

End to End Supply Chain Management

Congres e-commerce logistiek

Arnhem, 15-01-2019

Openluchtmuseum, Kasteelboerderij

Guus Hoeben & Frank Nieuwenhuis



- Introduction to Phact Guus
- Introduction to Ricoh Frank
- Ricoh End to End Supply Chain Frank
- Case 1: Satellite optimisation in France Frank
- Case 2: Strategic stock at Customer site in Russia Guus



bright minds creating awesome stuff



- ▶ One stop shop voor software en hardware met een dertigtal energieke en creatieve ontwikkelaars.
- ▶ Opgericht op 1 November 2015, spin-off van VSN Systemen.
- ▶ Sinds 1991 ontwikkelen wij telecomhardware en -software.
- ▶ Bewezen specialist in IoT en predictive maintenance

Wat doet Phact?

Software Ontwikkeling

ERP, Planning, Portalen
App-ontwikkeling
OutSystems (RAD)



Internet of Things

IoT software
IoT Hardware
Big-Data analytics



Wat doet Phact?

Software Ontwikkeling

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OutSystems (RAD)



Integratie

Consultancy
Implementatie
InterSystems (ESB)



Internet of Things

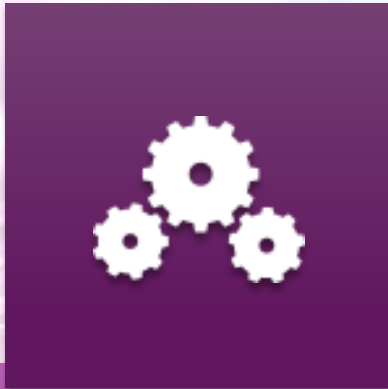
IoT software
IoT Hardware
Big-Data analytics



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Internet of Things

IoT software
IoT Hardware
Big-Data analytics



Support en Beheer



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Think BIG
Start Small
But Do Start



Bright **minds**
Brilliant software
Innovative **hardware**

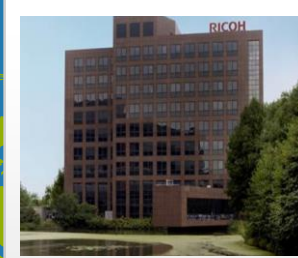
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Who is Ricoh? – Regional Headquarters



Ricoh Americas Corporation
Americas Headquarters
Pennsylvania, USA



Ricoh Europe BV
European Headquarters
Amstelveen, Netherlands



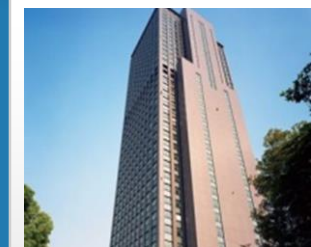
Ricoh Company, Ltd.
Global Corporate
Headquarters
Tokyo, Japan



Ricoh Europe PLC
European Headquarters
London, UK



Ricoh Asia Pacific Pte Ltd
Asia Pacific & China
Headquarters
Singapore



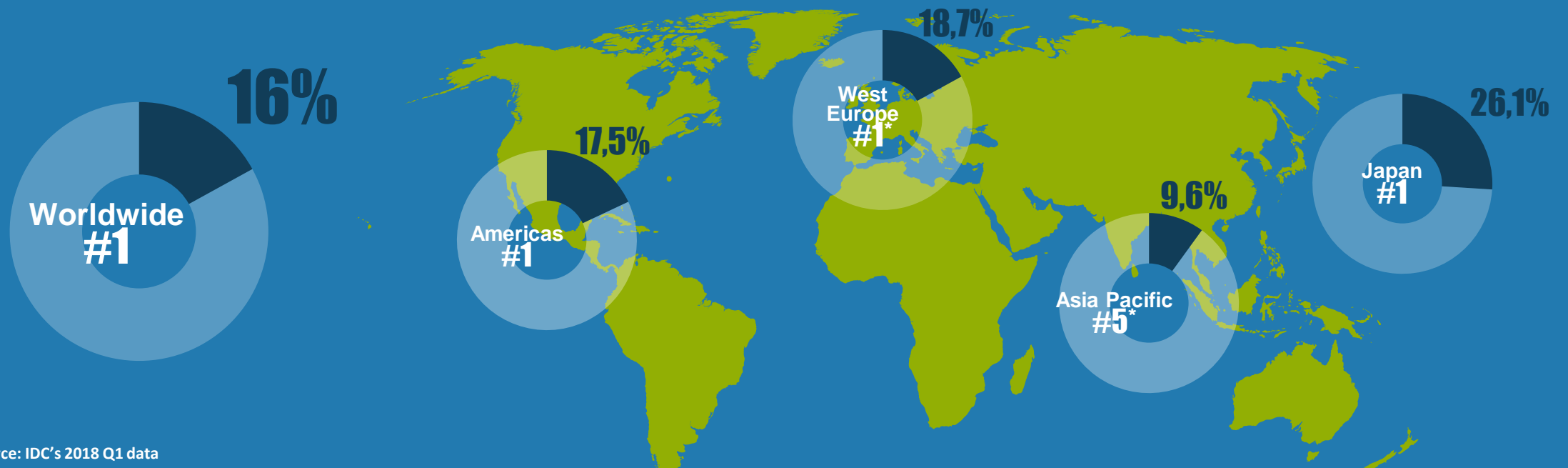
Ricoh Japan Corporation
Japan Headquarters
Tokyo, Japan

**Group Regional
Headquarters
(Sales)**



Ricoh's Global Market Share for FY17

Ricoh has the **#1 SHARE** worldwide



Source: IDC's 2018 Q1 data
Product - Laser
Format - A3 + A4
Product Category - MFP + SFDC
Speed Range - exclude:91+ ppm
Price Band - 500+
Quarter: CY17Q2-CY18Q1




Ricoh is the **Global Market Leader**
Our value is proved by our market share



Ricoh Europe PLC

Headquarters in
**London and
Amstelveen**

25 operating
companies across
EMEA (sales
subsidiaries)

-  Regional headquarters
-  Operating companies
-  Production & research & development

Revenues to 31
March 2018:
JPY 477.5 billion
(EUR 4 Mld)

SOUTH
AFRICA



MIDDLE EAST
DUBAI



Ricoh Europe BV
European Headquarters
Amstelveen, Netherlands



Ricoh Europe PLC
European Headquarters
London, UK





Hardware and Software



Imaging & IT Solutions

Digital copiers, Multifunctional Printers

Laser printers,

Digital duplicators

Network System Solutions

Document workflow solutions

Document security solutions

Cloud data solutions

Mobile printing solutions

Interactive whiteboards

Industrial Products

3D printing

Thermal media

Optical equipment

Inkjet Head

Semiconductors

electronic component and
measuring equipment

Other

Digital cameras

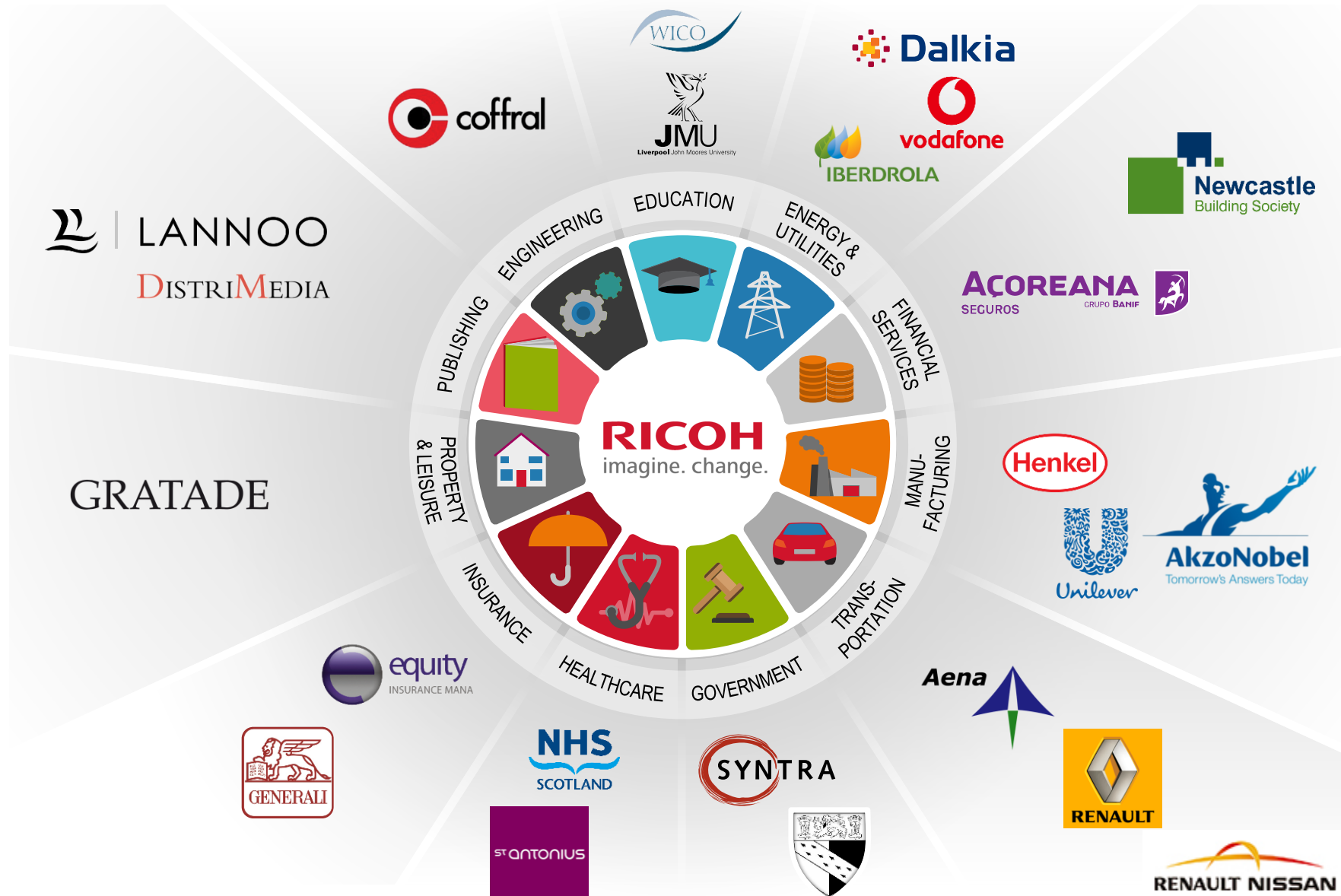
Mobile Projectors

Mobile video conferencing
products

LED lighting



Business Verticals Clients





Contact us

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linkedin.com/company/ricoh-europe



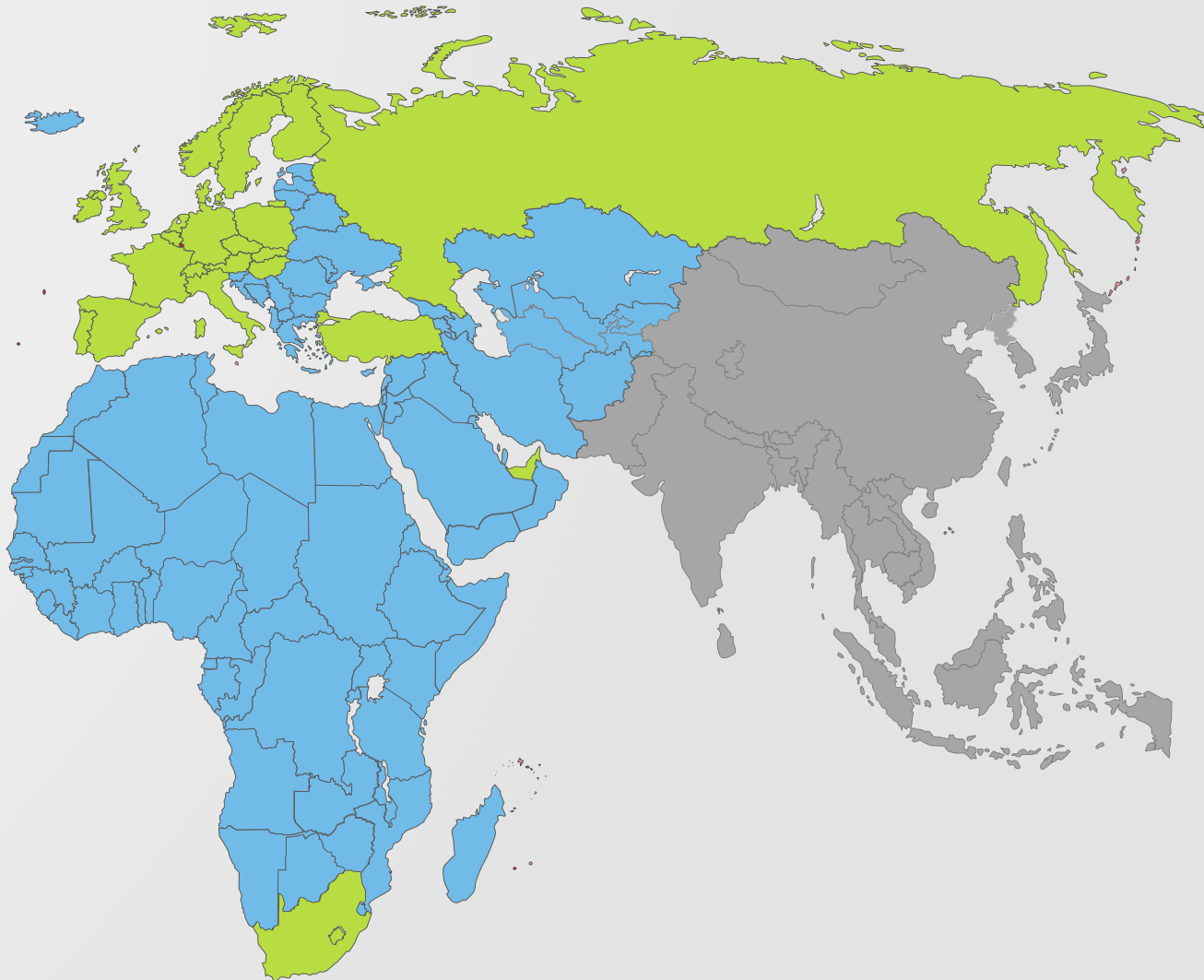
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EMEA Supply Chain Community

- 25 Operating Companies
- RESCM
- RIF & RPL
- Ricoh Europe HQ

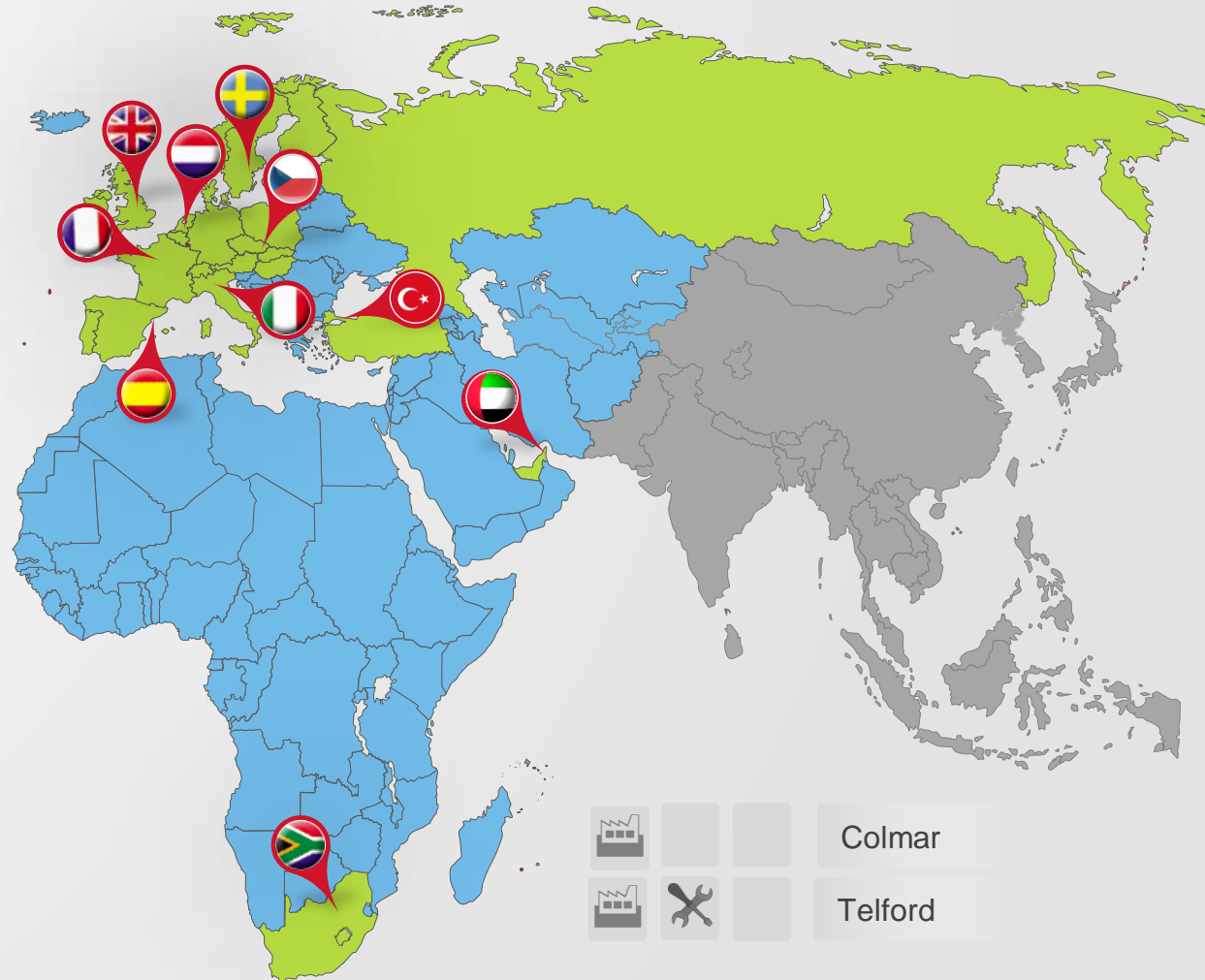
- Ricoh Austria
- Ricoh Belgium
- Ricoh Czech Rep.
- Ricoh Denmark
- Ricoh Deutschland
- Ricoh Middle East
- Ricoh Espana
- Ricoh Finland
- Ricoh France
- Rex Rotary France
- Ricoh Hungary
- Ricoh International
- Ricoh Italia
- Ricoh Luxembourg
- Ricoh Nederland
- Ricoh Norge
- Ricoh Polska
- Ricoh Portugal
- Ricoh Russia
- Ricoh Schweiz
- Ricoh Slovakia
- Ricoh South Africa
- Ricoh Sverige
- Ricoh Turkey
- Ricoh UK





EMEA Supply Chain Community

- Bergen op Zoom
- Milan
- Barcelona
- Stockholm
- Johannesburg
- Brno
- Istanbul
- Dubai
- Paris
- London
- Daventry



- Inventory FG
- Inventory SP
- Customer configuration
- Production



Process Oriented Organisation

We focus on our Core Processes



Several activities are carried out by 3rd parties

Order Fulfillment (new in box)
Reverse Logistics (used goods)
Processes cover the entire RFG supply chain
Factories, Marketing and Customers are involved
Process managers take end-to-end responsibility

Majority of support functions outsourced within Ricoh Family Group

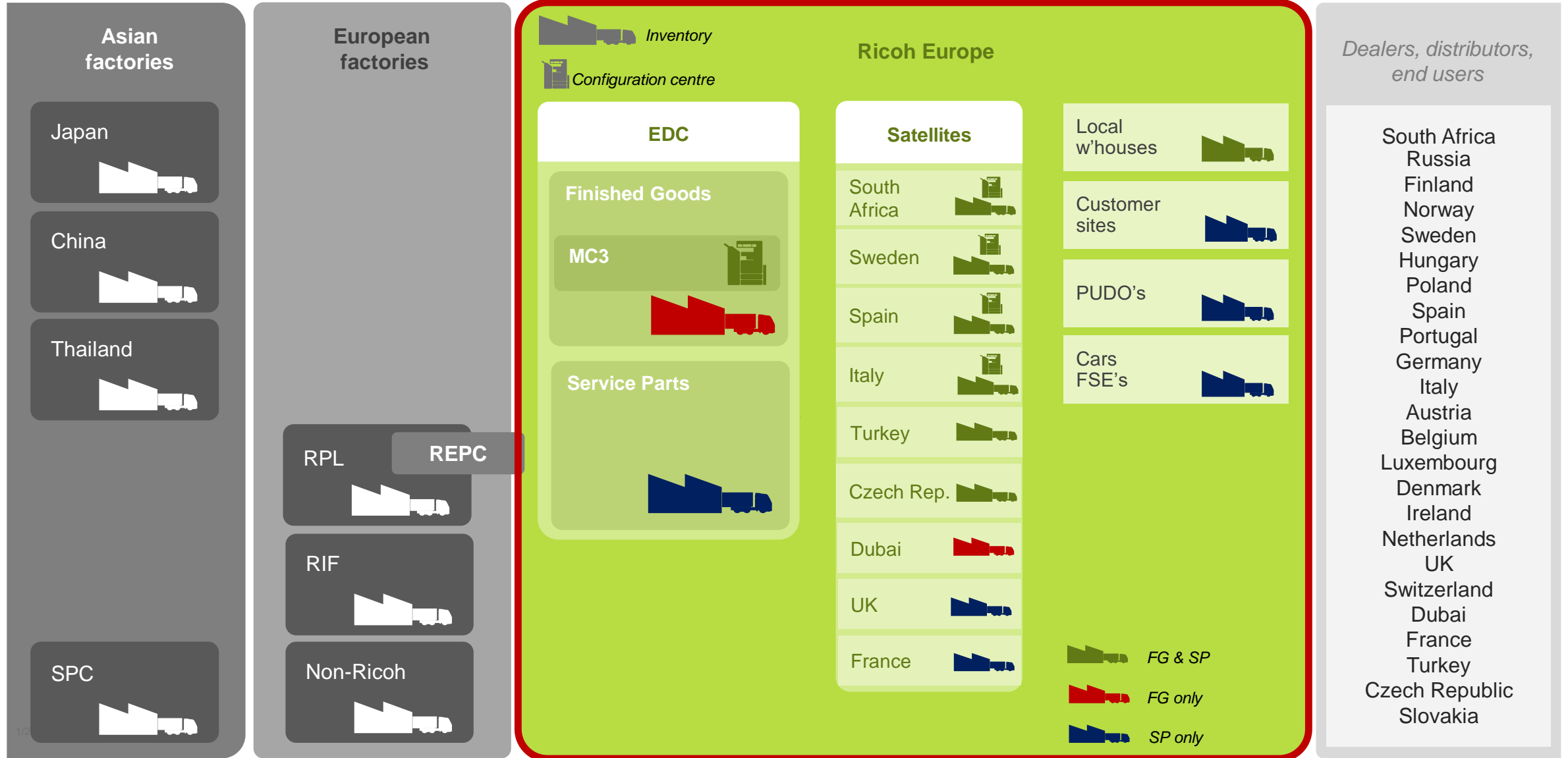
Human Resources,
Finance, IT, Customs,
Legal Counseling

DHL: Configuring and warehousing in EDC
CEVA: Warehousing satellites
UPS: Main parcel carrier
Many other companies provide transport services





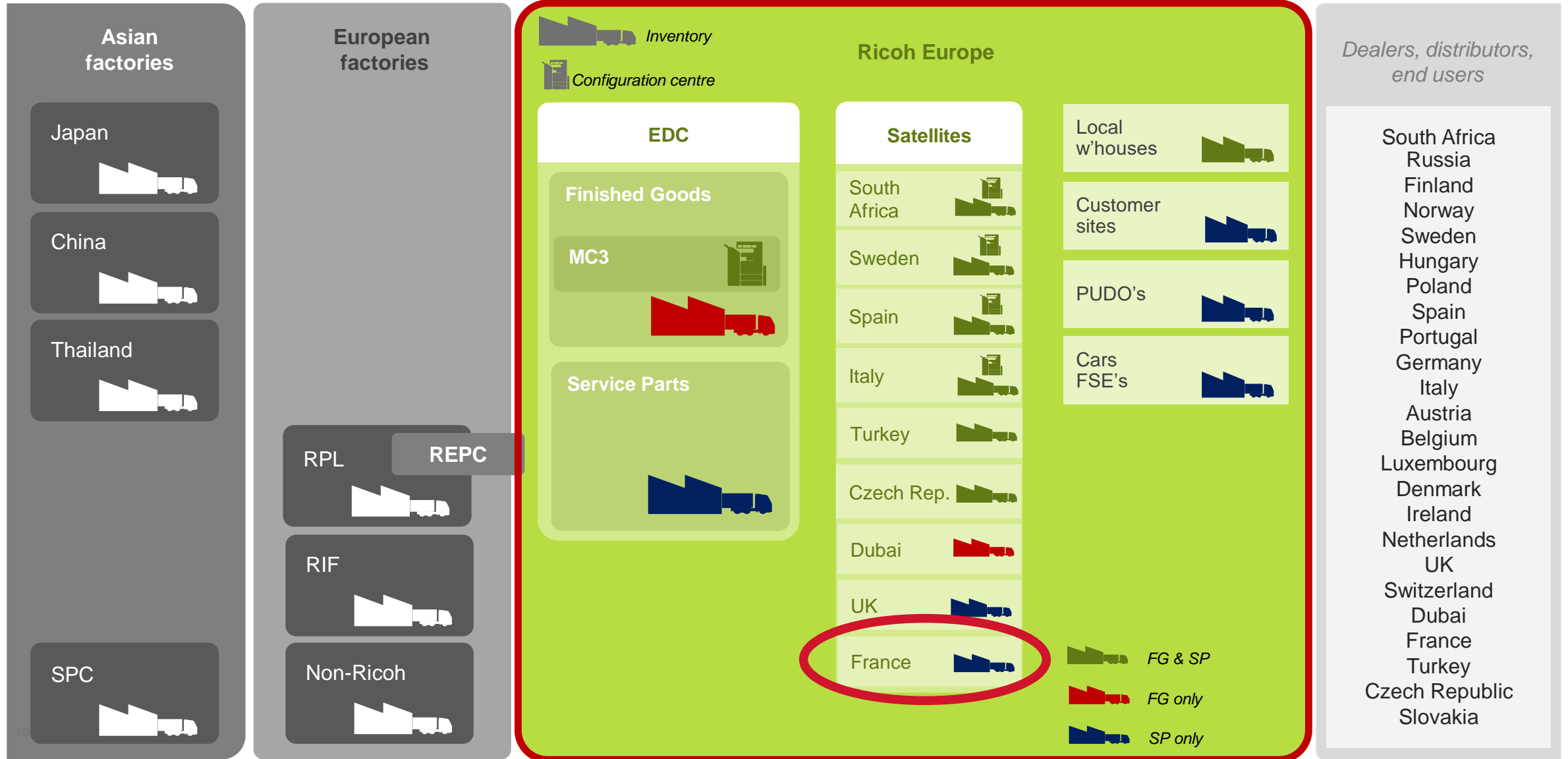
Ricoh Supply Chain Landscape



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Ricoh Supply Chain landscape



- **Problem statement**

- Ricoh recently integrated the ESPC operations into their EDC in Bergen op Zoom. Because of this there is now a possibility that the Parcel HUB in Paris can be reached from The Netherlands in time, as the distance and travel time have been reduced, meaning that the FSPC operation has likely become obsolete and therefore an unnecessary cost item.

- **Assignment**

- Conduct investigation, create cost overviews, find possible improvements that keep current customer service level.

- **Goal**

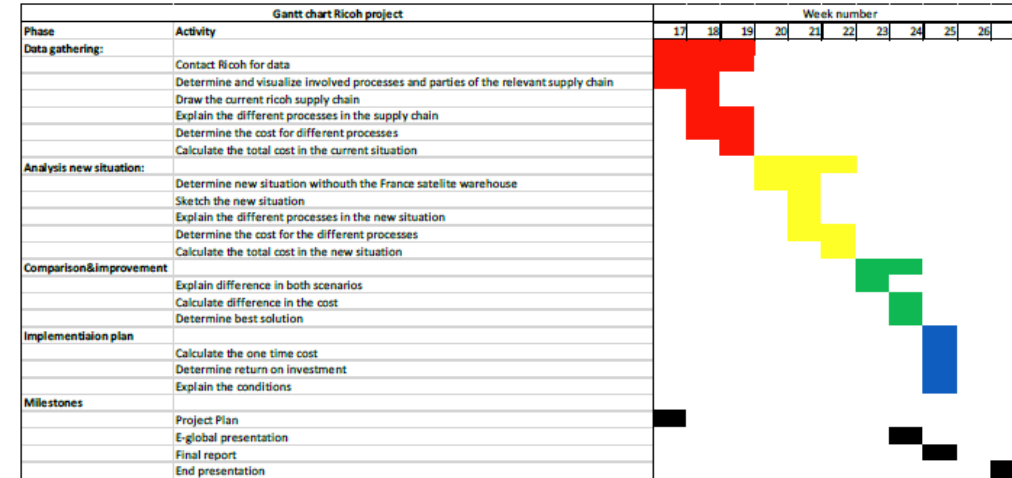
- The goal of this project is to provide Ricoh with a recommendation to either keep or close FSPC and supply France from ESPC directly, while keeping the current customer service level of next-day delivery.

- **Scope**

- ESPC → FSPC and HUB transport. Possible improvements will not have to take into account capacity of ESPC.

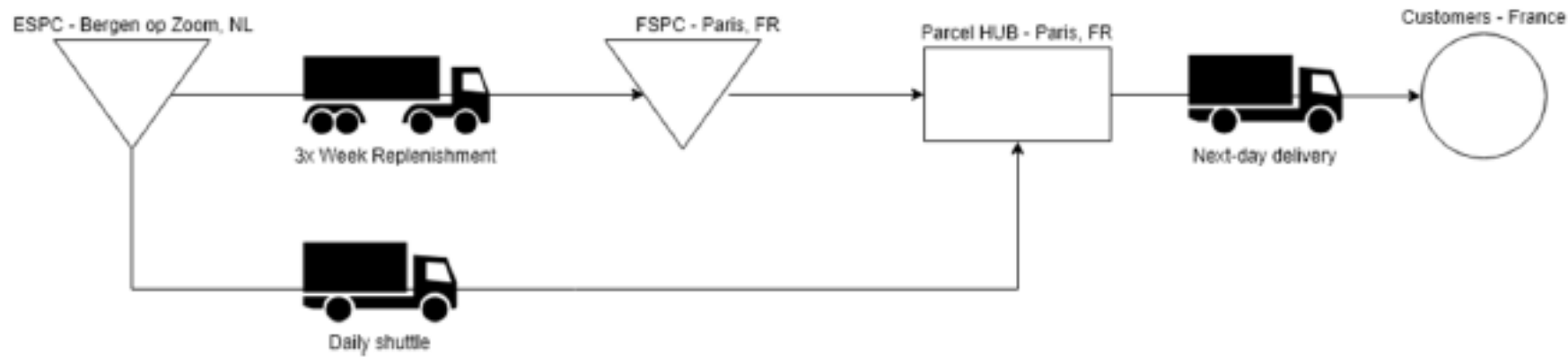
Plan & Approach

- Fidelity check
 - Check total customer demand
 - Check customer demand spread throughout day (80% before noon?)
 - Check tariffs with DHL in case of cut-off time shift from 17:30 to 13:00
- Daily linehaul
 - Contact TLS for the proposed new daily linehaul
- ESPC capacity
 - Check possibility and risk of taking over FSPC stock
- Decommissioning FSPC
 - 2 months notice
- Final plan of action

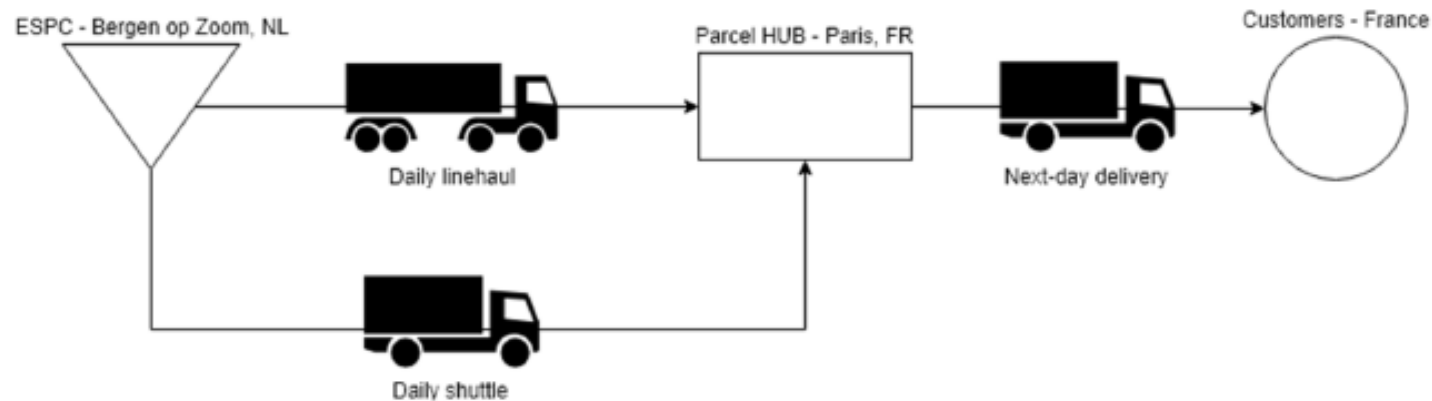


Date	Deliverable
27-april-2018	Project plan
18-may-2018	Data gathering phase
1-june-2018	Analysing phase
8-june-2018	Improving phase
12-june-2018	E-global presentation
15-june-2018	Implementing phase
22-june-2018	Total project report
4-july-2018	Presentation

Process flow as-is vs Recommended to-be



- As-Is situation:**
- Central DC in The Netherlands
 - Satellite in France
 - Replen cycle to Satellite
 - Urgent orders directly to forwarder hub



- Recommended To-Be:**
- Eliminate Satellite in France
 - Establish daily linehauls directly to forwarder hubs
 - Establish "last minute" transport to ship urgent requirements to the forwarder hub



Cost Comparison

Location	Description
ESPC	Picking for shuttle to HUB
ESPC	Picking for replenishment to FSPC
	<i>Total ESPC cost</i>
Transport	Daily shuttle to HUB
Transport	3x week replenishment to FSPC
	<i>Total transport cost</i>
FSPC	Inbound
FSPC	Storage
FSPC	Picking for collection to HUB
FSPC	Stock interest and risk
	<i>Total FSPC cost</i>
	TOTAL ANNUAL COST



Location	Description
ESPC	Picking for shuttle to HUB
ESPC	Picking for linehaul to HUB
	<i>Total ESPC cost</i>
Transport	Daily shuttle to HUB
Transport	Daily linehaul to HUB
	<i>Total transport cost</i>
	TOTAL ANNUAL COST

Cost reduction could be realised but service level continuation requires an additional study



Feedback from the students

“Great support during the assignment”

“Ricoh Supply Chain is a very interesting organisation for case studies because Ricoh SCM owns the E2E process”

“We had no time for a proper forwarder rate vs service level comparison”

“The case is too complex for the duration of this minor”



5.3 Points of attention

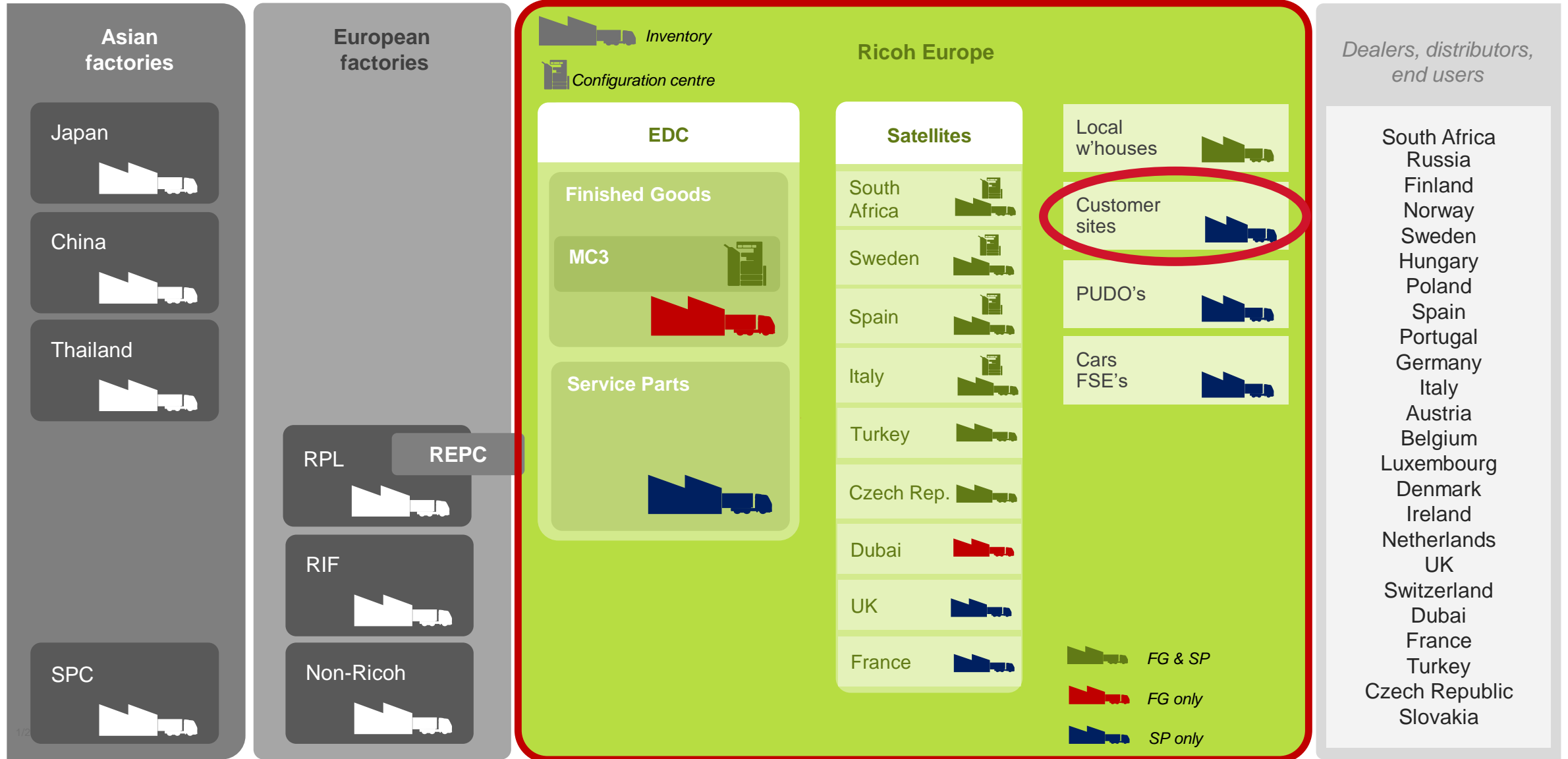
Because of time constraints and the nature of the assignment in the minor E-Preneurship, this investigation was not able to go into full detail regarding every aspect related to the current operations. Based on the big picture decommissioning FSPC would save a lot of costs per year. However, Ricoh may want to look into the following points of attention in order to extend the proposed design with all aspects involved in supplying the French market with service parts;

“Simplified scoping has a huge impact on the business case (e.g. # items in = # items out @FSPC)”

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Ricoh Supply Chain landscape



Assignment

- ▶ Problem statement
 - ▶ Ricoh Russia has large customers in Moscow area where the customer has a contract for a number of Multifunctional products (Copiers/Printers) in the building. Ricoh Russia Engineers are not carrying service parts in his car so therefore Ricoh is stocking strategic Service Parts at customer site to minimize machine downtime, due to additional travel time to pick up the required service part(s), when the Engineer visits the customer to maintain the products. The stock assortment and quantities are decided by the Engineer based on experience. Also stock replenishment is managed by the Engineer (he just brings more parts with him from the central warehouse and book these parts in customer site stockroom)
- ▶ Assignment
 - ▶ Analyse the service parts consumption by customer and determine the optimum service parts assortment and quantities, based on historical usage, by customer location. Develop a process where the optimum stock will be replenished based on min max levels on sku level.
- ▶ Goal
 - ▶ The goal of this project is to provide Ricoh with a recommendation to reduce inventory at customer site and increase service levels by having the optimum inventory and a sound process with as a result to have the right part at the right time on stock at customer site.
- ▶ Scope
 - ▶ Service Parts inventory optimisation at Major Accounts in Moscow area. Customers in scope are: MDM, Media Markt, Poligraf Media Group, Flagman, Forms Technology, Horoshaya Tipographya, Elektronischit Samara

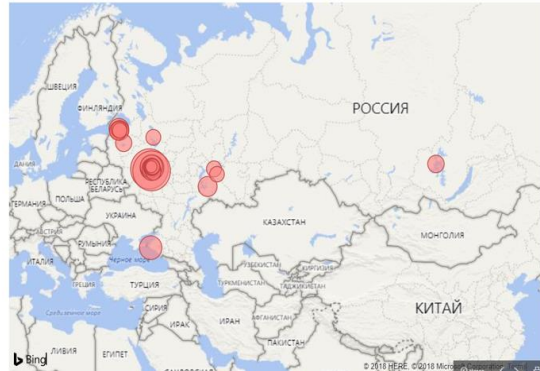
Plan & Approach

1. Understand the business in Russia

Customer	1		Всего	
	Sum	Q-ty	Sum	Q-ty
Формас технологии	2 580 тыс.	418	2 580 тыс.	418
ООУП "Почта России" действует с 22/09/17	2 570 тыс.	322	2 570 тыс.	322
МДМпринт	1 071 тыс.	193	1 071 тыс.	193
Типография Фламан	924 тыс.	120	924 тыс.	120
ТИПОГРАФИЯ ПМГ	903 тыс.	292	903 тыс.	292
Ниссан Мэнуфактуринг РУС (Санкт-Петербург)	622 тыс.	198	622 тыс.	198
ГК АКСОРД	551 тыс.	258	551 тыс.	258
Электросит - ТМ Самара	546 тыс.	407	546 тыс.	407
Северо-Запад Принт	508 тыс.	435	508 тыс.	435
Типография Михаила Фурсова	494 тыс.	143	494 тыс.	143
Медиа-Маркет-Сатурн	475 тыс.	161	475 тыс.	161
БСК Бытовые Приборы	354 тыс.	294	354 тыс.	294
ОНЛАЙН ПРИНТ	295 тыс.	44	295 тыс.	44
Плав	282 тыс.	49	282 тыс.	49
Энергоконтроль	251 тыс.	138	251 тыс.	138
П-Центр	237 тыс.	67	237 тыс.	67
Премьюм Пресс	208 тыс.	172	208 тыс.	172
ГлавоСмитКэвин Трейдиг	207 тыс.	76	207 тыс.	76
ГлавоСмитКэвин Хелсер	161 тыс.	58	161 тыс.	58
Нефтеини Медиа	128 тыс.	100	128 тыс.	100
Любимая Типография	125 тыс.	96	125 тыс.	96
Фреши Маркет	107 тыс.	53	107 тыс.	53
Пищесторы Менеджмент	105 тыс.	104	105 тыс.	104
Бриг Принт	102 тыс.	27	102 тыс.	27
Мегасон ПАО, Столичный филиал	83 тыс.	89	83 тыс.	89
БИ Колман - Сервис	79 тыс.	109	79 тыс.	109
Амгуст Борг	78 тыс.	84	78 тыс.	84
АКРОС	53 тыс.	63	53 тыс.	63
ПМГ	-279 тыс.	-81	-279 тыс.	-81
Всего	13 818 тыс.	4 489	13 818 тыс.	4 489

Place IDs	ServBDivision	Place IDs	CustStock on PlaceIDs	Qty	Customers	CS Inventory on August 15th
IPB	IPB	3	3	998	3	1 455 тыс.
CIP	CIP	15	14	1 478	15	900 тыс.
GA	GA	4	4	493	4	500 тыс.
IPS	IPS	2	2	701	2	439 тыс.
MA	MA	1	1	435	1	439 тыс.
MA PP	MA PP	3	3	331	3	439 тыс.
MDS	MDS	29	28	4 489	29	13 818 тыс.

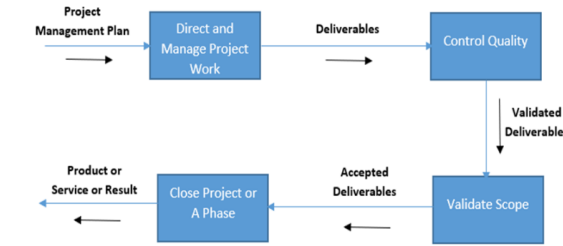
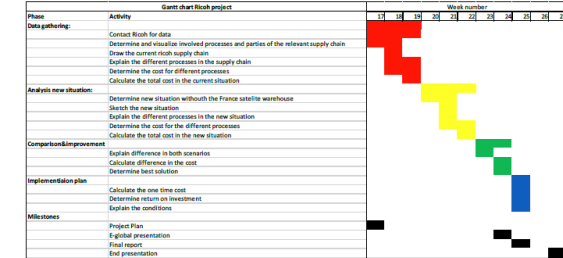
ПризнакМинисклада



2. Data analyses & process development

On site stock	Apr	Mar	Jun	Jul	Aug	Sep	Oct	Age last 6 month	Av usage per year	MRP level
MDM (on site)	20,825	22,638	17,778	15,923	14,310	14,562	13,685	1	0,33	0
Media Markt (on site)	4,763	4,763	4,763	4,763	6,278	7,574	7,574	1	0,33	0
Pollgraf Media Group (on site)	5,986	4,586	8,040	7,964	8,199	8,665	8,689	1	0,33	0
Flagma (on site)	15,655	14,201	14,453	14,255	12,812	12,878	13,101	1	0,33	0
Farms Technology (on site)	45,157	33,817	33,254	30,583	32,849	34,395	33,903	1	0,33	0
Horoshaya Tipografiya (on site)						7,600	8,532	1	0,33	0
Electroschit Samara (on site)	7,307	7,201	7,431	6,775	7,242	7,866	7,533	1	0,33	0
MDM (on site)	AB014348	Шестерня 30 зубьев в сборе						1	0,33	0
MDM (on site)	AE030040	Щаpиковый подшипник.						1	0,33	0
MDM (on site)	AE040088	Разглаживающий вал плоской ленты						1	0,33	1
MDM (on site)	AE045063	Блок чистящей ленты в сборе						1	0,33	1
MDM (on site)	AE045065	Чистящее полотно						1	0,33	0
MDM (on site)	AW020198	Фотоперерыватель						1	0,33	0
MDM (on site)	AW100177	Термистор блока термоакрепления						2	0,67	1
MDM (on site)	DO746257	Смазывающий щеточный вал						1	0,33	0
MDM (on site)	DO746424	Лезвие очистки						2	0,67	2
MDM (on site)	D1792224	Проволока коронатора заряда						15	5,00	12
MDM (on site)	D1793581	Лезвие очистки, в сборе						8	2,67	4
MDM (on site)	D1793635	Смазывающий брусок в сборе						1	0,33	0
MDM (on site)	D1796051	Вал блока промежуточного переноса						4	1,33	4
MDM (on site)	D1796909	Основной противопыльный фильтр.						1	0,33	0
MDM (on site)	G1782500	Сетка зарядного коротрона						5	1,67	4
MDM (on site)	G1782510	Очиститель нити коронатора в сборе						18	6,00	12
MDM (on site)	G1782605	Пружина натяжения проволоки корд						6	2,00	12
MDM (on site)	M0779906	Ручка блока термоакрепления в сб						1	0,33	0
MDM (on site)	M0816573	Бутыль для сбора отработанного то						1	0,33	0
MDM (on site)	M2050638	Блок ленты переноса/отделения в сб						1	0,33	1
MDM (on site)	M2051586	Правая передняя дверца блока терм						1	0,33	0
MDM (on site)	M2052140	Верхняя крышка датчика позициони						1	0,33	1
MDM (on site)	M2052242	Очиститель сетки в сборе						4	1,33	4
MDM (on site)	M2052245	Демпфер коронатора						14	4,67	24

3. Status updates on deliverables



Complete final recommendation by January 21st

Role in the project

- ▶ Two students: Anthea and Nathalie
- ▶ Case provided by Ricoh
- ▶ Tools and solution provided by Phact
- ▶ First line student support by Phact detailed queries clarified by Ricoh
- ▶ Joint attendants of the regular status updates on deliverables & final evaluation



Questions

Thank you