

PRODUCTION

Concept

Production is the act of making things, in particular the act of making products or services that will be traded or sold commercially. Production decisions concentrate on what goods to produce, how to produce them, the costs of producing them, and optimizing the mix of resource inputs used in their production. This production information can then be combined with market information (like demand and marginal revenue) to determine the quantity of products or services to produce and the optimum 'pricing' [Imaga, 1994: 384].

Objectives for Excellence

The product definition is periodically reviewed using information coming from all the areas involved in production.

Planning is provided through a production management software, fed back by on-line data collection in the production line, and simulation is allowed.

Work orders are provided through the same production management software that produces production planning, and can be adapted in real time using on-line data collection in the production line.

Quality is computer-controlled using on-line data collection in the production line, and the results are analyzed and used as a feedback starting in the definition of the product.

Improvements in the production process are decided after overall feasibility studies, and are implemented following defined procedures.

Actions for implementation

There is a procedure where the characteristics of the product and/or service to be obtained are clearly defined.

It are different feasible alternatives for manufacturing studied, considering the available resources, to optimise the production circuit physically and logistically.

There is any procedure to ensure that the necessary activities are carried so the product or service meets the required standards.

The organisation plans the production (work load estimate, operations definition, resources assignment, work order preparation, etc) and it is possible to reprogramme it when necessary.

There is a quality system integrated into the production operations to control bottlenecks, missing parts and stock failures, product rejections, machinery failures and activity stops.

The failures and their circumstances are identified and recorded to prevent their repetition.

Production is globally managed with hardware and software tools specifically designed for this purpose, including activities of production planning, detailed activity distribution, work order management and daily monitoring.

There is any application available for production simulation (What if...?), to be used to take decisions about the manufacturing process.

Best practice¹

Think about

Production planning

Its purpose is to minimise production time and costs, efficiently organise the use of resources and maximise efficiency in the workplace. Production planning incorporates a multiplicity of production elements, ranging from the everyday activities of staff to the ability to realise accurate delivery times for the customer. With an effective production planning operation at its nucleus, any form of manufacturing process has the capability to exploit its full potential.

Process management

Process management is the ensemble of activities of planning and monitoring the performance of a process, especially in the sense of business process, often confused with reengineering.

Process Management is the application of knowledge, skills, tools, techniques and systems to define, visualize, measure, control, report and improve processes with the goal to meet customer requirements profitably. It is different from program management in that program management is concerned with managing a group of inter-dependent projects.

ISO 9001 promotes the process approach to managing an organization: "...promotes the adoption of a process approach when developing, implementing and improving the effectiveness of a quality management system, to enhance customer satisfaction by meeting customer requirements."

Production possibility frontier

- what products are possible given your resources
- the trade-off between producing one product rather than another
- the marginal rate of transformation

¹ Real case coming from the experiences of InnoSME users, to be incorporated in the future.

Resources and Links

BPMI.org – Business Process Management Initiative is an international, open membership, not-for-profit computer industry consortium. OMG Task Forces develop enterprise integration standards for a wide range of technologies, including: Real-time, Embedded and Specialized Systems, Analysis & Design, Architecture-Driven Modernization and Middleware and an even wider range of industries, including: Business Modeling and Integration, C4I, Finance, Government, Healthcare, Legal Compliance, Life Sciences Research, Manufacturing Technology, Robotics, Software-Based Communications and Space.

JORS - The Journal of the Operational Research Society publish papers, which are relevant to practitioners, researchers, teachers, students and consumers of operational research, and which cover the theory, practice, history or methodology of operational research.

ProductionPlanning.com – A web-based resource for the latest production planning news, articles and information.

[Production Scheduling & Planning Portal](http://ProductionScheduling&PlanningPortal) – News, articles, resources and software.

[Planning Planet](http://PlanningPlanet) – Project Planning resource site featuring a comprehensive jobs section and forum.

[Production Scheduling Blog](http://ProductionSchedulingBlog) – A blog dedicated to production scheduling research and discussion.

[Production Planning & Control Journal](http://ProductionPlanning&ControlJournal) – Published eight times a year, Production Planning & Control is an international journal that brings together research papers on all aspects of production planning and control and the management of operations in all industries.