



iSURF – Piacenza Knitwear Business Case

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- **iSURF presentation**
- **General application overview**
- **Benefit analysis**
- **Cost benefit analysis**

- An **I**nteroperability **S**ervice **U**tility for Collaborative Supply Chain Planning across Multiple Domains Supported by **R**FI**D** Devices

- iSURF presentation
- **General application overview in TC SC**
- Benefit analysis
- Cost benefit analysis

Areas for RFID implementation



3.RFID in the Logistics Services

DISTRIBUTION

4.RFID in the Distribution

Consumer

Retail

PRODUCTION

Packaging

Finishing

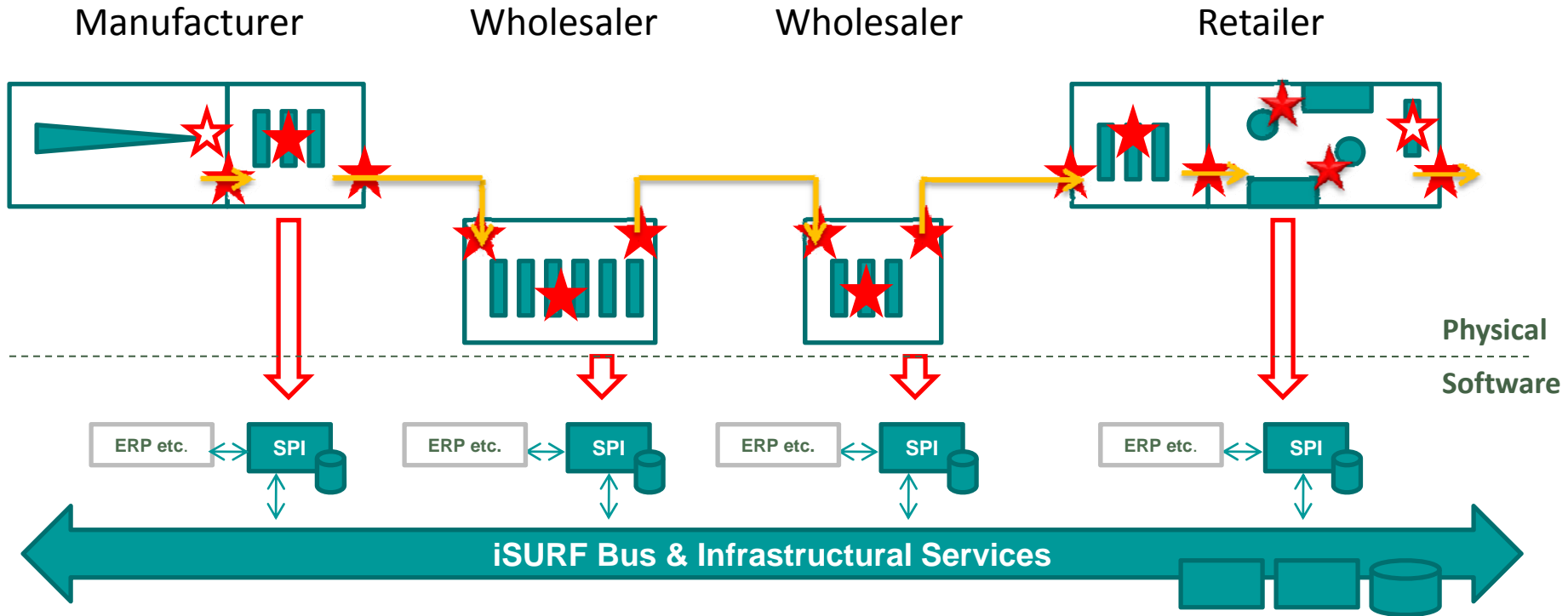
1.RFID in the Production

Knitting

Spinning

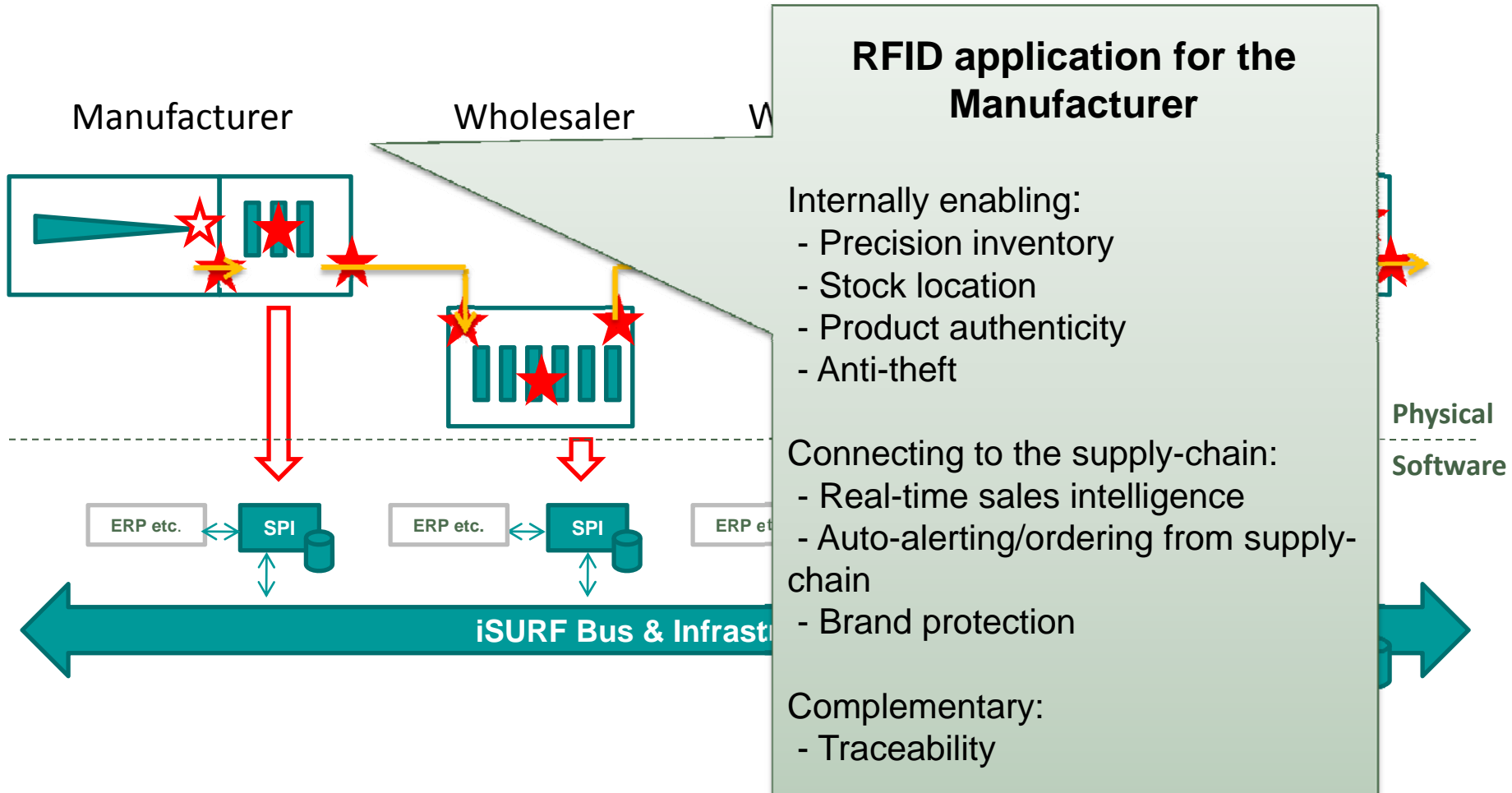
2.RFID in the Supply Chain

RFID in the Supply Chain

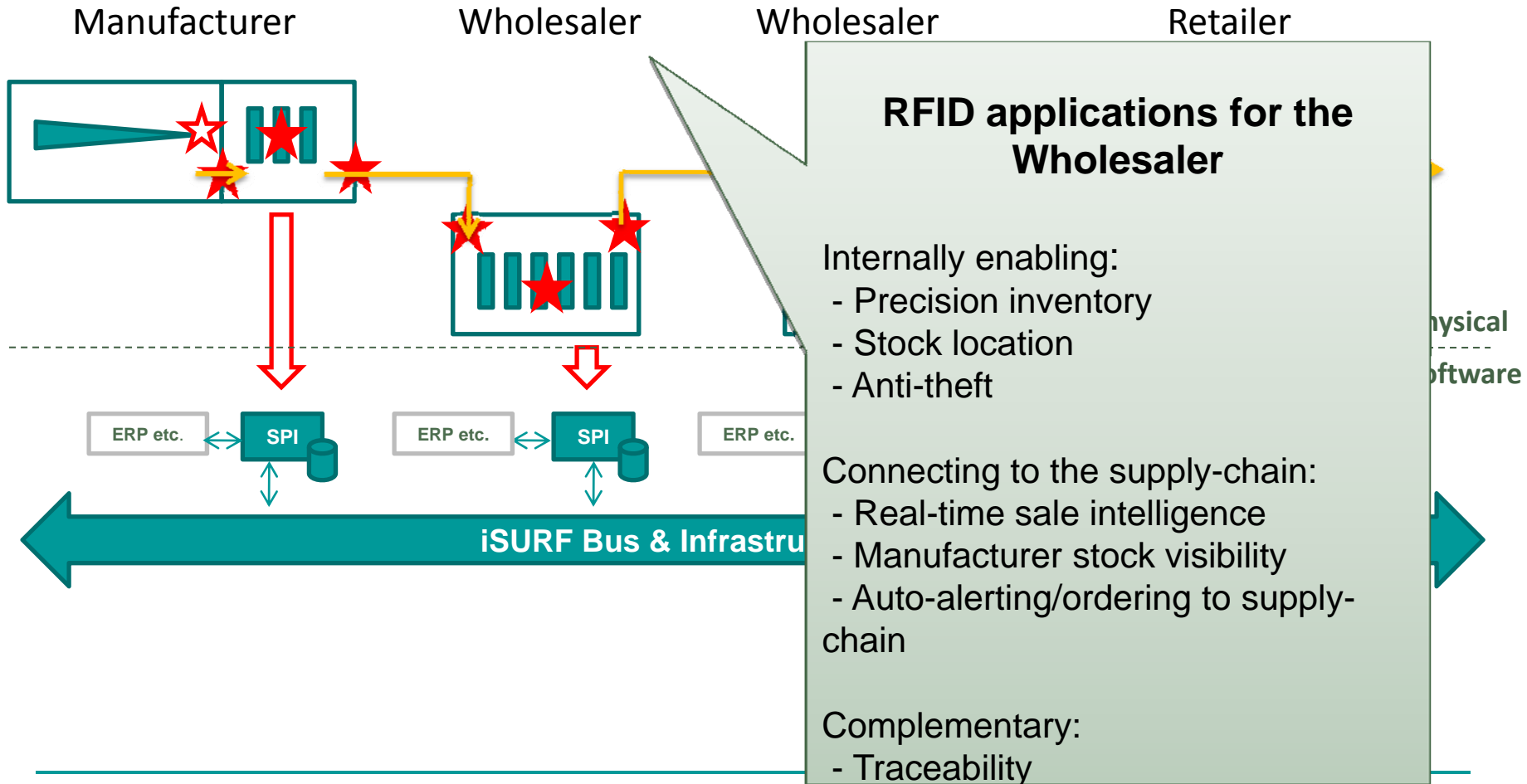


(A simple supply chain is shown for clarity)

RFID in the SC - Applications



RFID in the SC - Applications



RFID in the SC - Applications



RFID applications for the Retailer

Internally enabling:

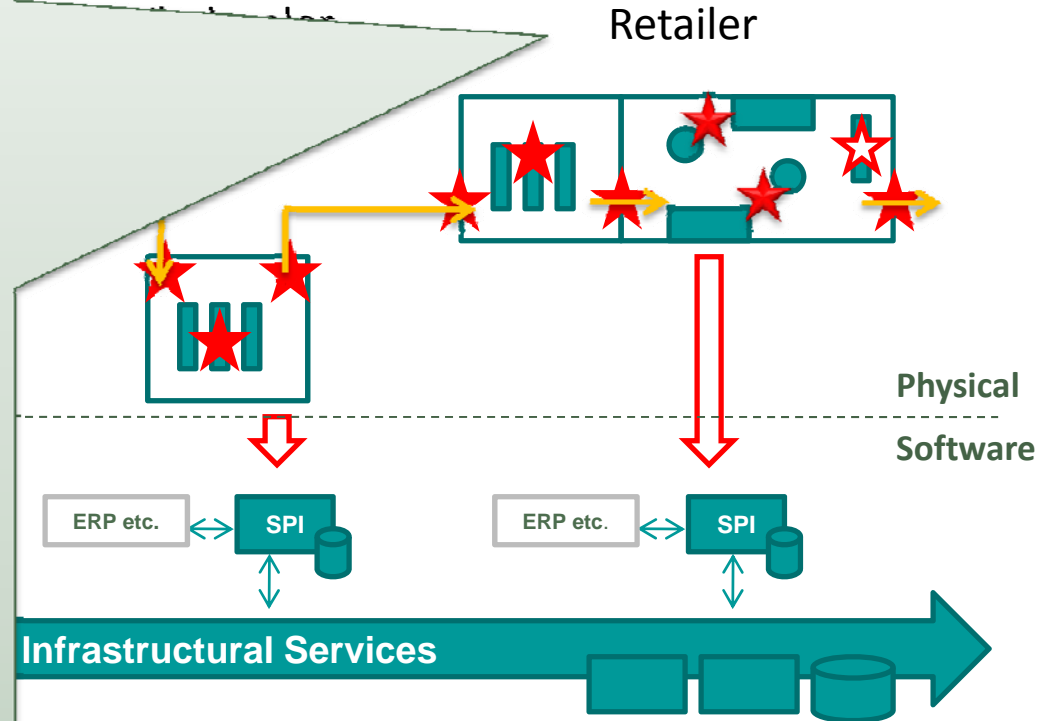
- Precision inventory
- Stock location
- Anti-theft
- Tracing and tracking
- Interactive kiosks
- Integrated POS
- Customer profiling
- Personalised recommendations
- Multi-channel sale integration

Connecting to the supply-chain:

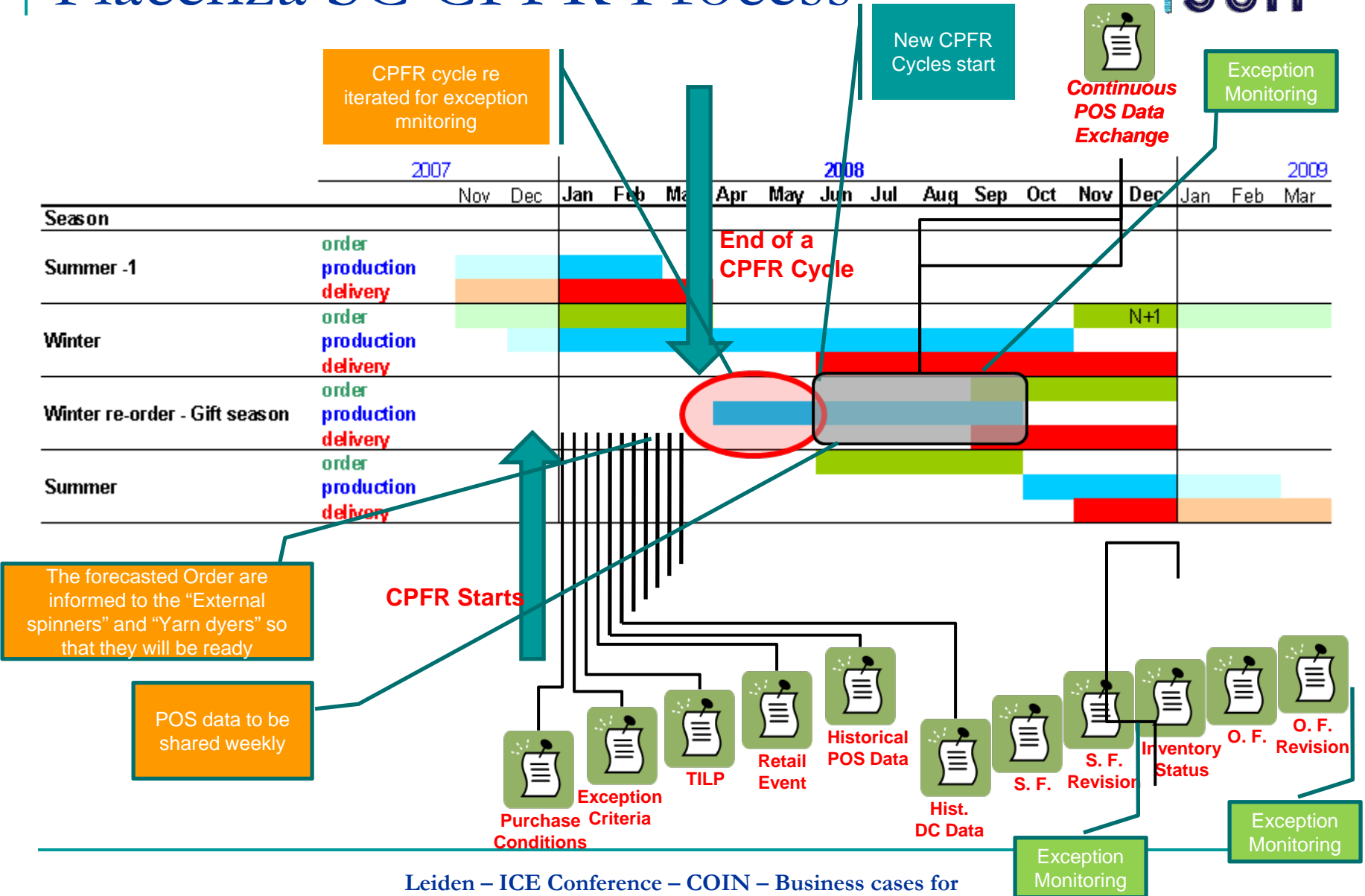
- Manufacturer/wholesaler stock visibility
- Manufacturer production visibility
- Auto-alerting/ordering from Manufacturer/Wholesalers

Complementary:

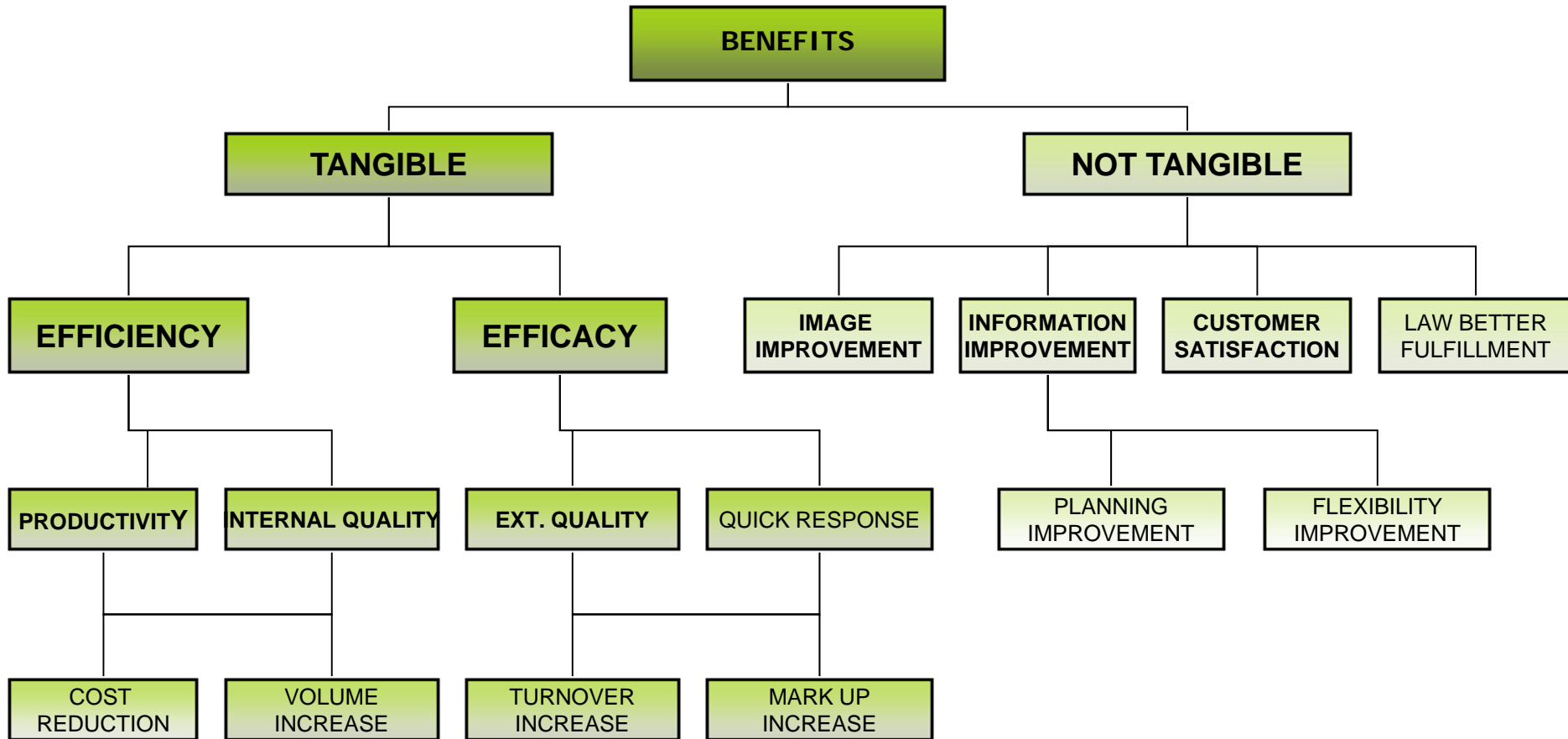
- Traceability



Piacenza SC CPFR Process



- iSURF presentation
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- Cost benefit analysis



Source: Politecnico di Milano – Osservatorio RF-ID

- **RF-ID technology application**, even if focused on one or more activities, has a **wide spectrum of impacts** on company organization.
- Benefit analysis is very often reduced to **cost/benefit** one but this is a **reductive** approach because it tends to **exclude those benefits which are not easily measured.**
- **The importance** of these last ones is **increasing** and directly proportional to the level of the market which is served, **from low price to luxury.**
- **T/C European** companies are mainly focused on medium and **high price and fashion** and consequently a wide range analysis can not be neglected

Clothing Retail Benefit Application Scenario - Information exchange between retail and production

RFID application benefits				
	Average	Average	Average	
Retail	Boutiques	Private label	Mono brand	Department store (Metro)
What is currently the level of information exchange between retail and production on the following issues? (Please indicate: low to absent; medium to low or very high)				
Sell out	Very low to absent	Medium	Medium	High
Stock update	Very low to absent	Medium	Medium	Low
Unsold merchandise	Very low to absent	Medium	Medium	Medium

Source: AEDT Survey for iSURF validation – August- September 2008

Clothing Retail Benefit



RF-ID Application Scenario Evaluation

RFID application benefits				
	Average	Average	Average	
Retail	Boutiques	Private label	Mono brand	Department store (Metro)
Tangible benefit				
Productivity	83%	96%	96%	83%
Int. quality	58%	83%	83%	50%
Ext. quality	71%	83%	85%	63%
Quick response	75%	83%	92%	50%
TOTAL	73%	86%	89%	65%
Not Tangible benefits				
Image	61%	100%	100%	67%
Information	70%	90%	90%	67%
Customer satisfaction	70%	78%	83%	52%
TOTAL	69%	85%	88%	59%
GRAND TOTAL	71%	86%	88%	62%
	3	86 - 100%	86 - 100%	86 - 100%
	2,5	60 - 85%	60 - 85%	60 - 85%
	2	52 - 68 %	52 - 68 %	52 - 68 %
	1,5	35 - 51 %	35 - 51 %	35 - 51 %
	1	18 - 34%	18 - 34%	18 - 34%
	0,5	0 - 17%	0 - 17%	0 - 17%

Source: AEDT Survey for iSURF validation – Piacenza elaboration

Information exchange and interoperability

Information exchange between production and retailers is low when they are independent from each other and it can be subject to great improvements, especially in the case of multi brand retailers.

On the contrary in the case of supply chains, where retail and production work in the same organisation, its potentiality have been already explored and it is effectively working.

Retail Benefits Applications



- ***logistics applications have an extended impact in all retail channels.*** Top results can be found in mono brand retail chains which can exploit also not tangible benefits, indirectly coming from these applications.
- ***service application benefits have their highest impact where non tangible aspects of sale are considered of greatest importance,*** i.e. in mono brand and private label chains and in multi brand boutiques. In the case of department stores and hyper and super markets, which are not expected to provide a personalised service and which are characterized by a very high number of suppliers, the deep exploitation of these kind of benefits is harder.
- ***security benefits are extended to all retail channels but the global benefit is higher in the case of specialised chains*** because those applications which regards high level marketing politics, like parallel market control, product tracing and tracking, can be exploited only when retailer and producer are concentrated in one single organisation and player is global.

Impact and exploitation

- ***It must be considered that RF-ID technology application could have a direct impact improving the quality and range of available information in all retail channels.*** In specialised chains the level of information exchange is usually already high and these information would be used by the present systems. In the case of other channels, and especially multi brand independent retailers, it would be the occasion to make available that information which today is not, and to start or to improve the exchange information process with a strong benefit for the whole value chain.
- ***In general, specialised chains (for first mono brand ones) can exploit RF-ID technology in all its applications,*** with tangible and not tangible benefits. In this case RF-ID technology can reach its highest level of impact. As regards department stores and hyper and super markets, the focus on tangible benefit and cost limits the impact of RF-ID technology.

Conclusions

1. **The benefits of RF-ID technology are extensive**, especially in logistics and security, and can justify the application of it to clothing production even in the more conservative scenario of limited Tag survival in production. Benefits for strictly productive applications are strongly limited by Tag survival performances.
2. Like for **retail** also for **production** the adoption of RF-ID technology can have an indirect **positive impact** from the **improvement of available information through the value chain**, even in the more conservative scenario regarding only logistics and security applications. It can be the **occasion to start deep information exchange between commissioning industries and sub suppliers**.
3. When **production is** partially or totally deemed to **external** subjects benefits can be lower, especially when sub suppliers customers do not extensively adopt RF-ID technology. In this last case the its **application** would be anyway **extended to these subjects** but it could require a contribution of commissioning company, as happened in the past for bar codes.
4. If both **producers and retailers** would start adopting RF-ID technology, **benefits would be boosted in a win-win scenario**

- **Privacy issues:** consumer refusal to accept living Tags on clothing do not allow some promising security RF-ID application – future research is required: a solution is strongly expected by industries
- **Tag survival in T/C production:** actually it is a strong limitation to RF-ID technology extensive application – research is still ongoing

General overview



- iSURF presentation
- General application overview
- Benefit analysis
- **Cost benefit analysis**

- 1. Costs are always measurable while benefits can be tangible and not tangible**
- 2. Costs are mainly fixed (infrastructure), supporting different applications, while benefits are variable and directly linked to each application.**

Cost-Benefits Analysis - Conclusions



- Both in retail and production tangible **benefits** of RF-ID technology **can justify its application**, even if limited to tangible and measurable results.
- **An evaluation of intangible benefit is hard to translate into a measurable forecast but in some cases they are prevalent**, especially where service and shopping experience is an essential part of competitive strategy, typical of European companies.
- Because of the above mentioned reasons the experimentation of RF-ID technology in the **iSURF Pilot shall cover both retail and production applications**.
- On the basis of above mentioned analysis the selected scenarios for iSURF Pilot will **cover logistics, service and security areas**, and will be focused on stock availability, sell-out inventory, production tracing, security and anti theft applications

Thank you!