Case: webshop

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Agenda

- Hva handler INF3290 om?
- Hvorfor gjør vi som vi gjør i dette kurset?
- Telenor
- Webbutikker som et eksempel på store og komplekse IT-systemer

- Hva handler INF3290 om?

System

Development | Specification driven

Architecture | Monolithic

Governance | Single

Stand-alone
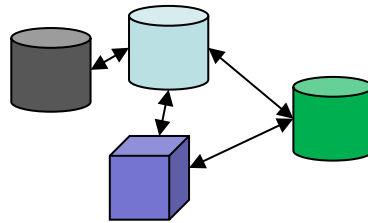
System	**Infrastructure**	**Global Infrastructure**
Development	Specification driven	Evolutionary	Generic
Architecture	Monolithic	Integrated	Adaptive
Governance	Single	Multiple	Global

Stand-alone

Open and interconnected

Multi-level and nested

Hva ser man i næringslivet og i offentlig sektor etter hos en nyutdannet student? (Hvorfor gjør vi som vi gjør i dette kurset?)

- Metodiske ferdigheter
- Evnene til å administrere og koordinere oppgaver
- Formidlingsevne, skriftlig og muntlig
- Analytiske ferdigheter
- Evne til å benytte sin kunnskap på nye områder
- Evne til å arbeide under press
- Formidlingsevne, skriftlig og muntlig
- Evne til å tilegne seg ny kunnskap
- Evne til å samarbeide
- Evne til å tenke selvstendig og kritisk
- Faglig og teoretisk kunnskap

Fasit

Figur 5.8: Ulike kvalifikasjoners viktighet for ansettelse – alle arbeidsgivere, (gjennomsnitt på skala fra 1 til 5)

| Kvalifikasjon	Verdi
Evne til å samarbeide	4,48
Evne til å tilegne seg ny kunnskap	4,45
Evne til å tenke selvstendig og kritisk	4,43
Formidlingsevne, skriftlig og muntlig	4,36
Evne til å benytte sin kunnskap på nye områder	4,27
Evne til å knytte kontakter og bygge relasjoner	4,20
Faglig og teoretisk kunnskap	4,19
Analytiske ferdigheter	4,13
Evne til å arbeide under press	4,10
Metodiske ferdigheter	4,01
Evne til å administrere og koordinere oppgaver	3,95

- [Telenor](#)

Webshops

- Sales of products or services over the Internet
- A sales channel for businesses
  - Businesses can reach their customers online
    - A tool for those working with this channel
  - Customers can shop online from anywhere at anytime

- Example: Elkjøp

Webshops in a Telco

- System
- Information Infrastructure
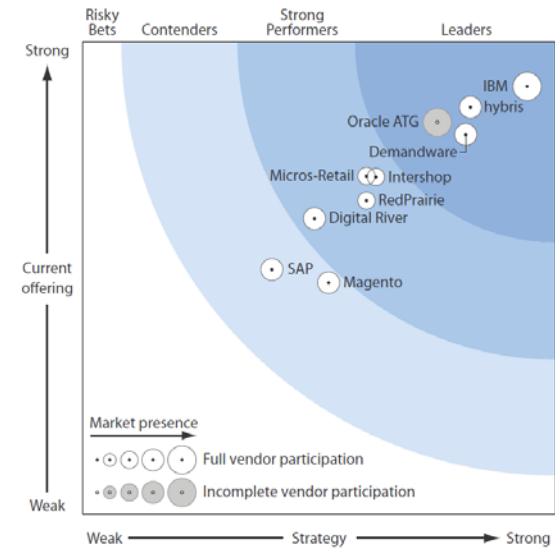- Global Information Infrastructure

- Different examples

Webshops as a System

Stand-alone

Open and interconnected

Multi-level and nested
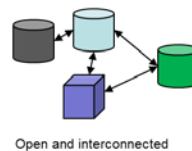
Webshops

- "Anyone" can set up their own webshop
- Simply just a shopping cart
- Software widely available:
  - Mature COTS platforms
  - Open source platforms (e.g. Mangeto)
  - Software as a Service (e.g. PJ Media)
  - D.I.Y



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Example: Telco webshop in CEE

- Launched their webshop very quickly
- In-house developed solution based on Internal resources + consultants

- Key features
  - + Project implemented very fast
  - + Cheap
  - – Hard coded (lack of flexibility)
  - – Total manual back office – no IT integration
  - – Does not scale

Webshop front end

Middleware

Back-office systems

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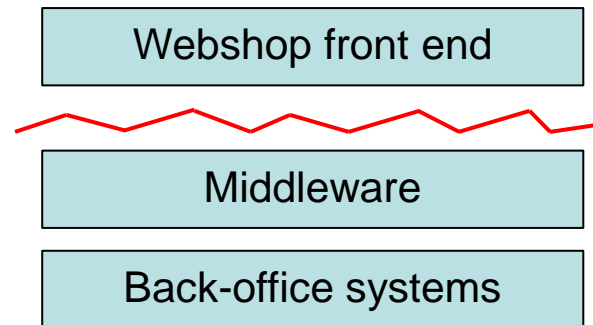
Example: Telco webshop in CEE

Strengths

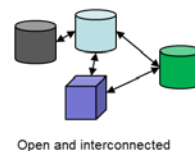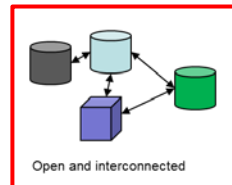- Short time-to-market
- Control
- Low-cost
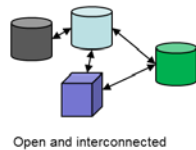
Weaknesses

- Requires manual or double work, e.g. populating product database and fulfilling orders
- No information available about online transactions in other channels – no coherent user experience
- Stand-alone implies no payment solutions, personalization etc.

Stand-alone

Open and interconnected

Multi-level and nested

Webshops as a System - summary

- Quick and dirty
- Customers will compare with other webshops – disappointing
- Marketing organization working with the webshop are frustrated and need to do substantial manual work
- Possibilities and expectations are different today
  - Anyone can develop similar solution
  - Potential competitive advantage in linking webshops and physical shops

Stand-alone

Open and interconnected

Multi-level and nested

Webshops as Infrastructure

Stand-alone

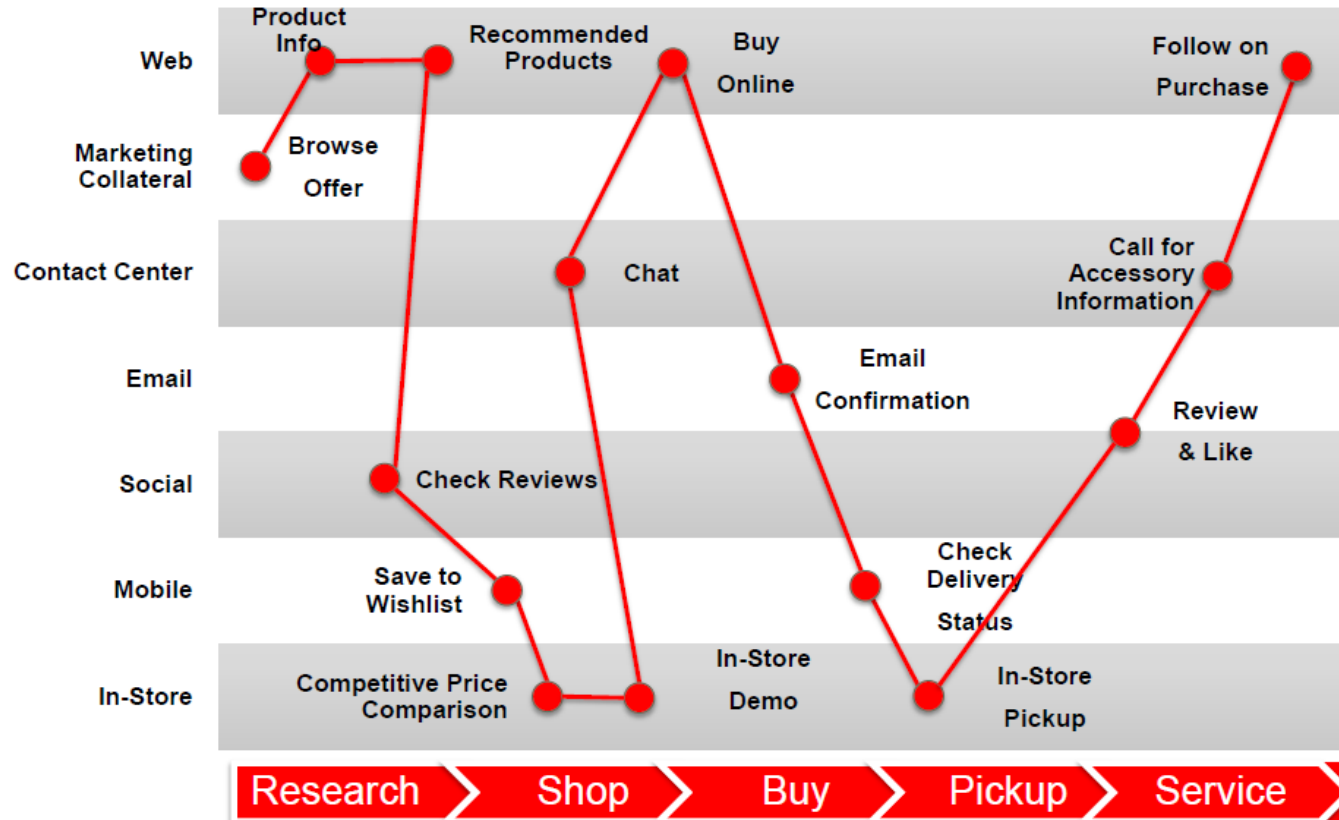Open and interconnected

Multi-level and nested

Webshops and complexity (II perspective)

- What is invisible for some is the work/challenge/problem of others'

- Systems are interconnected and never built from scratch (installed base)

- Interconnection is needed for efficiency: coordination, information sharing and serving user expectations
  - User experience
  - Sales optimization

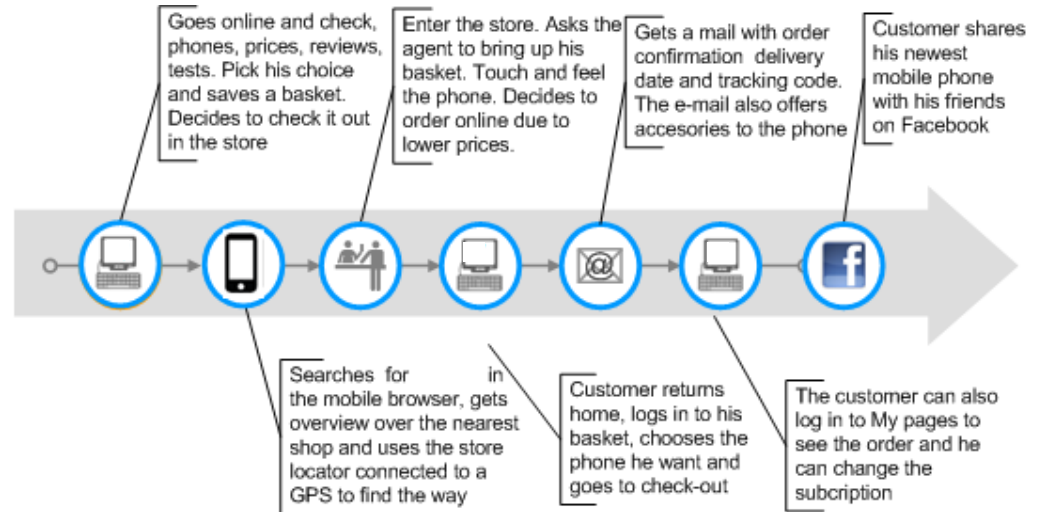# Typical Telco webshop requirements

1. Basics – compared to other industries
2. Personalized offers and individual prices
    –   Identifying users on web, smartphones and pads
    –   Online lookups on the value of the customer, product portfolio and buying behaviour
3. Tightly integrated, for example myPages and the webshop, and with customer database
4. Multi-channel: e.g. buy online, pick-up in store
5. Flexible: fast and reasonable to change functionality, business users must be able to change the user interface them selves

Cross-channel is a key challenge

Buying telecom products and services is a cross channel journey

- Buying a mobile phone

Goes online and check, phones, prices, reviews, tests. Pick his choice and saves a basket. Decides to check it out in the store

Enter the store. Asks the agent to bring up his basket. Touch and feel the phone. Decides to order online due to lower prices.

Gets a mail with order confirmation delivery date and tracking code. The e-mail also offers accesories to the phone

Customer shares his newest mobile phone with his friends on Facebook

Searches for   in the mobile browser, gets overview over the nearest shop and uses the store locator connected to a GPS to find the way

Customer returns home, logs in to his basket, chooses the phone he want and goes to check-out

The customer can also log in to My pages to see the order and he can change the subcription

67% research on the smart phone and then buy in store

23% research on smart phone, visit store to check out product and the return home to purchase online

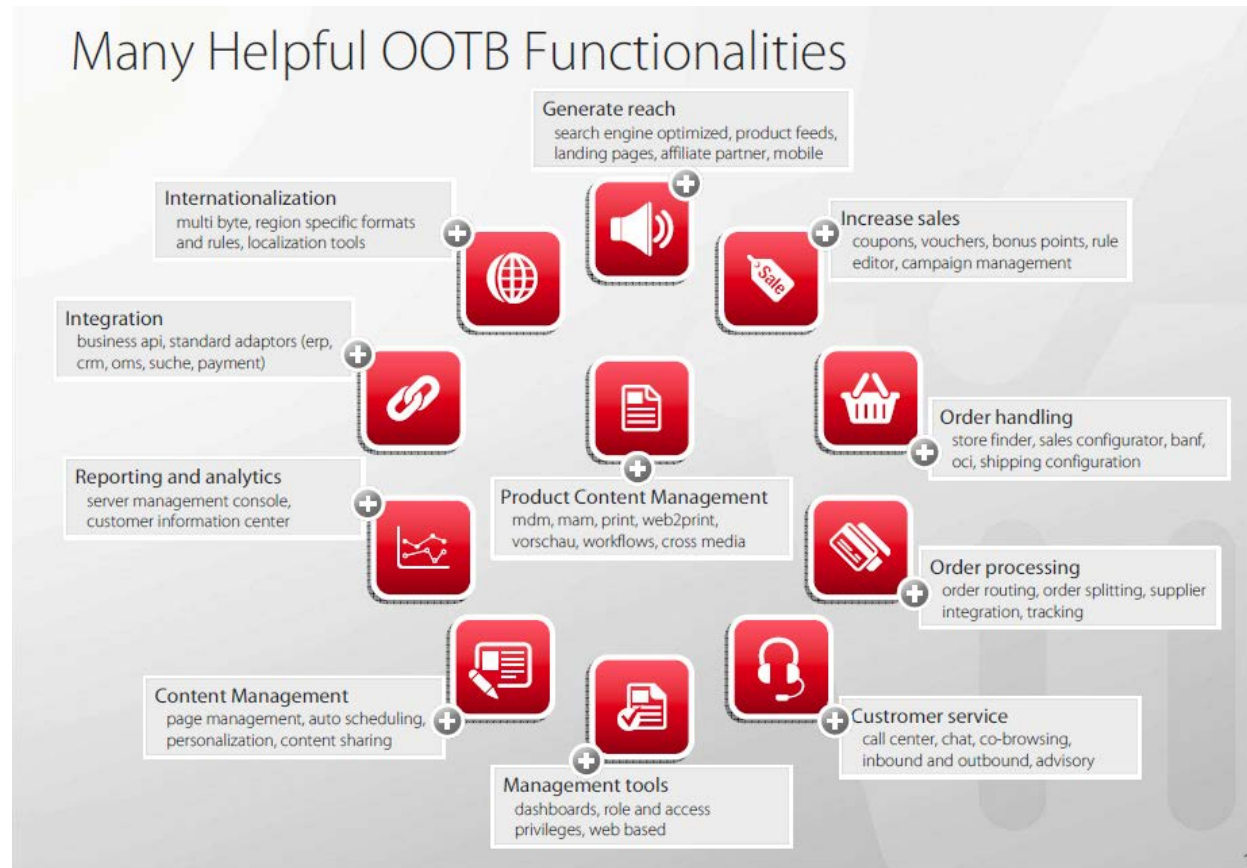54% research online and then buy in store

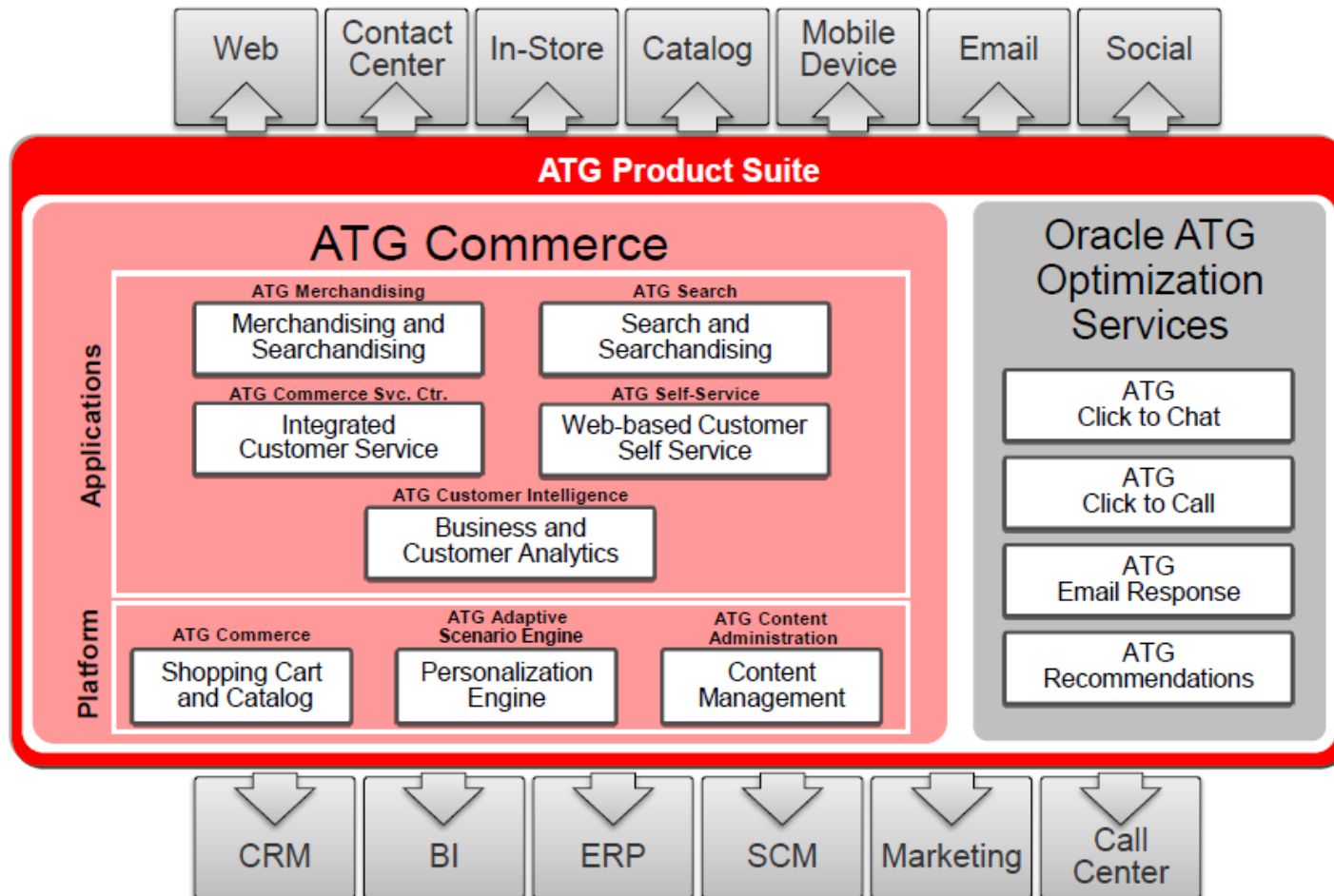5% only, research in store and then buy online

- Google: The Mobile Movement Study OTC Media, April 2011
- Base: Have used Smartphone to help shop or purchase in some way
- Caggemini Study on shopping behaviour in Nordics (2010)

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How these needs can be served

Platform functionality (example)

Platform integration (example)

Example : Telco webshop in Nordics

UiO : Department of Informatics
University of Oslo

1. Webshop
- customer interface
- admin interface
- busines rules

2.Logistics
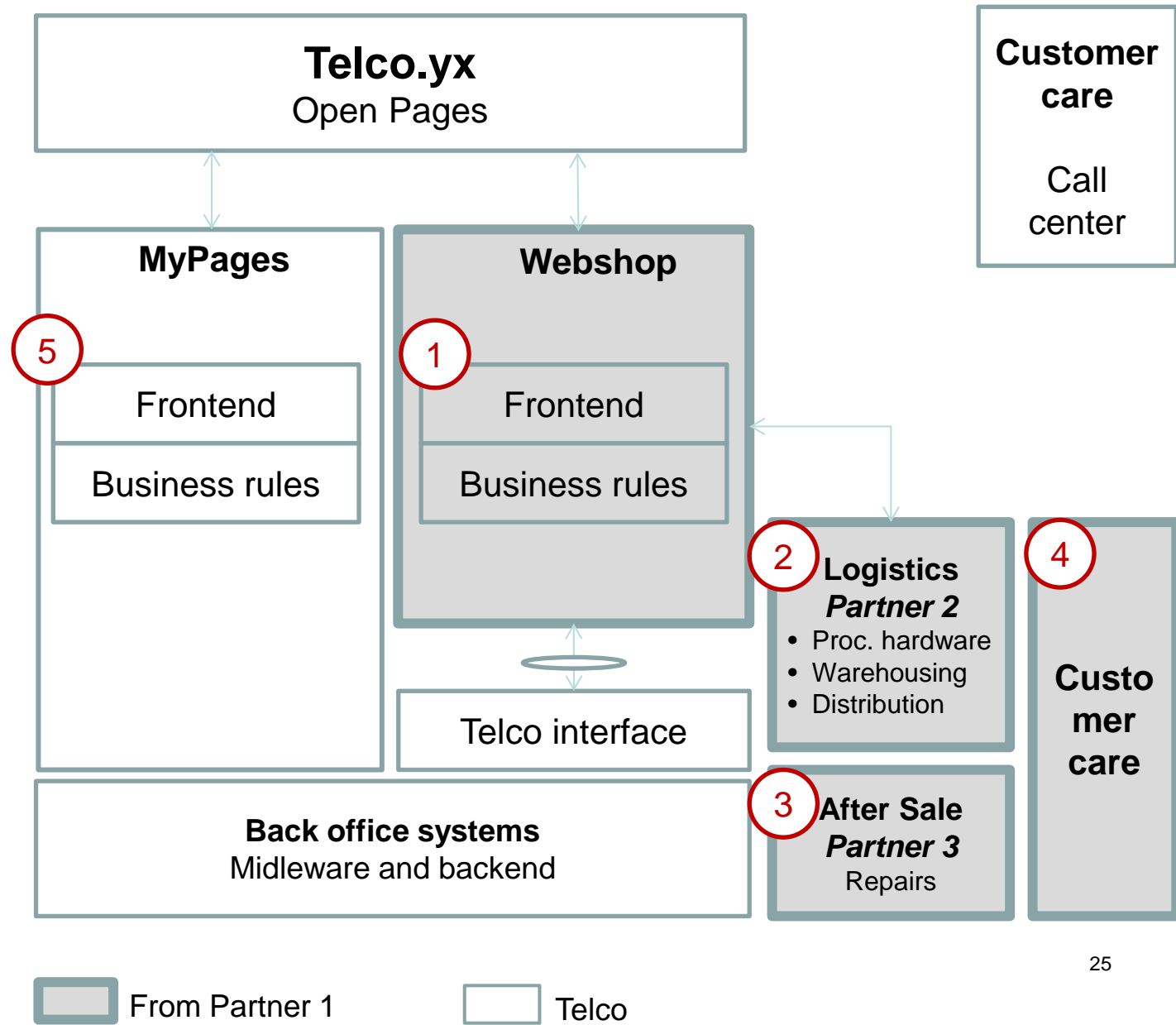- procurement/
warehousing

3. After Sales
- repairs

4. Customer
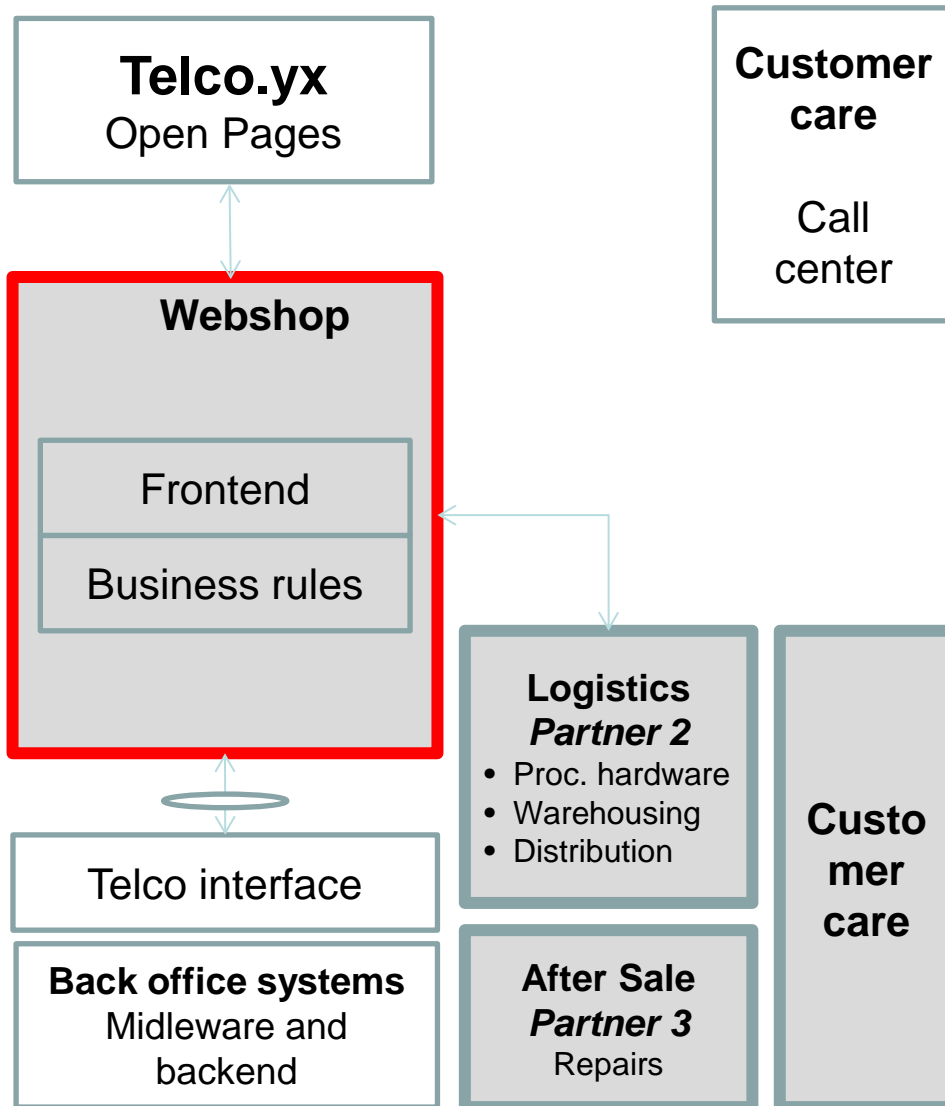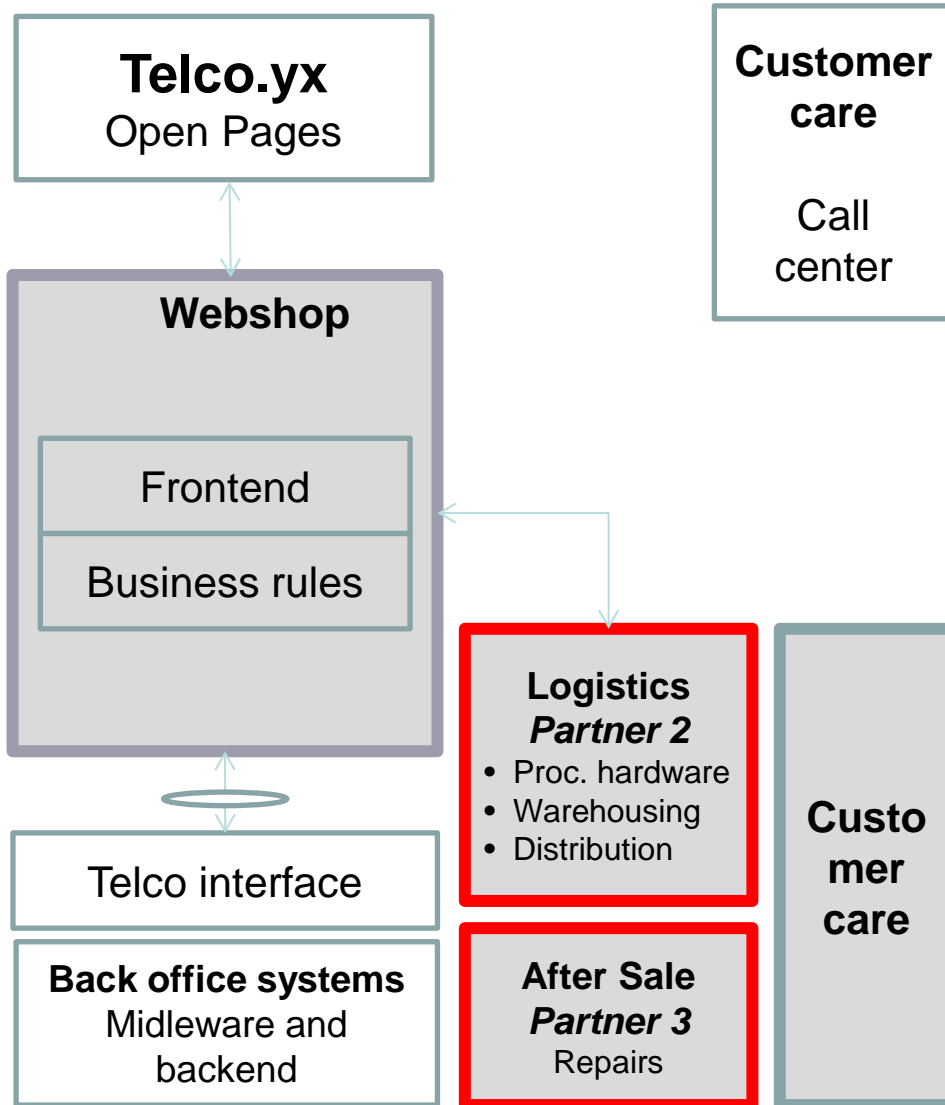care
- handsets

5. MyPages
- login, no connection to
the webshop

Telco.yx
Open Pages

Customer care

Call center

MyPages

⑤

Frontend

Business rules

Webshop

①

Frontend

Business rules

② **Logistics**
Partner 2
- Proc. hardware
- Warehousing
- Distribution

④

Customer care

Telco interface

Back office systems
Midleware and backend

③ **After Sale**
Partner 3
Repairs

From Partner 1   Telco

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Telco.yx
Open Pages

Customer care

Call center

Webshop

Frontend

Business rules

Logistics
Partner 2
- Proc. hardware
- Warehousing
- Distribution

Custo mer care

Telco interface

Back office systems
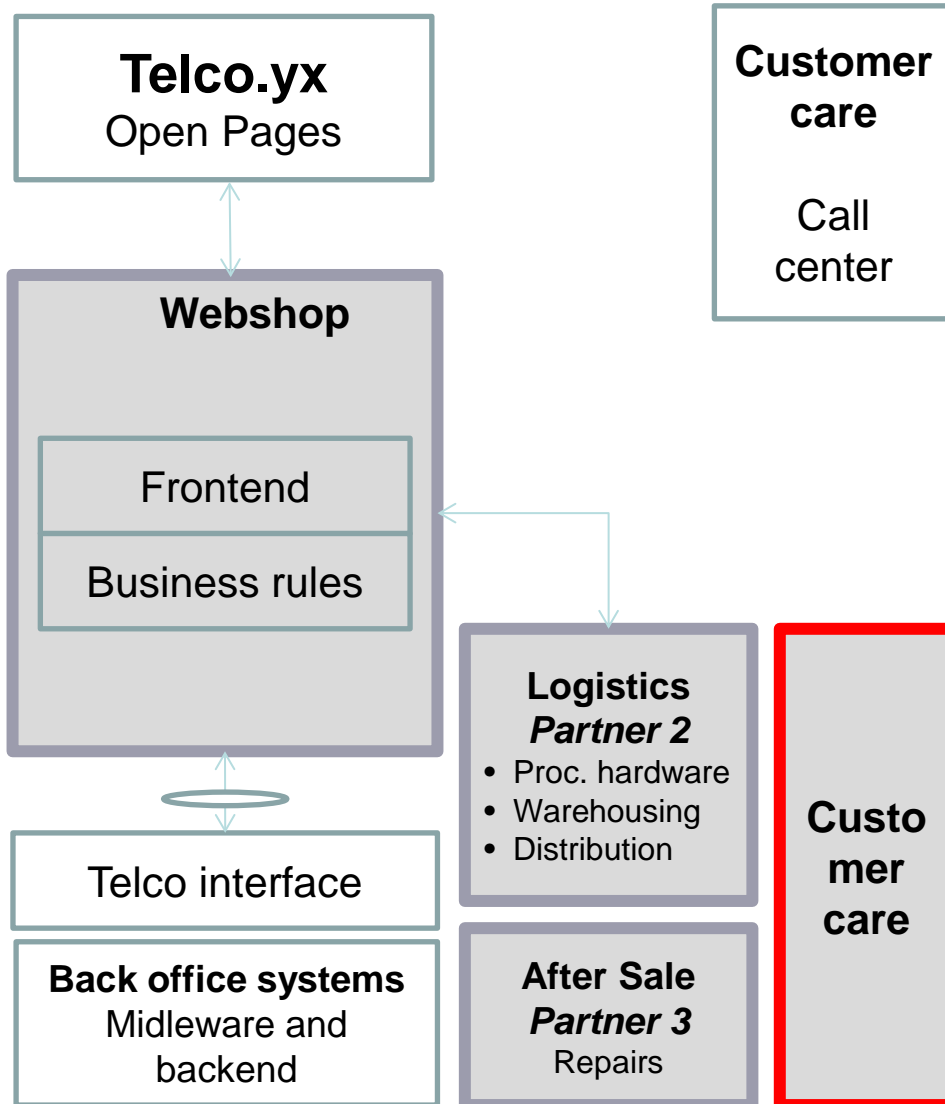Midleware and backend

After Sale
Partner 3
Repairs

1. Lack basic functionality
2. Nothing for free
3. Long time to functionality, frequent delays
4. High cost of development
5. Home-made solution
6. Partner 1 has limited competency, consultants doing the job
7. Lack of transparency

8. Telco do not control the customer journey
9. Telco lack competence on the solution, hampering business development

Telco.yx
Open Pages

Webshop

Frontend

Business rules

Telco interface

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Midleware and
backend

Customer care

Call center

Logistics
Partner 2
- Proc. hardware
- Warehousing
- Distribution

After Sale
Partner 3
Repairs

Customer care

1. Logistics and after sales is working fine
2. Paying too much for this compared to competitors

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Telco.yx
Open Pages

Webshop

Frontend

Business rules

Telco interface

Back office systems
Midleware and
backend

Logistics
Partner 2
- Proc. hardware
- Warehousing
- Distribution

After Sale
Partner 3
Repairs

Custo mer care

Customer care

Call center

1. Customer has to be transferred from Telco to Partner, implying:
   - Bad user experience
   - Telco do not control user experience
   - Cannot measure user experience

Challenge: Stack of different technologies

Challenge: Multiple integration points

Business Support Systems (BSS)

- CRM (Customer Relationship Management)
- Warehouse (ERP) for inventory management and fulfillment
- Recommendation engine for personalized product/plan recommendations
- Product catalogue
- Analytics
- Business Intelligence

External systems

- Number portability database
- Logistic/ Shipping providers for delivery
- Payment providers
- Address validation
- Credit check
- Geo-location

According to vendors, integration accounts for 80% of the costs

Functional architecture (example)
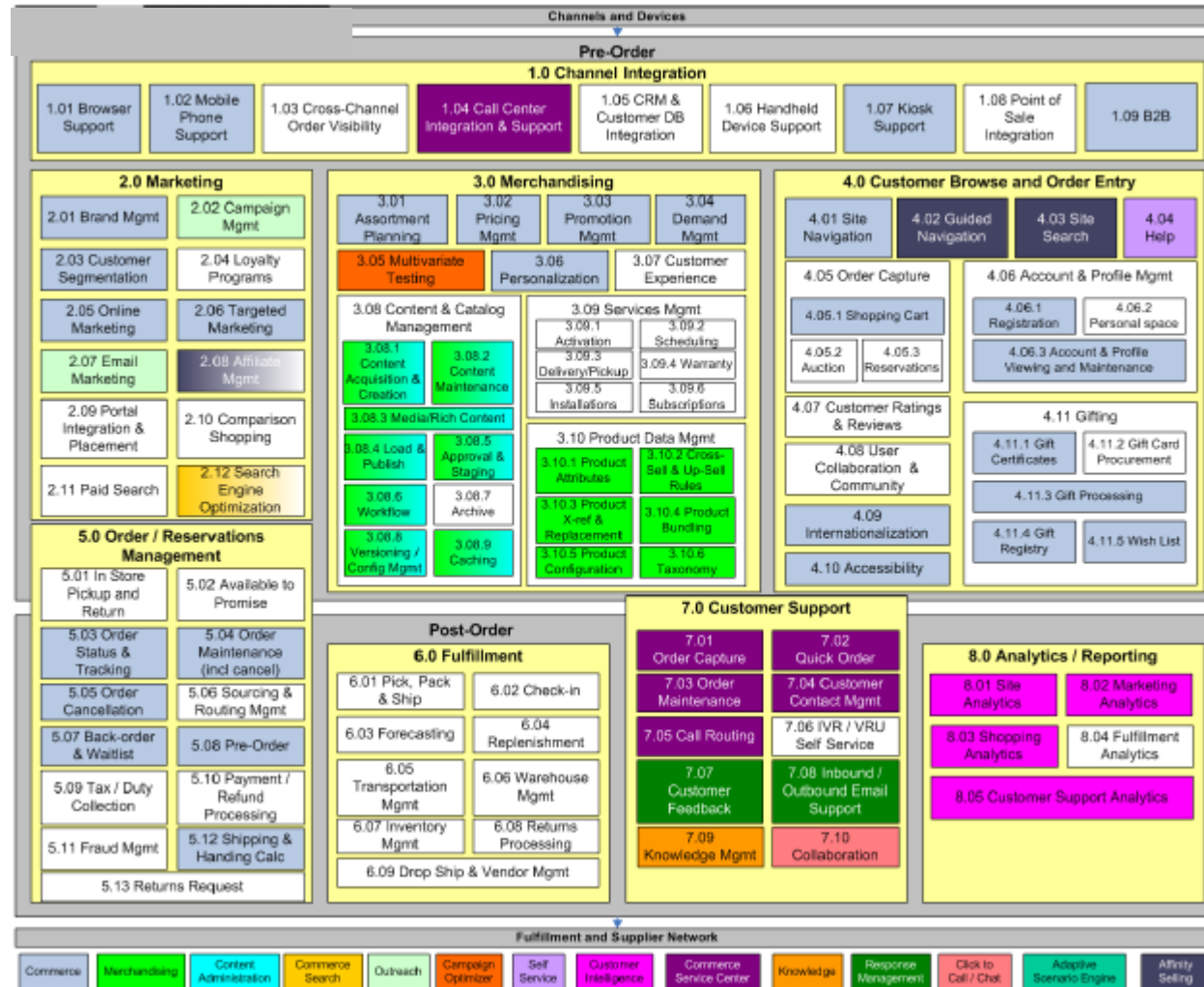

Challenge: thin or fat webshop?

Challenge: What about Customer and Product Data Mastering?

- eCommerce data - relevant only for Online
  - E.g. 3D images and browsing behavior
- Other data
  - Relevant for multiple (all) channels such as eCommerce, call-centers and retail shops
  - Global data must be cached for eCommerce channel to avoid latency
  - What happens if systems with masters are out of operation?

- Product mastering Example:

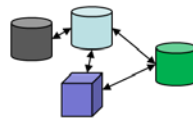| eCommerce Master	Partial eCommerce	Outside eCommerce
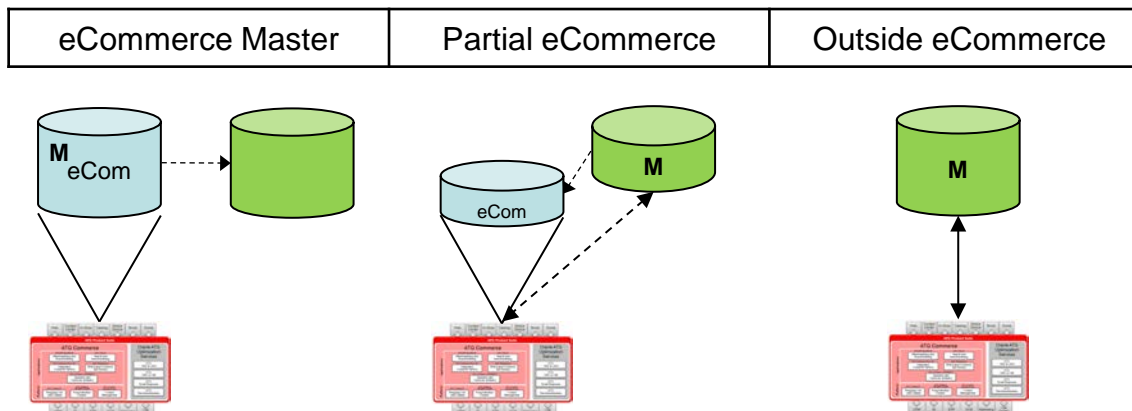
Webshops as Infrastructure - Summary

- Webshops are complex
  - A range of integration point
  - A range of different systems
  - Value networks with partners
  - Architecture is important
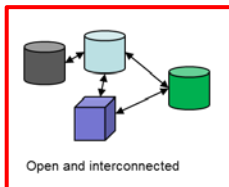
Stand-alone

Open and interconnected

Multi-level and nested

Webshops as Global Infrastructure

Stand-alone

Open and interconnected

Multi-level and nested

# eCommerce status in Telco Group

- 11 different Business Units run autonomous to a large extent

- 11 different webshop platforms
  - To a large extent homegrown
  - Limited functionality for users, lack of cross-channel integration, partially manual and inflexible for admin users

- Integrated (partially) with 11 different BSS stacks

- No standard Enterprise Service Bus (ESB), if an ESB at all

Telco Group Strategy: from local initiatives to industrialization

- Create top-line growth through being preferred by customers (customer centricity)
- Be a highly cost efficient operator (operational efficiency)

- Operationalized through industrialization/transformation
  - Reduction of complexity and **standardization** of products
  - Best practice sharing of processes, technology and **platforms**
  - Cross border standardization efforts in order to increasingly benefit from **economies of scale** and replication of best practices

- eCommerce industrialization requires global initiatives
  - Standardization on platforms
  - Global/regional operating and governance models
 - Coordination with other global initiatives

Challenge 1: Level of standardization (and architecture)

eCom

BSS

vs.

eCom

BSS
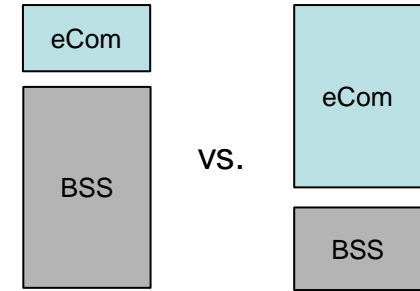
- Mature and immature markets
  - Different transaction volumes
  - Different buying behavior (PC penetration, credit cards etc.)
  - Prepaid mobile for consumer VS. prepaid/postpaid, mobile/fixed/TV for consumer/business
  - Sales or service focus
  - Hunting or farming focus
  - Varying investment horizons

- Mature and immature operations
  - Greenfield or brownfield (in general and eCommerce)
  - Thin or Fat

Challenge 2: Standardization (and customization)

- Standards are the basic for economy of scale
  - Common sourcing of platforms (discounts depending on #licenses)
  - Coordination of integration (80% is integration)

- COTS is never OOTB – customization is needed

- The balance between local and global
  - Business Units will (at least on short term) seek to maximize local flexibility
  - Telco Group will seek to minimize local flexibility and maximizing the core for synergies and sustainability

- Assuring buy-in from the operations (live with COTS)
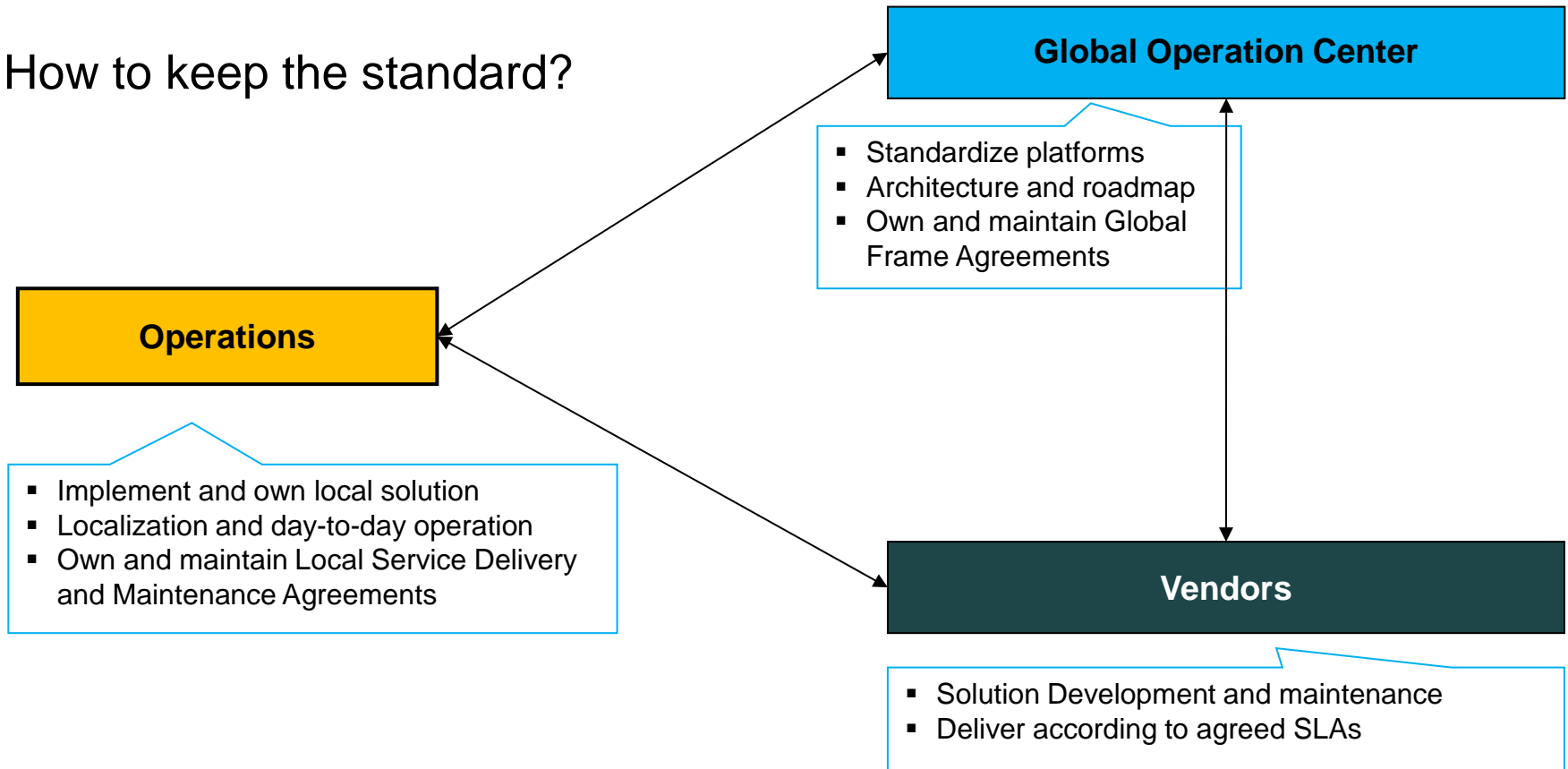

Alt 1 ($)   Alt 2 ($$)   Alt 3 ($$$)
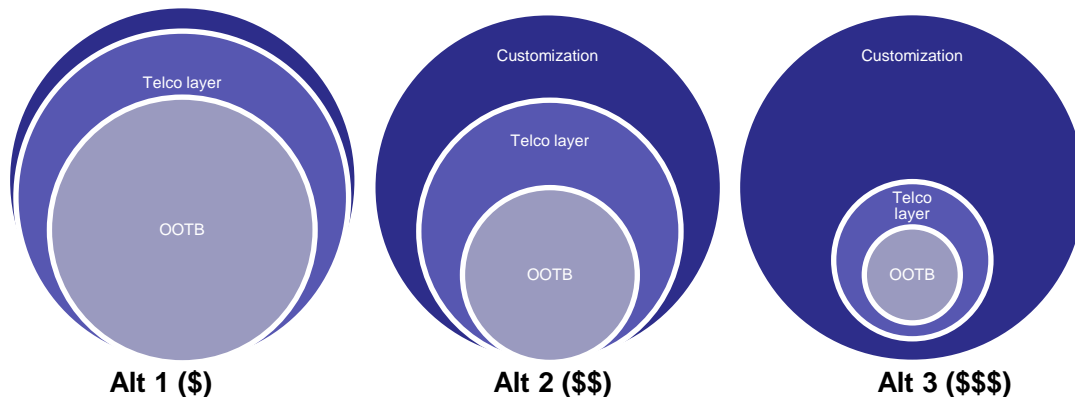
Where to locate functionality?

Local Layer	Customization
Standard Layer	Standard across operations
Core Platform	Out-of-the box

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Challenge 3: Global/regional Operation and Governance models

How to keep the standard?

Global Operation Center

- Standardize platforms
- Architecture and roadmap
- Own and maintain Global Frame Agreements

Operations

- Implement and own local solution
- Localization and day-to-day operation
- Own and maintain Local Service Delivery and Maintenance Agreements

Vendors

- Solution Development and maintenance
- Deliver according to agreed SLAs

# Challenge 4: Coordination with other global initatives

- Key to become an industrialization project
  - To get resources
  - But requires a strong business case, buy-in from business units and coordination with other initiatives

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eCommerce project

Digital Content Shop
- Sales of digital content
- Digital rights management

- Integration
- Architecture

Regional Harmonization
- Harmonizing different initiatives in Asia
- eCommerce initiative, based on implementation

- Competing regional initiative
- Use same vendor
- Timing

Group Operating Models
- Common operation model and governance structure
- Establishment of Shared Service Centers

- eCommerce as pilot
- Timing

Group Architecture
- Common architecture across Group
- See eCommerce as a potential pilot

- eCommerce as pilot
- Timing

Webshops as Global Infrastructure - Summary

- Key challenges
  - How much to standardize?
  - How much to put in global layer?
  - How to govern?
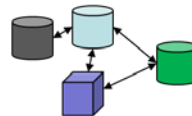 - How to relate to other projects?

Stand-alone

Open and interconnected

Multi-level and nested
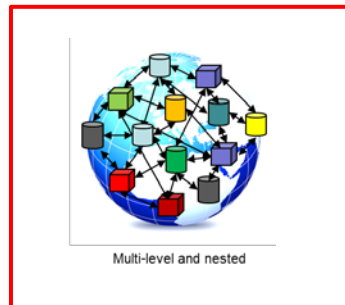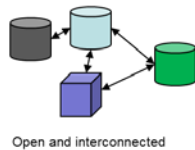
From System to Global Infrastructure: webshops in a Telco Group

	System	Infrastructure	Global Infrastructure
Development	- Implementation based on local need for functionality - Customization where needed	- Adapt to other components, flexibility for change - Integration work (80%)	- COTS with layer easy to localize - Start in one operation, reuse in others
Architecture	- Fat - Monolithic - Internal mastering for product catalogue etc.	- Thin - Limit customization - External mastering - Aligned functionally with other components	- Pragmatic COTS - Limit customization - Adhere to group architecture - Global mastering (?)
Governance	- Local operation - Local governance - Local investment	- Local operation - Locally distributed governance - Local investment	- Operate from shared service center - Deal with local changes globally - Global, regional or local investments

Stand-alone

Open and interconnected

Multi-level and nested