate these hypotheses. Here we need to identify the best practices across the companies, across industries, across the globe, assess process design and to refine the requirements. In the fourth, that is improve, the process improvement includes develop ideas to measure the root causes, test solution and measure results.

In process design include designing new processes, implement new process structures and systems. And the fifth activity that is control. In process improvement, there is a need to establish measure to maintain performance and to correct problems as needed. And in process design, establish measures and reviews to maintain performance and correct problems as needed.

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MALCOLM-BALDRIGE AND EFQM APPROACHES

- The Malcolm Baldrige National Quality Award (MBNQA) was developed by the National Institute of Standards and Technology (NIST).
- It has a goal of promoting best practices in quality management, and recognizing and publicizing quality achievements among US firms.
- Countries other than the US have similar quality awards, of which the most widely used is probably the European Foundation for Quality Management (EFQM) approach.


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The next we will talk about is the Malcolm-Baldrige and EFQM approaches. So, the Malcolm Baldrige national quality award that is called as MBNQA was developed by the National Institute of Standards and Technology. It has a goal of promoting best practices in quality management and recognising and publicizing quality achievements among US firms. Countries other than the US have similar quality awards of which the most widely used is probably the European foundation for quality management that is EFQM approach.

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MALCOLM-BALDRIGE AND EFQM APPROACHES

- The Malcolm-Baldrige Model assesses firms on the basis of 7 elements:
 1. Leadership commitment to a service quality culture
 2. Planning priorities for improvements
 3. Information and analysis
 4. Human resources management
 5. Process management
 6. Customer and market focus
 7. Business results



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So, this Malcolm-Baldrige model assesses firms on the basis of seven elements. The first as we have seen earlier that always is there is the leadership commitment to the service quality culture. The second is planning priorities for improvements, the third is information and analysis, the fourth is human resource management, the fifth is process management, sixth one is the customer and the market focus, the seventh is the business results.

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CONCLUSION



- We started our discussion with defining the productivity in the service context and its various measures. / *efficiency, effectiveness etc.*
- Generic and customer driven approaches to improve service productivity were elaborated in detail.
- Thereafter we discussed how to integrate all the tools to improve the quality and productivity of customer service processes .
- Concepts like TQM, ISO 9000, Six Sigma and the Malcolm-Baldrige, and EFQM approaches were emphasised upon.

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So to conclude, this module we started our discussion with defining the productivity in service context and the various measures to measure productivity. Then we have also talked about the efficiency, effectiveness etc. So, these are things that we have talked about here. We have also seen generic and customer driven approaches to improve service productivity were elaborated in detail.

There after we have discussed how to integrate all the tools to improve the quality and productivity of customer service processes and then we have talked about concepts like TQM, ISO 9000, Six Sigma and the Malcolm Baldrige and the EFQM approaches and we have talked about these approaches in detail. These are the three books from which the material for this module was used. Thank you.