

Hand-out Produktionsmanagement

WS 2022/2023, Version: 10. Oktober 2022

Achtung: Dieses Dokument entspricht unseren Planungen vor Semesterbeginn; es wird **nicht** regelmäßig aktualisiert. Für kurzfristige räumliche oder zeitliche Änderungen siehe Campus. Inhaltliche Änderungen werden in der Veranstaltung besprochen und ggf. auf Ilias kommuniziert.

Kontext

Veranstaltung jedes Wintersemester; Dauer: ein Semester

4,5 Leistungspunkte als Teilleistung in einem Modul mit insgesamt 9 Leistungspunkten; im Schnitt, drei Stunden Veranstaltung pro Woche

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Teil des Bachelor-Programms in technisch-orientierter Betriebswirtschaftslehre

Lernziele

Die Studierenden sind am Ende der Veranstaltung in der Lage,

- grundsätzliche Fragestellungen des Produktionsmanagements zu erkennen,
- Schnittstellen der Produktionswirtschaft zu anderen betrieblichen Funktionen aufzuzeigen,
- abstrahierte Produktionssysteme mit Hilfe von formalen Methoden abzubilden,
- grundlegende Planungsschritte des Produktionsmanagements durchzuführen und entsprechende Methoden anzuwenden,
- umfassende Konzepte des Produktionsmanagements zu diskutieren.

Inhalt

Gegenstand der Vorlesung sind zunächst die Relevanz der inner- und zwischenbetrieblichen Wertschöpfung und die Rolle von Prozessen als Ausgangspunkt dieser Wertschöpfung. Dann werden grundsätzliche Fragestellungen des Produktionsmanagements behandelt, insbesondere Kapazitäten, Bestandsmodelle und Produktionsplanung und -steuerung. In der Übung werden die zugehörigen Planungsmethoden der Produktion angewendet. Abschließend werden umfassendere Ansätze des Produktionsmanagements besprochen und dieses in die Gesamtorganisation der Unternehmung eingebunden.

Literatur

- Bereitgestellte Vorlesungsunterlagen
- Cachon, Gérard und Christian Terwiesch: Matching Supply with Demand: An Introduction to Operations Management, 4. Auflage, 2018, McGraw-Hill.

Vorlesungsplan

Am besten schon vor dem Termin Arbeiten Studierende das entsprechenden Kapitel im Lehrbuch durch. In der Präsenzveranstaltung wird ein Beispiel aus dem Themenbereich ausführlicher besprochen; ebenfalls besteht die Möglichkeit Fragen zu stellen. Schließlich werden kurz weiterführende Punkte angesprochen, die das Thema in einen breiteren betriebswirtschaftlichen oder allgemein-wissenschaftlichen Kontext setzen.

Datum	Thema	Literatur (Cachon&Terwiesch)
24.10.2022	Organisatorisches; Vorstellung des Lehrstuhls; Was ist Produktionsmanagement?	Kap. 1
31.10.2022	Prozesssicht der Unternehmung	Kap. 2
07.11.2022	Evaluation von Prozesskapazitäten	Kap. 3
14.11.2022	Abschätzung und Reduktion von Arbeitskosten	Kap. 4
21.11.2022	Lose und ökonomische Losgrößen	Kap. 5
28.11.2022	Produktionsmanagement und Unternehmenserfolg	Kap. 6
05.12.2022	Qualität und statistische Prozesskontrolle	Kap. 7
12.12.2022	Lean Operations und das Toyota Production System	Kap. 8
19.12.2022	<i>Serious Gaming: Operations Manager</i>	
09.01.2023	Produktion bei unsicherer Nachfrage	Kap. 14
16.01.2023	Entkopplungspunkt und reaktive Kapazität	Kap. 15
23.01.2023	Servicegrade und Durchlaufzeiten	Kap. 16
30.01.2023	<i>Gastvorlesung: Produktionsplanung und -steuerung in der Praxis, Christian Marchetti, Festo</i>	
06.02.2023	Zusammenfassung; Ausblick auf Vertiefungsfächer	

* nur insoweit prüfungsrelevant, wie die Inhalte besprochen werden

Übungsplan

Die Übungsveranstaltungen dienen der Vertiefung der Vorlesungsinhalte unter Anwendung praxisbezogener Theorie- und Rechenaufgaben. Die zu besprechenden Übungsaufgaben finden Sie gesammelt in einer Datei auf Ilias.

Es werden zwei inhaltsgleiche Übungen in 14-tägigem Rhythmus auf Deutsch angeboten (jeweils 2 Stunden). Die Übungen finden an den angegebenen Terminen montags von 15:45 bis 17:15 Uhr in **M 2.02** statt.

Datum	Thema
31.10./07.11.2022	Wiederholung: Grundbegriffe der BWL
14.11./21.11.2022	Nachfrageprognose
28.11./05.12.2022	Standortplanung & Prozessdesign
12.12./19.12.2022	Bestandsmanagement
09.01./16.01.2023	Produktionsplanung

23.01./30.01.2023	Ablaufplanung & Supply Chain Management
06.02.2023	Zusammenfassung und Q&A

Klausur

Die Klausur bezieht sich auf alle in Vorlesung oder Übung besprochenen Inhalte plus eventuell zusätzlicher Inhalte aus dem zur Prüfungsvorbereitung verpflichtenden Lehrbuch (Cachon& Terwiesch). Für relevante Kapitel siehe die Angaben im Vorlesungsplan.

Da es sich um eine Teilprüfung eines umfassenderen Moduls handelt (BWL 1 oder BWL 3), muss i.d.R. noch eine Klausur in einem anderen Fach mitgeschrieben werden. Es wird nur eine Gesamtnote für beide Klausuren vergeben.

Love it or hate it, IKEA is the most successful furniture retailer ever. With 276 stores in 36 countries, it has managed to develop its own special way of selling furniture. The stores' layout means customers often spend two hours in the store – far longer than in rival furniture retailers. IKEA's philosophy goes back to the original business, started in the 1950s in Sweden by Ingvar Kamprad. He built a showroom on the outskirts of Stockholm where land was cheap and simply displayed suppliers' furniture as it would be in a domestic setting. Increasing sales soon allowed IKEA to start ordering its own self-designed products from local manufacturers. But it was innovation in its operations that dramatically reduced its selling costs. These included the idea of selling furniture as self-assembly flat packs (which reduced production and transport costs) and its 'showroom-warehouse' concept which required customers to pick the furniture up themselves from the warehouse (which reduced retailing costs). Both of these operating principles are still the basis of IKEA's retail operations process today.

Stores are designed to facilitate the smooth flow of customers, from parking, moving through the store itself, to ordering and picking up goods. At the entrance to each store large notice-boards provide advice to shoppers. For young children, there is a supervised children's play area, a small cinema, and a parent and baby room so parents can leave their children in the supervised play area for a time. Parents are recalled via the loudspeaker system if the child has any problems. IKEA 'allow customers to make up their minds in their own time' but 'information points' have staff who can help. All furniture carries a ticket with a code number which indicates its location in the warehouse. (For larger items customers go to the information desks for assistance.) There is also an area where smaller items are displayed, and can be picked directly. Customers then pass through the warehouse where they pick up the items viewed in the showroom. Finally, customers pay at the checkouts, where a ramped conveyor belt moves purchases up to the checkout staff. The exit area has service points and a loading area that allows customers to bring their cars from the car park and load their purchases.

Behind the public face of IKEA's huge stores is a complex worldwide network of suppliers, 1,300 direct suppliers, about 10,000 sub-suppliers, wholesale and transport operations include 26 Distribution Centres. This supply network is vitally important to IKEA. From



purchasing raw materials, right through to finished products arriving in its customers' homes, IKEA relies on close partnerships with its suppliers to achieve both ongoing supply efficiency and new product development. However, IKEA closely controls all supply and development activities from IKEA's home town of Älmhult in Sweden.

But success brings its own problems and some customers became increasingly frustrated with overcrowding and long waiting times. In response IKEA in the UK launched a £150 m programme to 'design out' the bottlenecks. The changes included:

- Clearly marked in-store short cuts allowing customers who just want to visit one area, to avoid having to go through all the preceding areas.
- Express checkout tills for customers with a bag only rather than a trolley.
- Extra 'help staff' at key points to help customers.
- Redesign of the car parks, making them easier to navigate.
- Dropping the ban on taking trolleys out to the car parks for loading (originally implemented to stop vehicles being damaged).
- A new warehouse system to stop popular product lines running out during the day.
- More children's play areas.

IKEA spokeswoman Nicki Craddock said: *'We know people love our products but hate our shopping experience. We are being told that by customers every day, so we can't afford not to make changes. We realized a lot of people took offence at being herded like sheep on the long route around stores. Now if you know what you are looking for and just want to get in, grab it and get out, you can.'*

Operations management is a vital part of IKEA's success

IKEA shows how important operations management is for its own success and the success of any type of organization. Of course, IKEA understands its market and its customers. But, just as important, it knows that the way it manages the network of operations that design, produce and deliver its products and services must be right for its market. No organization can survive in the long term if it cannot supply its customers effectively. And this is essentially what operations management is about – designing, producing and delivering products and services that satisfy market requirements. For any business, it is a vitally important activity. Consider just some of the activities that IKEA's operations managers are involved in.

- Arranging the store's layout to give smooth and effective flow of customers (called process design)
- Designing stylish products that can be flat-packed efficiently (called product design)
- Making sure that all staff can contribute to the company's success (called job design)
- Locating stores of an appropriate size in the most effective place (called supply network design)
- Arranging for the delivery of products to stores (called supply chain management)

- Coping with fluctuations in demand (called capacity management)
- Maintaining cleanliness and safety of storage area (called failure prevention)
- Avoiding running out of products for sale (called inventory management)
- Monitoring and enhancing quality of service to customers (called quality management)
- Continually examining and improving operations practice (called operations improvement).

And these activities are only a small part of IKEA's total operations management effort. But they do give an indication, first of how operations management should contribute to the business's success, and second, what would happen if IKEA's operations managers failed to be effective in carrying out any of its activities. Badly designed processes, inappropriate products, poor locations, disaffected staff, empty shelves, or forgetting the importance of continually improving quality, could all turn a previously successful organization into a failing one. Yet, although the relative importance of these activities will vary between different organizations, operations managers in all organizations will be making the same type of decision (even if what they actually decide is different).