

# Class #1783

# Information Systems

## *Report StarTel and Reflection*

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*Groß-Gerau, 12 July 2018*



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**Word Count Part A: 2415**

**Word Count Part B: 390 (reflection)+ 274 (Post summary) = 664**

The word count excludes the following:

- Cover page
- Contents page
- References and Bibliography unless part of the StarTel Report
- Diagrams and sub text
- Appendices
- Online posts

## 1. Part A: Report on StarTel: A Case Study

### 1.1. Title Page with executive Summary

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# SBS

# Consultancy



Report for:

*StarTel + MobBitz: IT System Merger*

and

*eCommerce Strategy Recommendations*

*Executive Summary:*

*To support StarTel branches throughout Europe, the new warehouse and enterprise management system SAP, on premise, is suggested with migrations of MobBitz and StarTel branches in sequence. To archive fitting information systems and support StarTel's vision statements "speed, flexibility and price", due diligence for all existing business practices and macro locations is proposed. Hybris for enabling eCommerce for End-Customers is and to establish a new eCommerce team to look after the new topics like social media is suggested.*



Prepared by Frederik Unser



## 1.2. Contents overview

This SBS consultancy Report for StarTel has the content structured in the following chapters:

1. Report StarTel
  - 1.1. Title page
  - 1.2. Content
  - 1.3. Introduction
  - 1.4. Main Section
  - 1.5. Conclusions and Recommendations
  - 1.6. References

## 1.3. Introduction

Thanks for choosing SBS consulting, the consulting company in the mobile sector. This Report will highlight the current tasks and challenges to consolidate the StarTel with MobBitz IT systems to enable eCommerce.

First, the tasks were to evaluate where the future company goals - *most flexible mobile accessories company for customers*- are placed, what the competitive advances should be - *speed, flexibility, price* - and how business flows should run. To capture the vision of the company was, and always is, important before designing IT landscapes and Business process to support the adequately (Nestell & Olson, 2018).

As StarTel and MobBitz have currently different IT Systems, they need to be comprehended and steps evaluated how the data from both companies could be migrated to a joint platform, accounting for the different data sets and requirements today. Migration target should be an Enterprise Resource Planning (ERP) system, which should be established to fulfil orders from the new English warehouse. This would result in only one warehouse and all retailers in the ERP system, this standardizing will allow for the biggest gain of such a global ERP (MATTHEWS, 2014).

Secondly, it will be evaluated how eCommerce for such an ERP can be enabled, considering the factors that retail stores nowadays allow browsing and shopping but will in the future allow for online orders to be picked-up. The other option given in online shopping will be shipping the goods, both should be provided throughout Europe (UK and European Free Trade Area). Concrete customer actions will be showcased using business process modelling (BPM) notation.

Lastly, concrete software approaches and roll-out timeline, including tasks like training, will be recommended for the realisation phase. The Report will close with an outlook on further possible steps once these two requirements (ERP and eCommerce) are established in their current core vision.



## 1.4. Main Section

### 1.4.1. Merge IT Systems StarTel and MobBitz

To get the most out of ERP, all branches and warehouses must be integrated with their current needs and future envisioned features. To gather these, holistic due diligence must take place to capture requirements from the angles of data storage today, staff interaction (data creation, modification and deletion) and raise awareness and migration support in all company layers (Roman, 2014).

#### 1.4.1.1. *Due Diligence – Management input*

As a starting point here, the author wants to summarize the already received input from the Management (Sharith) on Business Strategy. The new central warehouse in North England should be used for all Retail stores as a backend and for all online orders.

ERP system must support localised shops (local languages) as well as country specific items.

During an ordering process the customer can select between pickup in any store (regardless of inventory in the retail store) or delivery. If shipping to the store is required, the warehouse will initiate automatically and use an internal logistic partner for large (combined) shipments. Shipments directly to the customer will be processed in the warehouse and handed over to the business-to-customer (B2C) logistic partner. The customer can return orders in both ways, either at the retail shop or via shipping using the same B2C logistic partner again.

The provided input on organisational culture and targeted competitive advantage are based on swiftness and precision.

The target type of eCommerce is only B2C, there are no business-to-business (B2B) or customer-to-customer (C2C) activities envisioned.

Furthermore, the system should allow for human resources management, like time tracking and skill set mapping.

#### 1.4.1.2. *Input from existing StarTel Branches*

All activities to fulfil customer shopping onsite today must be reviewed, especially in regards to stock and finance management and resulting information systems. This should especially incorporate the customer requirements on the products the company can deliver.

Staff and environment are often neglected factors during information system buildout and planning, see right hand side of figure 1.4.1.2 (Ahmadi, Nilashi, Shahmoradi, & Ibrahim, 2017). Personal feedback from staff and their perception of the StarTel environment, now and in future, should be gathered (Roman, 2014).

This should reduce resistance hence ensure a successfully setup and usage of the ERP system. All data in the figure needs to be discussed with all StarTel Branches and resulting requirements agreed by management.



Figure 1.4.1.2: Adoption to an information system and to be regarded factors

Source: Adapted (modified) from: Ahmadi, H., Nilashi, M., Shahmoradi, L., & Ibrahim, O. (2017). Hospital Information System adoption: Expert perspectives on an adoption framework for Malaysian public hospitals. *Computers in Human Behavior*, fig.1

1.4.1.3. Input from new MobBitz Branches

All activities to fulfil customer shopping onsite today must be reviewed, especially in regards to stock and finance management and resulting information systems. Personal feedback from staff and their perception of the StarTel environment, now and in future, as done with StarTel. This should especially incorporate the customer requirements on the products the company can deliver for each of the different markets, including country specialisations and different language interfaces.

Again, all factors of figure 1.4.1.2 need to be checked, especially in comparison to the gathered data for StarTel which is only focused on the UK market. All data in the figure needs to be discussed with all StarTel and MobBitz branches in at least two collaborative sessions and resulting requirements agreed by management. The result should cover the action areas as show in figure 1.4.1.3, especially the data entry and stock / finance management from StarTel and MobBitz should be regarded and be optimize as it is regarded as core business functions.

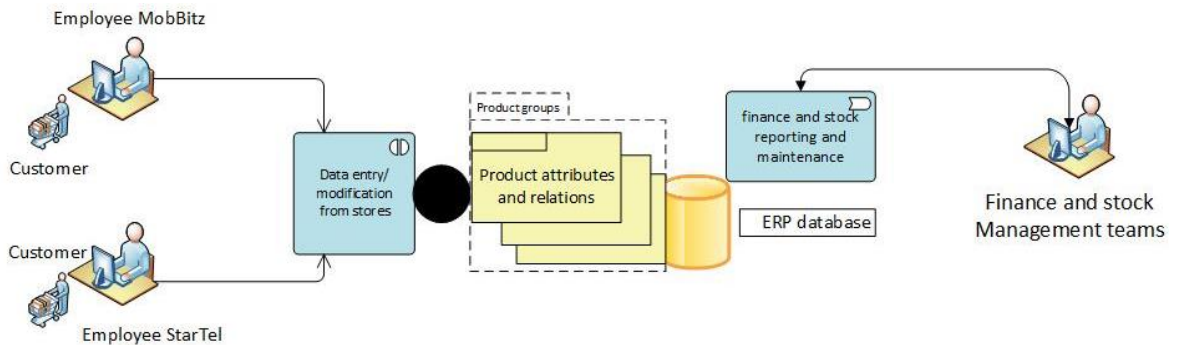


Figure 1.4.1.3: Requirements / input from employees. Source: Author

#### 1.4.1.4. Input from existing Suppliers

Both parties, StarTel and MobBitz, need to review existing suppliers and how they can be integrated into the ERP system. Their integration in existing information systems today, for example, a list of received goods per order and what data standards for the digital data exchanges is used, needs to be provided.



Figure 1.4.1.4: Supplier input to ERP; Source: Author

#### 1.4.1.5. Input from logistic partners

Both parties, StarTel and MobBitz, need to review existing logistic partners and how they can be integrated into the ERP system. Their integration in existing information systems today, for example, a list of tracking codes per order and what data standards for the digital data exchanges is used, needs to be provided.



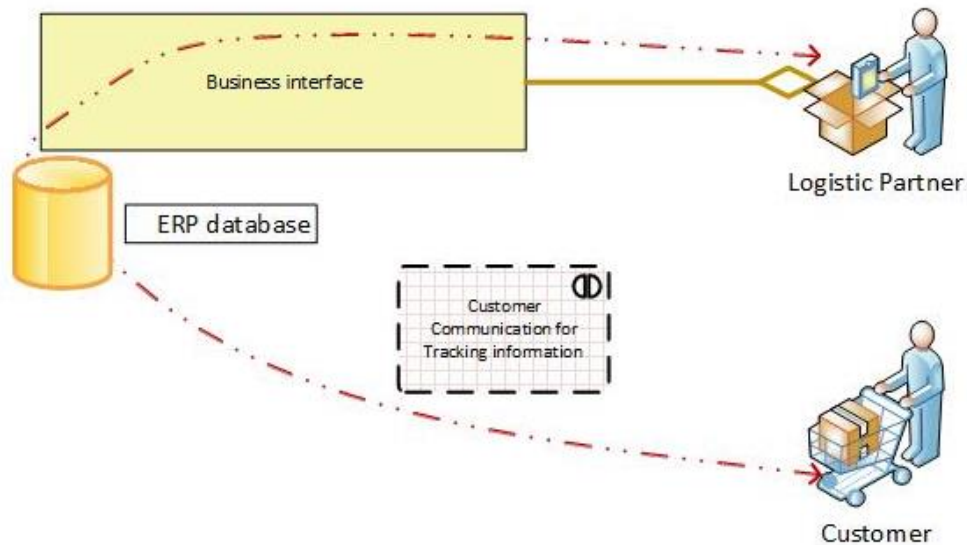


Figure 1.4.1.5: Logistic partner data exchange; Source: Author

A new distributor for B2C shipments may need to be found. For new logistic partners it is a requirement that they support digital data exchange, this must be considered during discussions (RALEIGH, 2008). One example is a tracking code for customers, that must be stored in the company's ERP system and available for the company as well as customer use, see red line in figure 1.4.1.5.

## 1.4.2. Build ERP system

### 1.4.2.1. Data consolidation

Once all steps of 1.4.1 are concluded, the gathered requirements for the information systems (ERP) must be reviewed and consolidated in a Business process re-engineering development to get rid of any waste, which must not be entered into the new system (Edgell Communications, Inc., 2017).

Furthermore, all factors to enable StarTel to use the information systems as a competitive advantage were used: business management, internal value creation by employees, external value creation by suppliers and logistic partners, allowing for cost reduction and creating of differentiation advantages (Greguš & Beňová, 2007).

A finished ERP would look like figure 1.4.2.1.

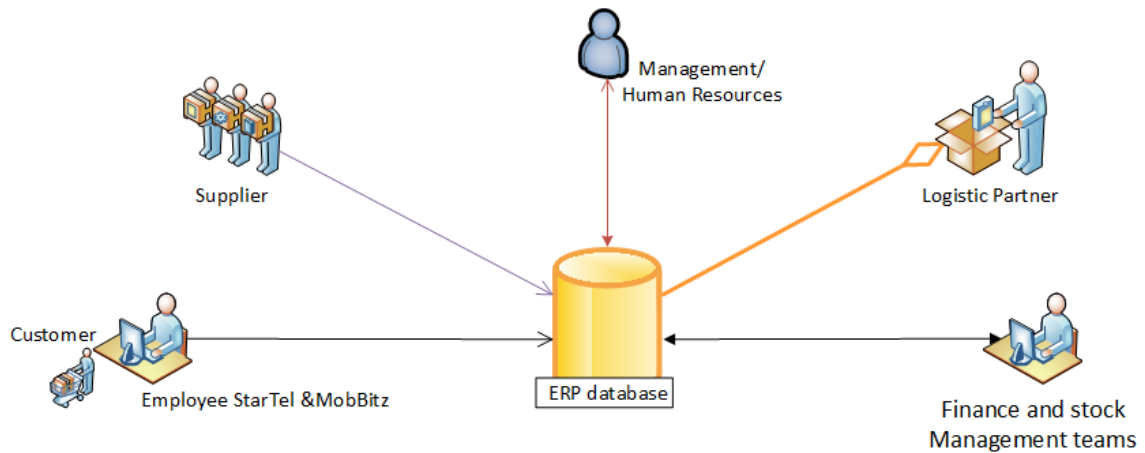


Figure 1.4.2.1: Final ERP parts and modules. Source: Author

This allows for all data to be stored in one centralized database with different data sets, resulting in improved visibility across all departments and easier accounting and cross-mapping of data. The database should allow for local in country names and prices for eCommerce; All eCommerce functions need to be thought of during the design to be ready for a next step in the StarTel/MobBitz transformation.

Management active involvement is very important to be created as a permanent position. Since the business objectives and markets will grow, the information system needs to be sustained to adapt to such changes. (Project-) Management will need to go over the “plan, do, check, act” (PDCA) cycle regularly in the post-implementation phase, like they will do during implementation, as part of their monitoring and controlling function, to have a sustainable ERP system (S-ERP) (Chofreh, F, & Klemes, 2018).

#### 1.4.2.2. Software selection and data upload

Currently StarTel runs its retailer database in Oracle and some Microsoft SQL for invoices, while MobBitz runs its entire information system in four different databases, two Microsoft SQL and two SQLite instances.

In the earlier dialogs with management, the decision was made to use SAP in the future as it has the highest flexibility and optimisation potential for speed (Werner, 2009), being in-line with the business objective to be the fastest mobile retailer.

Alternative A) MS Dynamics was not chosen due to its focus on customer relationship management (CRM) only and no capability for human resources management; B) NetSuite was perceived similar powerful to SAP, but high costs and limitations in integration (Dunzelman, 2013) hindered commitment.

Although SAP supports Oracle and SQL (Intrup, 2008), SAP Hana as a database is recommended since the in-memory analytic function and massively parallel options allow for real-time decision making (Mankala & Ganesh, 2013).

This will result in a migration of the existing databases. The existing data need to be mapped (for example via the mark-up Language XML) to the target database coding and the data needs to be uploaded into the new system. Specialists (Ispierer, 2018) offer migration from Oracle and MySQL alike to SAP so this is no hindrance.

With such a migration approach, branches would move one by one to new ERP system which needs to go along with a full branch inventory to ensure accuracy.

#### 1.4.2.3. Hardware or cloud: A mix combination.

As the chosen target software for ERP is clear, the infrastructure sizing and plan for resiliency, including cloud connection for either scaling or/and backup, can only happen once



the full ERP system semantic has been agreed as outlined in 1.4.2.1. The sizing should furthermore account for the upcoming eCommerce data and functionality of the CRM (Nestell & Olson, 2018).

Once the final hardware requirements are clear, on-premise hardware is recommended for the productive data storage, due to network performance and security concerns. However, SAP Hana should be setup with SAP Hana Cloud integration (HCI) which allows to have the backup system or sandbox, the test environment, in the cloud (Bilay, Gutsche, & Peter, 2016). This combination of on-premise and cloud will allow for faster scaling and keep costs down, furthermore the IT Department can use their time to focus on the productive system. The Infrastructure as a service (IAAS) approach was not reviewed further, as the set up with a lack of physical security and high costs did not yield a good perspective for StarTel.

### 1.4.3. Migration to new ERP

Performance testing and graphical user interface (GUI) design needs to be completed before migration, training and order fulfilment via ERP clients (Retail Branches).

One key element is to have all staff trained and prepared for using the new system, maybe even, where possible, a few days in parallel. Training needs to reflect the new business process (where there are changes) and the new GUI / software interaction. Trainings are usually cascaded down from the consultancy to project team and technical specialists to the end users. A simple how-to document will not be sufficient to users who will work with the system a lot, here interactive events like classes or webinars are appropriated (Nestell & Olson, 2018, pp. 103-107). This will also include suppliers and logistic partners were required.

### 1.4.4. Enable eCommerce for StarTel and MobBitz

With the migration of StarTel and MobBitz to one information system completed, the next step is to enable eCommerce for B2C. Most popular ERP systems have added to their core roles the eCommerce, CRM and Business Intelligence (Callaway, 2000).

Since 2013 SAP bought Hybris which is now a commercial extension that can be hosted in the cloud as well (Wireless News, 2016) allowing for quick setup, even in parallel to the ERP move of StarTel as envisioned in the timeline below.

The new Hybris would allow for omnichannel marketing, with an online web shop presence that is scaling to the client device, mobile or laptop. All data is fully integrated in SAP and allows for full CRM features, so customer could order online what they have bought in a store last year, when they have used the same customer number. With Business Intelligence, the company could start cross-marketing, for example, if the customer needs a bumper case for his mobile, possibly leading to higher sales rates (Agiu, Mateescu, & Muntean, 2014).

The online shop should be able to be viewed in different languages, ideally automatically set to the correct one via cookies/IP detection technology of the location.

Now the customer becomes a direct part of the ERP system as shown in figure 1.4.4

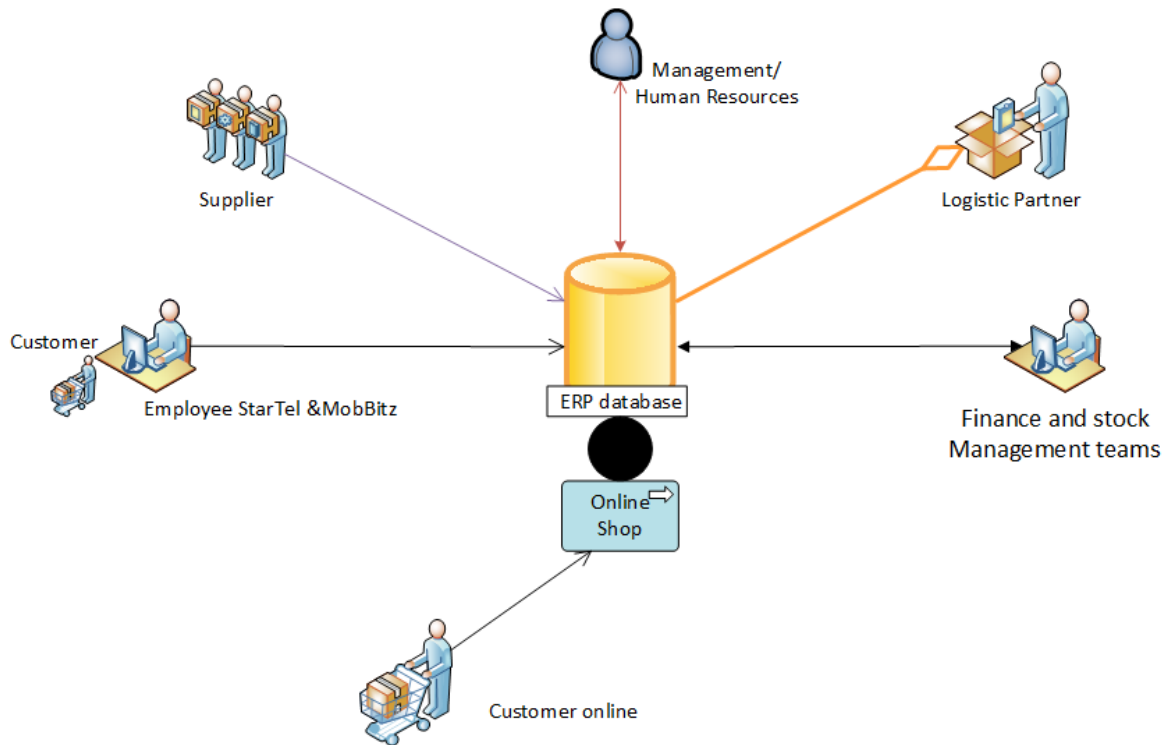


Figure 1.4.4: ERP system with eCommerce, including the customer directly to eCommerce.  
Source: Author

The online shop / SAP hybrid should be maintained by a dedicated team to fulfil any customer questions quickly, while the system itself should be as much automated as possible, including shipping to the retail stores or to customers out of the new central warehouse. If the assumed optimisations in the various teams have created some free time as anticipated, the company could create the team without new hires.

Such a team would also be responsible to leverage social services to market good, collect customer feedback or publicise the brand.

1.4.5. Timelines

To establish the above, the timelines for various tasks are shown in figure 1.4.5. They need to be initiated and run through, regardless of the product decision or the ERP database layout.

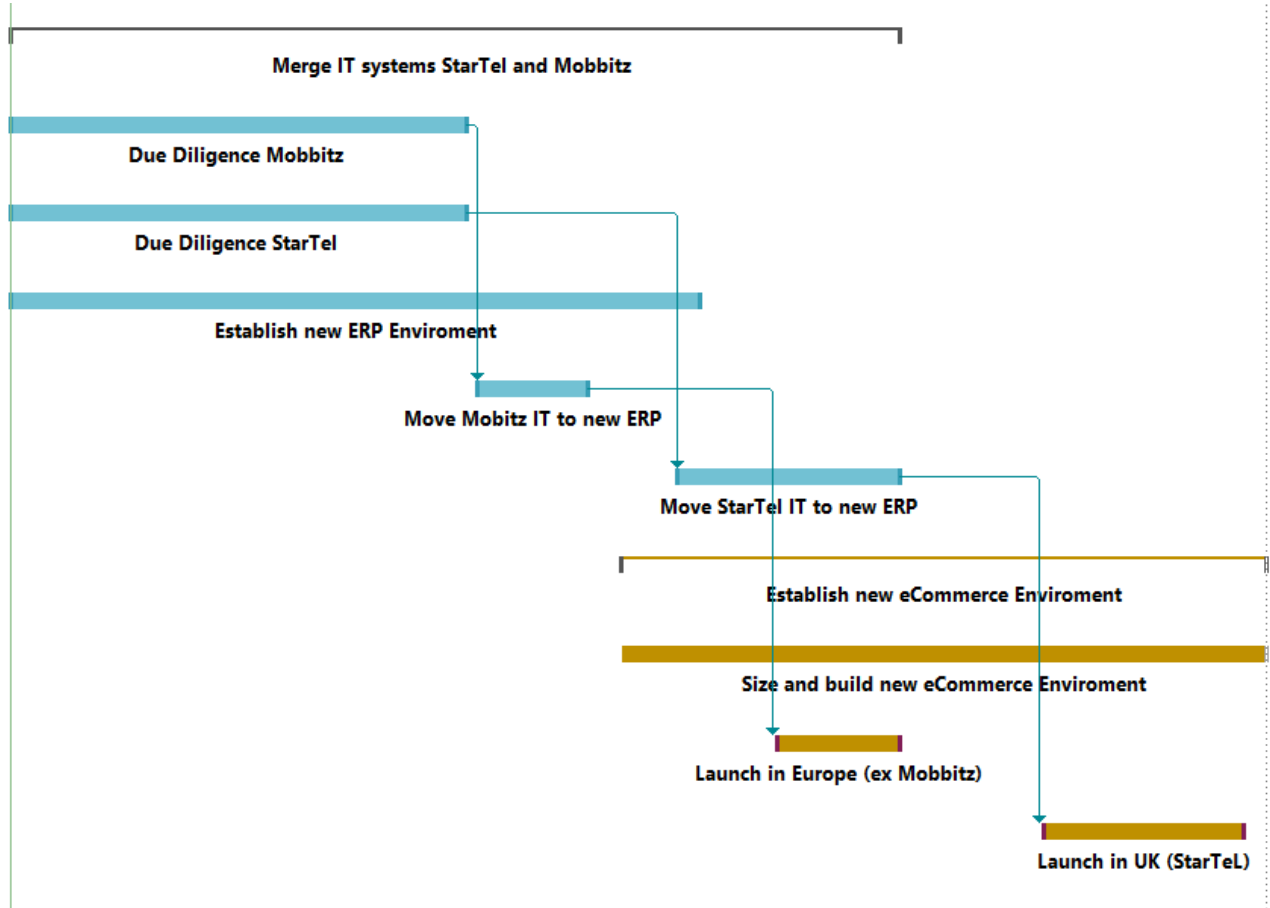


Figure 1.4.5: Timelines and dependencies for ERP and eCommerce realisation  
Source: Author

## 1.4.6. Business Process Model

The Business process model (BPM) below, figure 1.4.6, shows how the customer would place the order and pick how the good get to him, either via delivery or he can pick it up at a retailer store.

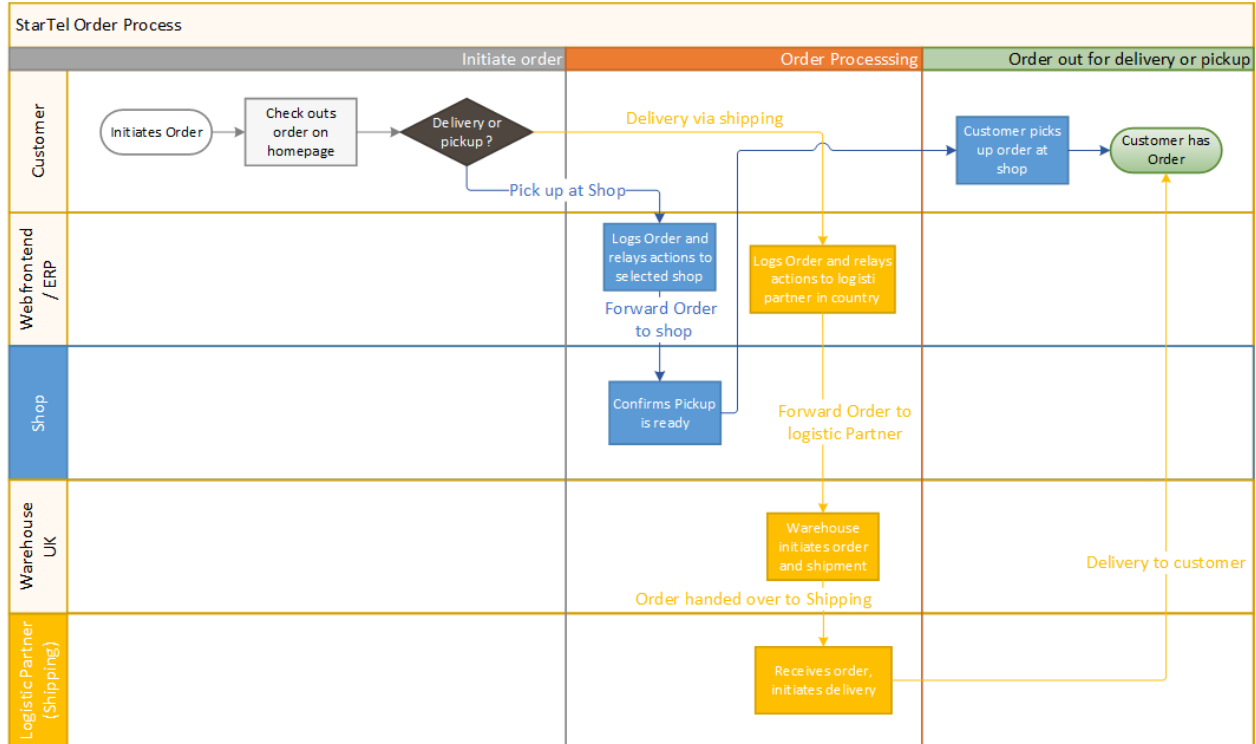


Figure 1.4.6: BPM for an online order showing both possible paths. Blue boxes represent the retailer path, yellow boxes the shipping path. Source: Author

## 1.5. Conclusions and Recommendations

The clear vision from the StarTel management to use SAP made it possible to go ahead with the planning with a select software solution on hand, which has all functions (as much eCommerce as possible) onboard with its standard “vanilla” installation. Doing so will avoid high customisation costs and high maintenance efforts due to customisation. This decision will allow for easier upgrades within the software selected.

For the IT migration, it must be ensured business can be run from one warehouse, especially in terms of logistics. It must be verified with the logistic partner(s) that he can distribute to the retail stores and customers in Europe in a timely manner and using data exchanges to the ERP for company and customer insight, like a tracking ID. Where a new logistic partner needs to be brought in for this, it must be ensured contracts for him are in place before going live with either company internal move to ERP or eCommerce roll out.

The factor of training must be stretched again, as the time and materials need to be set aside for it, on top of the technical aspects of the migration and the daily work of staff.

In addition, new development on the SAP Hybris side were announced with new features (Wireless News, 2017), which needs to be followed as part of the permanent Plan-Do-Check-Act cycle for management (Chofreh, F, & Klimes, 2018).



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## 2. Part B: Online Collaborative Technologies – Reflection and Summary of posts

### 2.1. Reflection

One can use the Gibb's reflection cycle for debriefing as written on [www.salford.ac.uk/skills-for-learning/home/reading-and-writing#reflective](http://www.salford.ac.uk/skills-for-learning/home/reading-and-writing#reflective) and reviewed by Husebø, S.E., O'Regan S. & Nestel, D (2015) for use in the health sector, but can be applied in all sectors. This was enhanced by the given rating table, see below.

#### 2.1.1. Online Discussion - Self-Assessment: Description:

Today I exercise in the module "Information Systems as part of my study of "Information Technology Management" at the Salford University. The second assignment is completed and I write the reflecting cycle on the online posts.

#### 2.1.2. Online Discussion - Self-Assessment: Feelings:

I was surprised by first blog exercises, where a joint work from all peers was required to fulfil the brief, as so far it was only private communication about the current subject with my international student peers.

The second unit gave me the opportunity to add to the discourse on ethics and legal, starting with somebody who is my personal favourite and was not named in the course material provided: Joseph Weizenbaum. As a great pioneer, establishing computing in military appliances and coining the term Artificial Intelligence (AI). He reflected on his doing and the ones of his colleagues and concluded, not everything that can be done with technology, must be done, but only if it is for the good of *all mankind*.

#### 2.1.3. Online Discussion - Self-Assessment: Evaluation:

I did start to do add my impression with important piece of work on the Cloud collaborative education [blog](#): Internationalisation background of the cloud education. It was hard to combine the topic of IT and internet with the international topic and highlight the challenges and opportunities for students, faculty and universities.

I was surprised to find the JURIX during my research, an established forum for legal and IS topics, were it is sometimes unclear where the borders are. One case where "how to define borders for AI" was particularly interesting, challenging how AI should be programmed to violate rules where necessary – like we humans do (Bench-Capon & Modgil, 2016).

#### 2.1.4. Online Discussion - Self-Assessment: Analysis:

When adding my references, I did sort all references by author name as per requested [Harvard notation system](#) standard but found that others did not follow the sort-by-author rule. While both articles were posted online and gave my student peers some insight, the topics could have used more time and word easily.

#### 2.1.5. Online Discussion - Self-Assessment: Conclusion:

It did occur to me, that I was commenting on what I myself was doing now, in the assignment but especially during the entire Robert Kennedy College/Salford time, collaborating effortless with students across country borders. Writing made me look at it from a different side.

#### 2.1.6. Online Discussion - Self-Assessment: Action Plan:

The view on the online campus from "outside" was interesting but, I think luckily, did not change my approach or opinion on such institutions and my work.



Reference (2) :

Bench-Capon, T., & Modgil, S. (2016). When and how to violate norms. In *Legal Knowledge and Information Systems - JURIX 2016: The 29th Annual Conference* (Vol. 294, pp. 43-52). (Frontiers in Artificial Intelligence and Applications; Vol. 294). IOS Press. DOI: [10.3233/978-1-61499-726-9-43](https://doi.org/10.3233/978-1-61499-726-9-43)

Husebø, S.E., O'Regan, S. & Nestel, D (2015). Reflective Practice and Its Role in Simulation. *Clinical Simulation in Nursing*, Volume 11, Issue 8, p. 368-375



## 2.1.7. Online Discussion - Self-Assessment: Rating table:

Rating		72 Overall				
Frederik User	80+	70-79	60-69	50-59	40-49	0-40
<b>Quality of contributions</b>	Made several good contributions and one or more outstanding contribution.	Made several good contributions.	Made a few good contributions	Made a few valid contributions	Made 1 or 2 postings, of poor quality	Did not contribute.
		77 Good Contributions through the second part of the module				
<b>Attribution of references</b>	Clear referencing of well-chosen and highly relevant sources	Clear referencing of all sources, some relevant..	Clear referencing of all sources.	Sources generally referenced.	Used ideas/ words of others without attribution.	Cut and paste or absent contributions.
			65 All references were presented in good shape and from relevant sources			
<b>Evidence of collaboration/facilitation skills</b>	Skill shown in weaving contributions into the discussions and wiki, and following up on contributions of others.	Skill shown in weaving contributions into discussion and / or wiki, or following up on contributions of others	Some evidence of links to contributions of others.	Basic recognition of contributions of others.	Little or no recognition of contributions of others.	None
		75 Did give feedback and corrections to others				
<b>Reflection on online contributions (in reflective summary)</b>	Deep reflection shown, with clear and substantial evidence from online discussion and wiki	Good reflection, with clear evidence from online discussion and / or wiki	Reflection and evidence offered, limitations in one of these	Reflection and evidence offered, limitations in both of these	Superficial reflection, very limited evidence	Very little or no reflection/evidence.
		70 Reflection did show skilled use of online collaboration but could have been more enthusiastic				



### 2.2. Online Posts

All Posts can be found online at the Class #1783 - Information Systems Forum:

<https://campus.college.ch/forum/topics/-1783> and [docs.google.com/document/d/1iByy\\_Hn...](https://docs.google.com/document/d/1iByy_Hn...)

Relevant Posts are posted 25<sup>th</sup> of June 2018 to 15 Jul 2018

#### 2.2.1. Summary of the online posts:

Post1:

Enabling Internationalisation in cloud learning has the two different aspects: IT and people. While both vary hugely in their features, the internet is the connection tool which is not available for everybody. For the IT side, it would not matter hugely if infrastructure or cloud is provided as a platform, as long as network connection and security is setup to ensure equal (fast) and secure access.

As for the people accessing the online platforms, they will not necessarily have the same background and understanding of norms, so it is important for the learning platform to honour this fact by ensuring the norm it want to set and will imply on all students going forward, for collaboration or individual work. As the world is growing together more and more, such a setting with high internationalisation will also be found in the work environment. Students with international experience, and exposure to international ethical, cultural, etc. norms will benefit in such a future work environment and universities should foster such norms

Post2:

Weizenbaum showed early that information systems can be a threat to data protection and privacy. He asks professionals to act socially responsible and take this into account at any point of an IS creation.

People like O'Neil (2017) see that IS is already starting to threat societies.

Where such professional habit is not present, legal requirements must be full filled, for all countries an IS would be hosted in, process data or gather data. One of the largely heard about laws for such legal requirements is the Data Protection Regulation (GDPR), enforcing reflective use or avoiding obvious threats to data protection / privacy for European citizens.



### 3. Appendix A1 – Online Post1

## Enabling Internationalisation in cloud learning

Cloud is an ever-growing word in the last few years, and also in (higher) education a cloud computing was established successfully for global learning (LIANG et al., 2017). This means that the infrastructure the university is relying on, currently being represented physically, but via the internet, relying on IT services. This can be either an Infrastructure service (IAAS), a Platform as a service (PAAS) or just the software as a service (SAAS) which all could be accessed from remote, enabling global learning. The internationalisation is coming with some level of risk, as not all people in the world have access to the internet equally, despite it being declared a human right by Bernasconi & Maxlow (2010).

As most universities have a regional zone of attraction, there is an established, maybe country-wide, level of norms. These norms can consist of shared values, beliefs, view of authority, relationships and work ethic as suggested by PMI PMBOK Fourth Edition (2008).

In a cloud learning environment such norms need to be established and communicated in order to create a new environment for learning and teaching as suggested by Siemsen (2015).

Further, the existing universities need to overcome their prestigious feeling of only needing to offer onsite, to make it an even playing field and do not use their names as "degree mills" with high prices and low-quality education as described by Hadzhikoleva et al (2018).

It also must be regarded under new light of privacy due to the new way of data handling, for students, as well as for professors and learning materials. However, the digitalization in this case allows for better sharing of the learning materials and working effortless and actively with students across country borders (LIANG et al., 2017).

As internationalisation and cloud in education is rather new in comparison to existing educational systems, where universities have been around for nearly thousand years like the Oxford university from 1096 A.D., but have high potential (Siemsen, 2015).

In an work environment where globalisation continues to grow, an international study experience is a good preparation for the future business people (Anbari, 2010).

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## 4. Appendix A1 – Online Post2

One of the topics in information systems (IS) is data management and data protection, also understood as privacy. Weizenbaum's, an advocate for professional and social responsibility in IS/IT science, ELIZA program demonstrated the threat that AI poses to privacy. In combination with the then envisioned speech-detection and spread of email usage, it would be able to enable a state to suppress dissent and to eliminate those who threaten it (O'Regan, 2013).

As systems become more and more complex, merging various information systems into each other, their inner workings become less and less understood by an individual or a small group, it is hard to say for any organisation, that their systems work 100% ethically or legally correct (Weizenbaum, J. 2008).

Weizenbaum encourages his professional peers and everybody working with information systems, to act ethically. Further, computer scientists are urged to check that their work cannot cause any direct or indirect harm, up to the loss of human lives, even intentions were good by asking himself: is this good for mankind? and not only "Will it work?" (Weizenbaum, 1972).

As everybody is more and more exposed to the outcomes of information systems, even to the extent that it would increase inequality and threaten democracy according to O'Neil (2017), reflective use of IS design and use cases is mandatory.

Since 25th of May 2018 a European law of large proportion is live, establishing rules and fines around data management: European Union's General Data Protection Regulation (GDPR), enforcing reflective use of IS without total impairment of innovation (Smouter, K. 2018).

As the IS usually spans several countries, this shows that legal awareness needs to be established as well, even if personal judgement was made. A solution to gather input for such laws, which GDPR is just one of many, would be an integrated law IS as envisioned by Liebwald (2015), holding all the laws and legal requirements for affected users.

Until such a vision is established, the IS scientist should rely on reflective design and review upcoming legal requirements in papers such as JURIX (Legal Knowledge and Information Systems, 2018)

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