Operations & Supply Chain Management in Service Organizations

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Ed Weenk

OPS & SCM in Service Organizations[1]

Introduction

Operations Management and particularly Supply Chain Management courses (OPS & SCM) typically focus on the flow of materials, information and money. This means that the object of study normally are companies involved in some way or another with the sourcing, manufacturing and/or distribution of physical goods.

A question I receive very often from participants in those courses is if the concepts we discuss can also be applied to service organizations and if so, how. Quite an understandable question, since nowadays many people work in service organizations, be it in the commercial world (banks, insurance companies, restaurants, hospitals, consultancies), in governmental organizations (town hall, police, fire brigade), or even in not-for-profits (NGO's, public schools).

It can be argued that many of the key principles and frameworks at play in OPS & SCM can be directly applied also to service organizations. At the same time, there are also some differences to be taken into consideration.

This article doesn't pretend to give an overview of the latest state of knowledge and experience in service management, its main objective is to link a number of those general OPS & SCM concepts to the world of service organizations, as well as address some of the peculiarities of service management, thus aiming at providing the reader with a basic understanding of Operations in service organizations.

A number of references are made to specific readings from the Service Management domain. At the end of the document an exercise is included which invites the reader to directly apply the concepts from the text to a real service organization.

OPS & SCM basic frameworks

Typically, the main starting point for any of my OPS & SCM courses is the following:

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[1] *This technical note was written by Ed Weenk MSc PDEng, as a complement to basic texts about Operations and Supply Chain Management and to bridge the link towards the operational side of Service Organizations.*

The reason to start here is to create awareness of the fact that in order to be able to develop a solid solution for my operations and/or supply chain (the "how?"), I need to have a very good and clear understanding of what it is supposed to deliver in terms of products and services (the "what?"). This understanding would ultimately lead to identification of the relevant characteristics in terms of **demand**, as well as of **supply**.

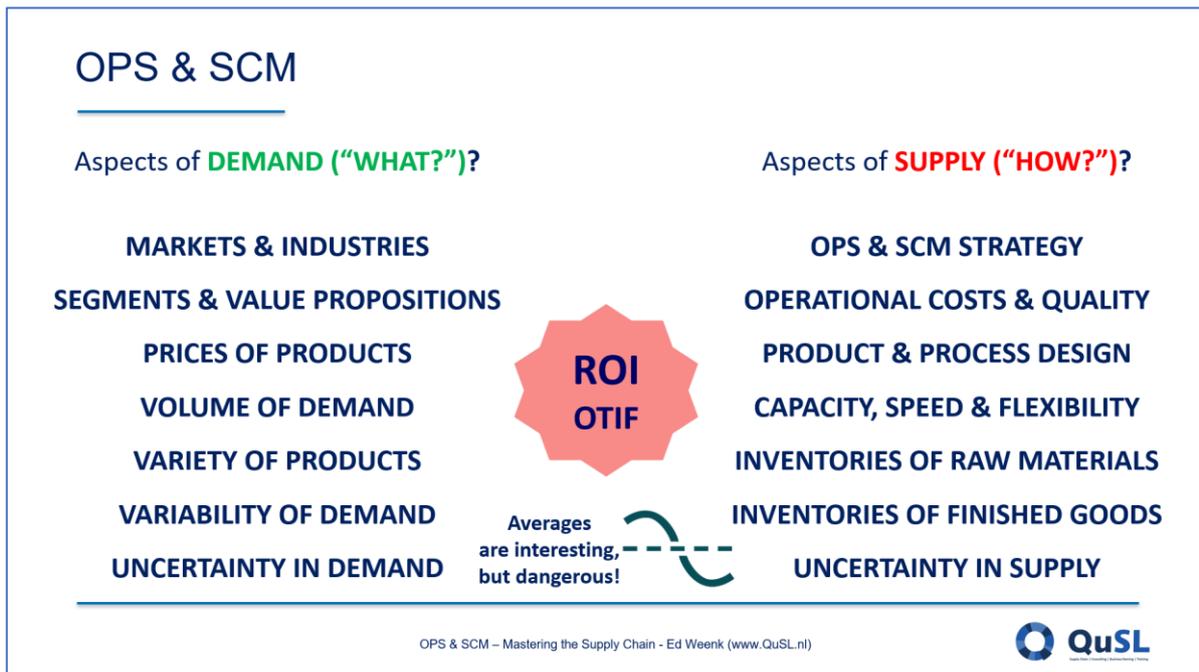Figure 1 below gives a high-level overview of these characteristics.

Figure 1: most relevant characteristics of WHAT? and HOW?

Zooming in a bit more on the elements that make up this HOW?-side, we can take a look at the integral (M)PCIO framework of Visser & Van Goor (2010). They distinguish the following elements as the drivers of operations and supply chain setup (see also Figure 2):

- *Physical Infrastructure*, addressing product characteristics, manufacturing process types, manufacturing, distribution and logistics facilities, make or buy
- *Planning & Control*, addressing the relevant decision making processes, such as forecasting, capacity planning, production planning & scheduling, production & quality, inventory management
- *Information & Systems*, addressing the information needs and system requirements in order to properly support the decision making processes
- *Organization*, addressing which kind of organizational setup fits with the design of the previous elements.
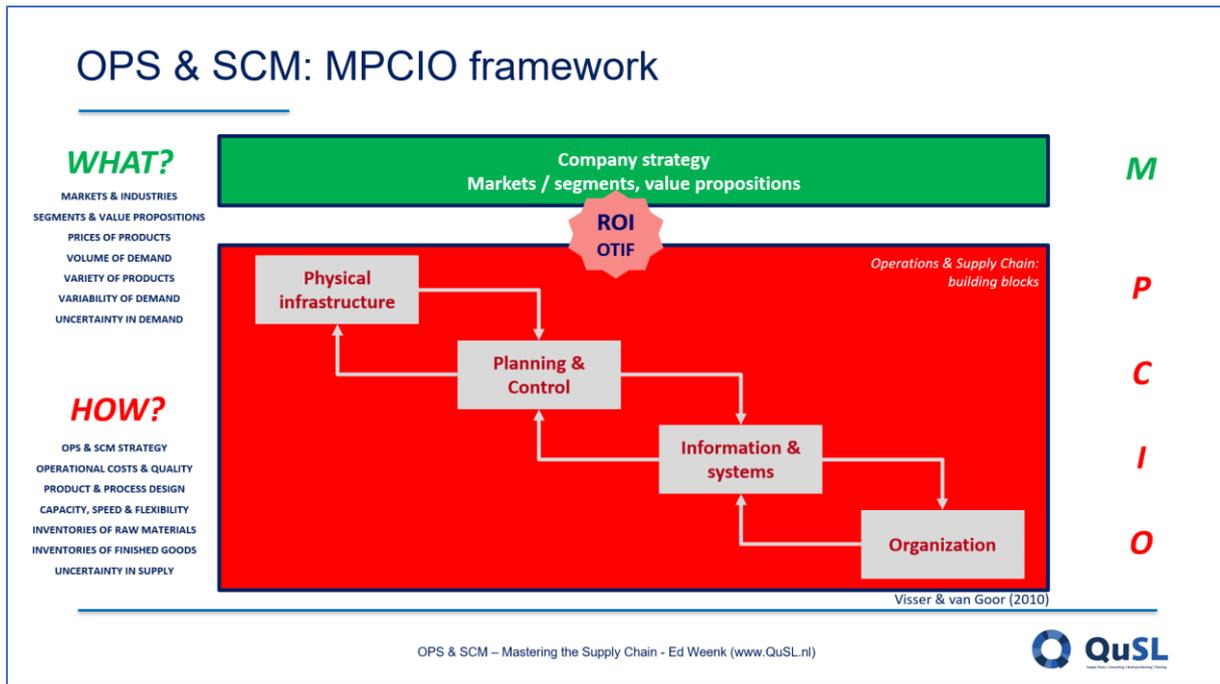
Figure 2: Integral (M)PCIO framework (after Visser & Van Goor, 2010)

Let's now look at how these concepts as depicted in Figures 1 and 2 work out in the environment of Service Organizations.

Service organizations basic framework

Although other frameworks exist, we take here the framework of Normann, who in his classic book 'Service Management' defined the so-called service management concept as consisting out of:

- *The market segment* (who?), addressing the people who would be the customers for the service

- *The service concept* (what?), addressing the exact characteristics of the service that the segment would be looking for

- *The service delivery system* (how?), addressing the operations behind the service, dealing with aspects such as internal/external staffing, design of physical or digital space, capacity dimensioning, quantity, planning, tools and quality. The delivery system also addresses the potential role of the *Client*, since the client in service organizations often acts as a co-producer (think of the traveler who does all of the booking registration and even the complete check-in for a flight via the internet).

These three elements are indeed very similar to those in the integral framework of Visser & Van Goor. In addition, Normann mentions:

- *The image*, addressing the image the company wants to transmit to the outside world. This might be even more important than in the world of physical products, since products once they are bought they stay and last at least for some time, whereas a service finishes and once it is over, the only things that remain are the memory of the service received as well as the company image.
- *The culture and philosophy*, addressing the internal 'corporate spirit' that the organization wants to spread throughout its workforce, since many of the employees will have direct contact with the customers later on and will thus be the 'face' of the company. This is why particularly many service companies have internal Academies (think of McDonald's Hamburger University in Chicago, Illinois). Also check out the articles by Hemp (2002, 'My week as a room-service waiter at the Ritz') and Firnstahl (1989, 'My employees are my service guarantee') as mentioned in the references.

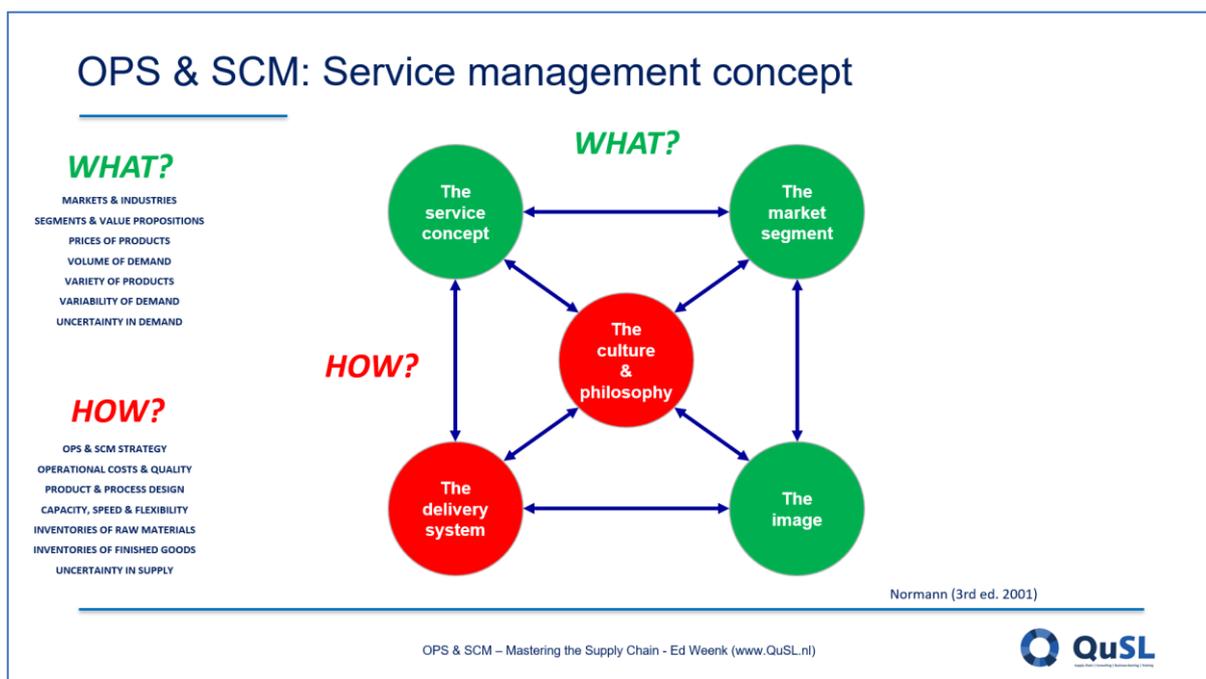Figure 3 gives an overview of Normann's framework of the service management concept.

Figure 3: service management concept (Normann, 2001)

Types of service organizations

Although it is not the purpose of this article to provide an extensive description of types of service organizations (check out the textbooks mentioned in the references), it is useful to briefly establish a basic notion here.

First of all, we can distinguish 'pure' service organizations in which the manipulation, transformation and/or movement of physical goods play hardly any or no role at all, so organizations in which the whole process is based on information or other digital flows, or human activities. Examples are Netflix, mobile online games, insurance companies, schools, airlines, the theater, etc.

Then there are 'hybrid' companies, mainly centered around services, however also with a relevant flow of physical goods as part of the service. Examples are supermarkets which include movement and availability of e.g. groceries, home delivery services which include timely availability and movement of packages, restaurants which include timely availability and movement of food, or hospitals which include the timely availability and movement of medication, surgery tools, etc.

On a side note, the same line of reasoning can be applied to companies focusing on physical goods. Also there 'pure' and 'hybrid' exist. An example of the latter could be any company which in addition to their physical products offer service aspects like delivery speed, product availability, installation services, etc.

The distinction between 'pure' and 'hybrid' is relevant, I believe, because particularly the hybrids might in fact need bits and pieces from operational concepts from both the OPS & SCM world, as well as the services world. This will become more clear in the next section which deals with differences and similarities between physical operations and services.
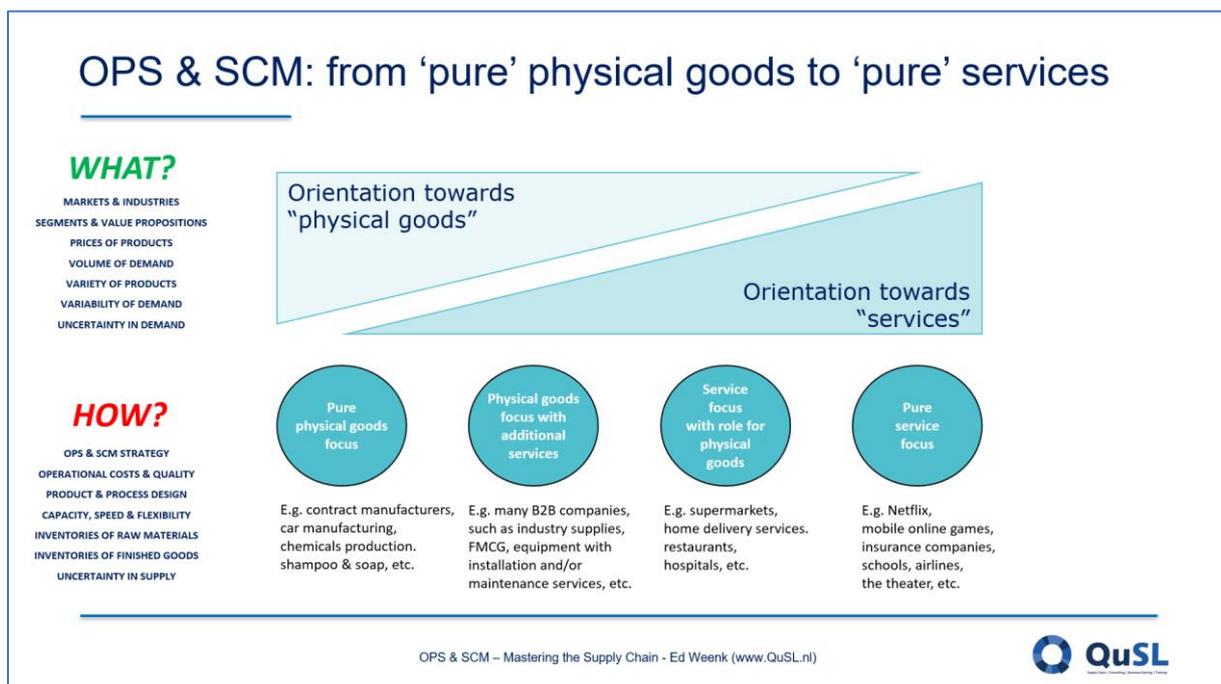

Figure 4: spectrum from 'pure' physical goods focus to 'pure' service focus

Please note, that particularly in the case of companies focused on physical goods, the choice of being a pure product-driven company or opting for additional services has clear links to strategy (e.g.

Treacy & Wiersema's 3 strategies), and as a consequence to the topic of segments and value propositions.

Differences & similarities between OPS & SCM for physical goods and for services[2]

Flows, processes and resources

One of the things that operations in supply chains and in service organizations clearly have in common is that we normally speak about flows, processes and resources[3]. This makes that most of the elements from Figure 1 can be applied to both the operations for physical goods as well as those for services. Something that can also be appreciated in more detail in the similarities between the corresponding elements in the frameworks by Visser & Van Goor on the one hand and Normann on the other (Figures 2 and 3, respectively).

Intangibility and quality

A key difference between products and services is the fact that *services are intangible*. For physical goods, the technical specifications can be documented easily and once the product has been made the conformance to the specifications can be measured objectively. In the case of services this is much less clear. In addition, service performance is much less obvious to be always identical since the role people play in 'service production' is much larger than in the case of production of physical goods.

Also, if something fails during the production of goods, it can still be repaired before shipping it to the customer. In the case of services, the customer is typically present at production. Customer satisfaction for services is therefore a very multifaceted concept, much more than in the case of physical goods. The operational topic of Quality Management has to take this notion into consideration.

The role of distance and time

Whereas in the supply chain, the first and main flows looked at are flows of materials (raw materials, intermediate products and finished goods) and thus primarily physical, in the services world these flows are often about activities or information, sometimes also called the '*workflow*' (think of a digital document flow in a bank).

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[2] See Figure 4 for an overview
[3] Maybe in service organizations most of the resources would be people, space, or technology such as servers, in physical supply chains we would also be speaking about manufacturing machinery, factories and warehouses.

Although conceptually similar, since both can for example be depicted in very similar flowcharts, there is one very big and important practical difference: *in the world of services, on many occasions time and distance play a much less critical role or sometimes even no role at all*.

This is particularly true for 'digital services'. For example, the digital flows of client policy information in an insurance company or the content in a digital streaming service travel very fast nowadays and speed is practically independent of the distance, which means that subsequent steps in the process could potentially take place in very distant places without affecting the speed of the overall process. This obviously cannot be said in the case of physical raw materials which come from a supplier in another country.

Services which are more based on people and face to face interaction, such as consultancy, home care, repair services or medical assistance, can be considered a 'hybrid' here, in which time and distance are not so much connected to materials, but often primarily related to the movement of the people (the service agents), so that for example traffic and the zone of influence of the service ('reach' or 'coverage') versus the desired response time become relevant factors.

In summary, the critical activity of 'buffering against time and distance' as is constantly done in physical supply chains, typically plays out very differently in the context of service organizations.

Inventories and the 'perishability' of service capacity

This brings us directly to another difference between physical goods operations and service operations, which is the role of inventory. Inventory is critical in many physical supply chains, precisely to buffer against time and distance or against uncertainty in demand or supply, however inventories have no role in 'pure' service companies. How could we store a live theater performance for those people who might not make it on the day of the show while still guaranteeing exactly the same experience to the spectator? Or how would we store today's unused airline capacity so that we could potentially move today's empty seats in the plane to next week when a peak in travelers is foreseen?

This is of course not possible. In a way, one could say that *capacity in service organizations is 'perishable'*: if not used today, then it's lost, like fresh food will also become obsolete if not used on time. It's clear that this puts additional strain on the task of capacity utilization and therefore also the task of demand management gains even more relevance. Sasser already wrote a classic article in 1976 about the challenges of matching demand and supply in service organizations in which he addresses different ways of dealing with the issue.

The role of the customer (1): moments of truth

Another difference between the world of physical goods and services is the role of the customer. This was briefly mentioned before when discussing Normann's service management concept. Of course, the customer is the one who pays you, thus being the main source of revenue. This is the same for physical goods as it if for services. However, *in the world of services the customer is in many cases present at the moment that the service is 'produced'*.

This leads to a number of additional requirements in terms of the design of the physical space or even staff behavior: after all you're in front of the client when the service takes place. You probably don't care if the machine operator was smiling when they assembled your smartphone in the factory, but you definitely care about that smile in case of the waiter bringing you your ordered food to the table.

In addition, it leads to challenges in terms of what to do if something fails during the execution. Since the customer is there at the same moment, it's really about 'saving the situation' and the challenge is first of all how to prepare your staff for being able to save such moments and at the same time about which degree of freedom to give them to find a solution to turn the negative situation around and make the customer still feel satisfied.

If there's something wrong with the pizza just delivered, what can the delivery person do to save the situation? Should they take it back and order a new one? Give away a free drink? Offer a voucher for the next pizza? Order a new one? Even the difference between the Art and Science becomes a relevant dimension here, i.e. have employees stick to the standard procedures, or allow for the interpretation and 'art' of the employee in question to act to their own judgment (Hall and Johnson, 2009).

This phenomenon of production in the presence of the customer is referred to by Normann as *Moments of Truth*, others have coined these moments *touchpoints*. In a more extensive end-to-end view, we would speak about the entire *customer journey*. See also the article by Rawson et al (2013) about these customer journeys. Part of 'proper' service design is about shaping the entire customer journey, including those parts where things can go wrong ("customer journey mapping").

The role of the customer (2): co-producer

The second dimension of the role of the customer in service delivery is the one of *co-producer*. As in the example of the traveler which was mentioned before, customers play a more and more important and visible role in service delivery. In an way, part of the process is being "outsourced" to the customer, who then in a way becomes supplier and customer at the same time. With this we then also have more and more dependency on this external figure in the execution of our own process, which means that our process should be robust enough to deal with a wide range of

potentially 'off-spec' or even undesired customer input. What to do in the case the customer has made a mistake in their part of the process? How should they be 'corrected' without damaging the customer experience?

Figure 5: differences and similarities between physical goods & services

Service design

So how to design services that deal with all of these basic challenges:

- which we also see in physical operations and supply chains, such as resources, demand variety and variability or capacity?, and
- which at the same time are robust enough to deal with the peculiarities of services, for example dealing with the moments of truth, the perishability of capacity, etc.?

Shostack already wrote about this topic in the early 1980's and in basic service design we still take into consideration some factors that she mentioned back then:

- Physical evidence / touchpoints / moments of truth
- Customer actions / actions done or initiated by the client
- Front office / visible provider actions
- Back office / invisible employee actions
- Support processes

The abovementioned elements can be combined and be depicted in a so-called "swimming lane" flowchart. See a generic template in Figure 6 and an example below in Figure 7.
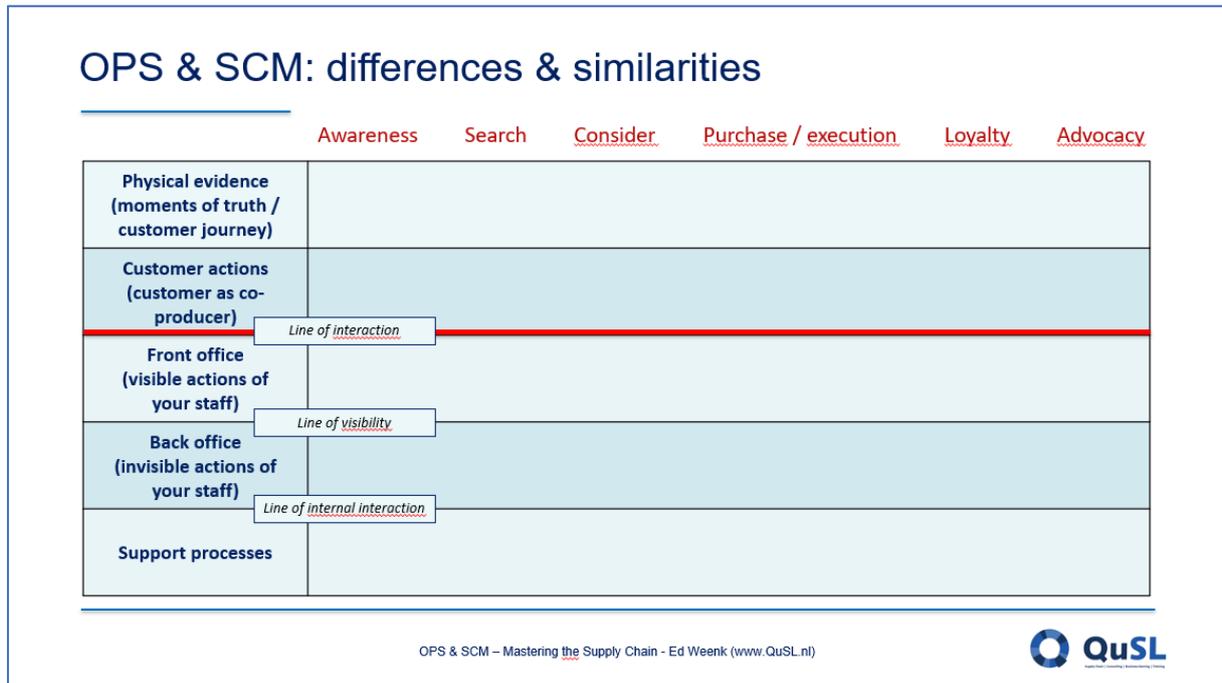
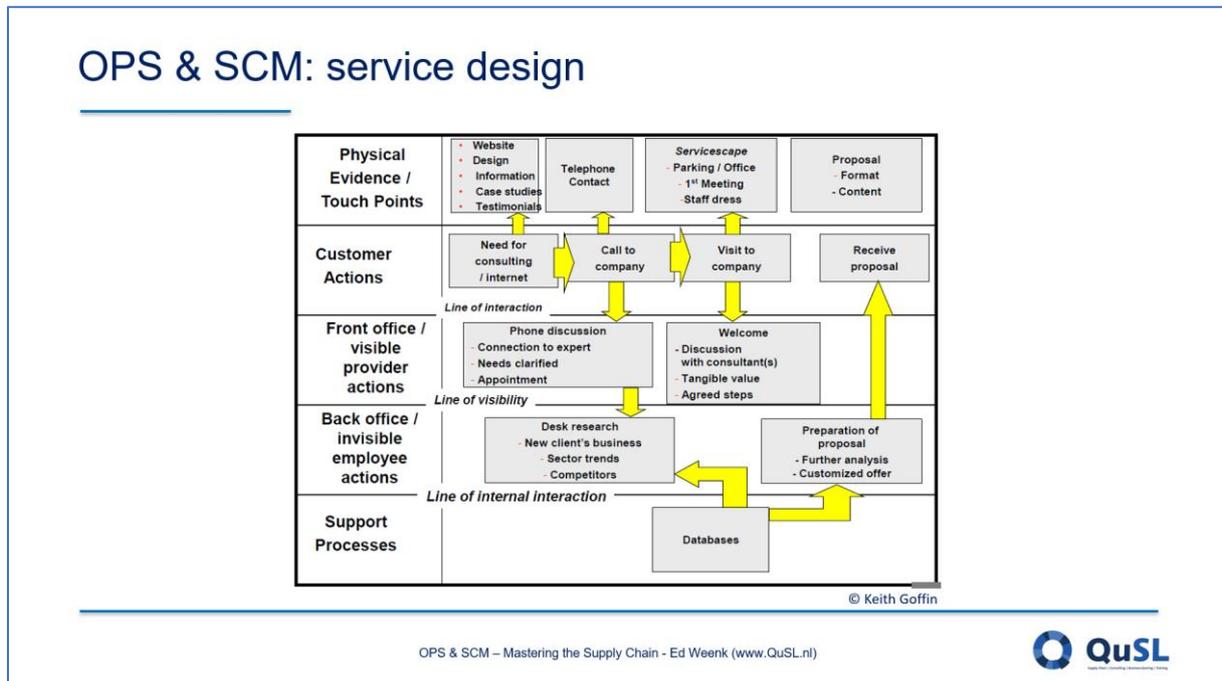*Figure 6:template of swimming lane diagram for service design*

Figure 7: example of swimming lane diagram for service design, as done by a colleague ©Keith Goffin

Summary

In this brief technical note, I have tried to link a number of the general OPS & SCM concepts to the world of service organizations, as well as address some of the peculiarities of service management,

thus aiming at providing the reader with a basic understanding of Operations in service organizations.

As hopefully has been illustrated, many of the key principles and frameworks of WHAT & HOW at play in OPS & SCM, especially the ones shown in Figure 1, can be directly applied also to service organizations. At the same time, we have seen that there are also some important differences to be taken into consideration.

Thus, physical operations and supply chain as well as service operations are both part of the fascinating and dynamic world of OPS & SCM. The reader is invited to give a try to the Exercises on the following pages and through practical application get even a better view on the topic.

References

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Recommendable books on Service Management

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- Normann, R. (2001), *Service Management : Strategy and Leadership in Service Business*, 3rd Edition, John Wiley & Sons

Basic texts about OPS & SCM

- Simchi-Levi, D. (2010) *Operations rules: delivering customer value through flexible operations*, MIT Press
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