



Customer Case: How PPG Industries Uses Their SAP ERP Data to Optimize Its Supply Chain Performance

Tjwan Liem, PPG Industries

Richard de Ouden, insightsoftware

SAPinsider
2023

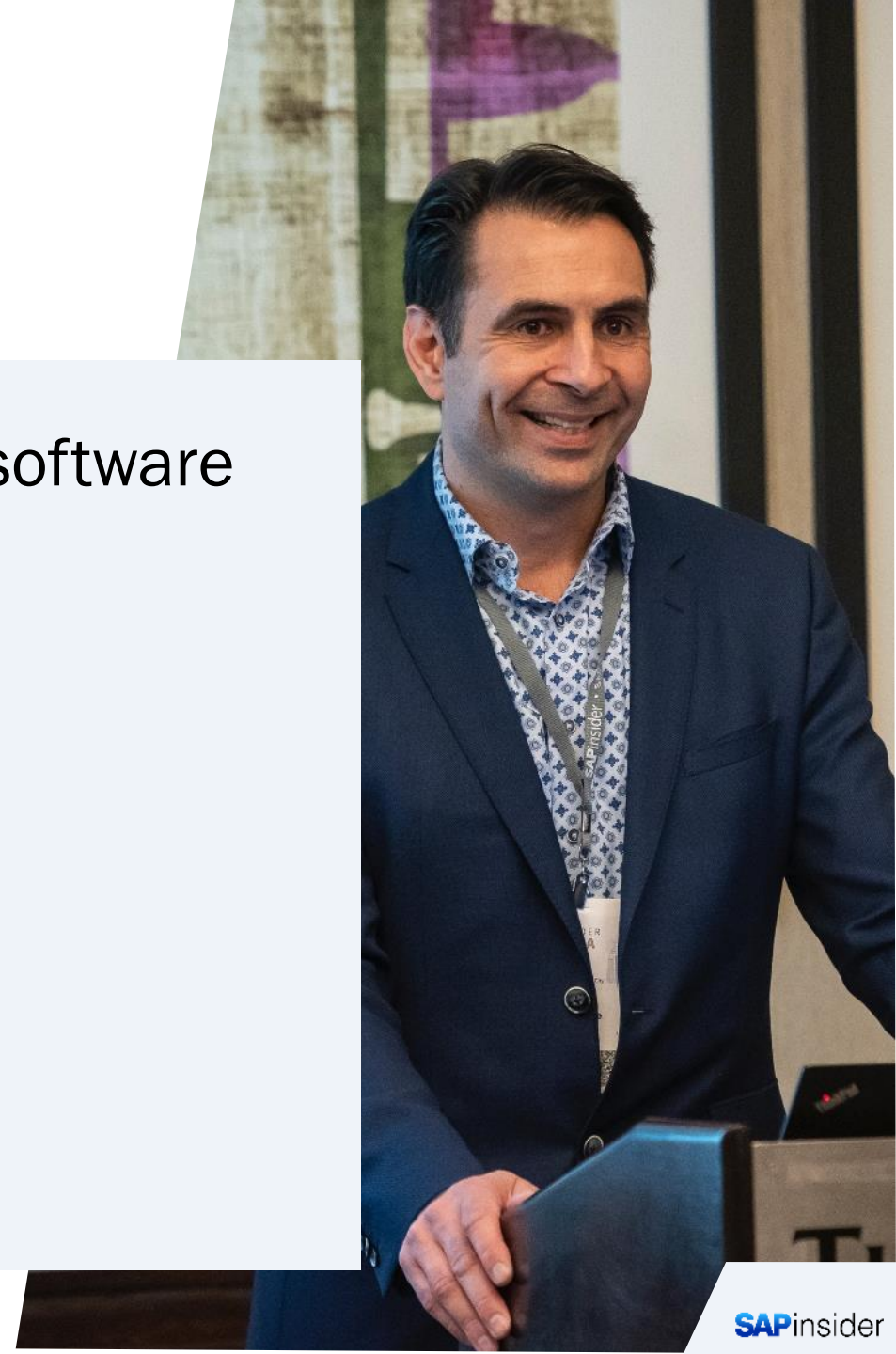
A photograph of a woman with blonde hair and glasses, wearing a black vest over a floral patterned shirt, sitting at a conference table and smiling. Other people are visible in the background, also seated at the table. A white coffee cup is on the table in front of her.

In This Session

- Learn how PPG Industries, a global supplier of protective coatings, utilizes the power of operational analytics and business intelligence to improve their supply chain processes
- See how Angles4SAP can become a high value asset in your SAP/IT landscape, enabling your business users to analyze and improve their business processes, and get more value out of your SAP investment and support your journey to SAP S/4

What We Will Cover

- Introductions: PPG and insightsoftware
- Angles for SAP
- Customer Case Study: PPG
- Wrap-Up



Topic 1

- Introductions:
PPG and insightsoftware



Introduction – Richard den Ouden

Richard has over 25+ years of experience in research and development focused on SAP logistics and supply chain analytics, consultancy, account management and product management. As co-founder of Every Angle (today: Angles4SAP) the world's most sophisticated Supply Chain analytical software add-on for SAP ERP, he is a trusted advisor to management and a growth-enabling key resource assisting organizations to optimize their SAP supply chain processes, by getting the most value out of their SAP ERP platform

Richard's passion is to help companies improve their data quality, and the planning & execution of their processes by using their SAP ERP data to analyze their operations, measure their KPIs, find bottlenecks, define underlying root cases and drive continuous improvement. He has completed 100+ successful projects at mid-sized companies and large multinationals globally.



Introduction – Tjwan Liem



Bringing innovation
to the surface.™

Tjwan Liem is Business Intelligence Manager at PPG- Architecture EMEA responsible for initiating and implementing improvements in production, warehousing, logistic, working capital and complexity (Six Sigma). With main focus to create a data driven organization with sustainable KPI.

Tjwan has successfully lead a class A certification (Oliver Wright) followed by SAP implementation to support the Sales and Operation Planning process. In the role of global demand manager the working capital was reduced by 40% and keeping the service >95%. In 2001 in the search for a more local role, he found the Planning Manager role, with focus on rolling out the S&OP process and SAP R3 upgrade.

Interest and passion of initiating and implementing sustainable solutions he became Business Intelligence Manager



Topic 2

- Angles for SAP
 - What & Why
 - Live demonstration



You need transparency and intelligence!

You need easy transparency of your operational processes to be able to measure and improve your supply chain performance:

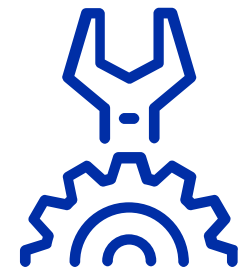
- Operational KPIs (performance)
- Bottlenecks (reactive)
- Root causes (preventive)
- Data quality (trusted decision making)



How to do this when running SAP ERP?

BUT...

- SAP is too complex to get information out (>200,000 tables in database)
- IT has too little capacity to build reports for the business (Z-reports)
- People spend too much time building their own reports in Excel/Access
- Lack of single version of the truth - what information is right?
- Missing alignment between historical KPI's and operational action lists

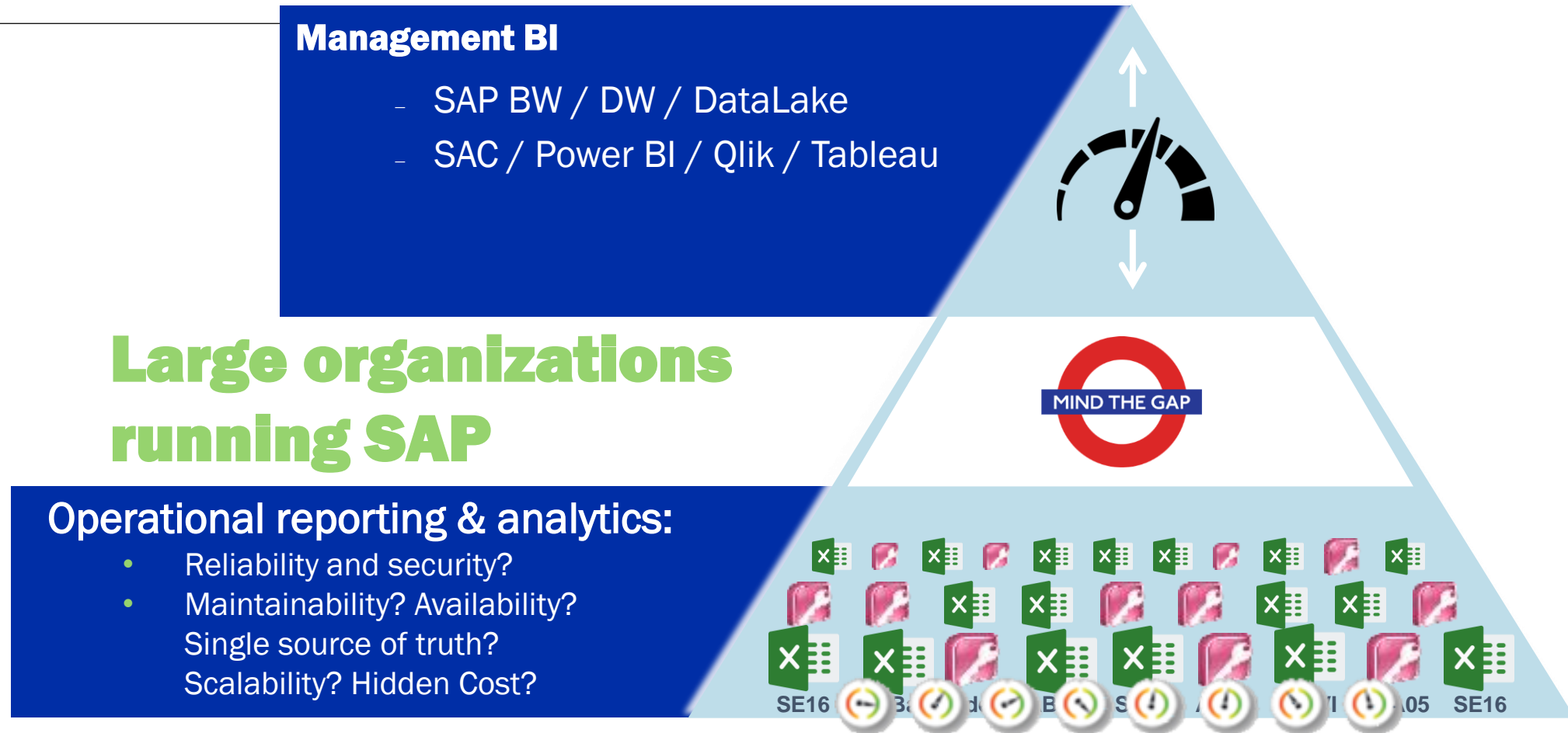


The Solution is Simple! Angles for SAP

- Plug & play + SAP certified => Installed/Up & Running on Day 1
- Standard content => Get immediate value from Day 2
- Business self service => Do everything yourself from Day 3
- Native integration of Angle in SAP GUI and BI tools => Easy to deploy

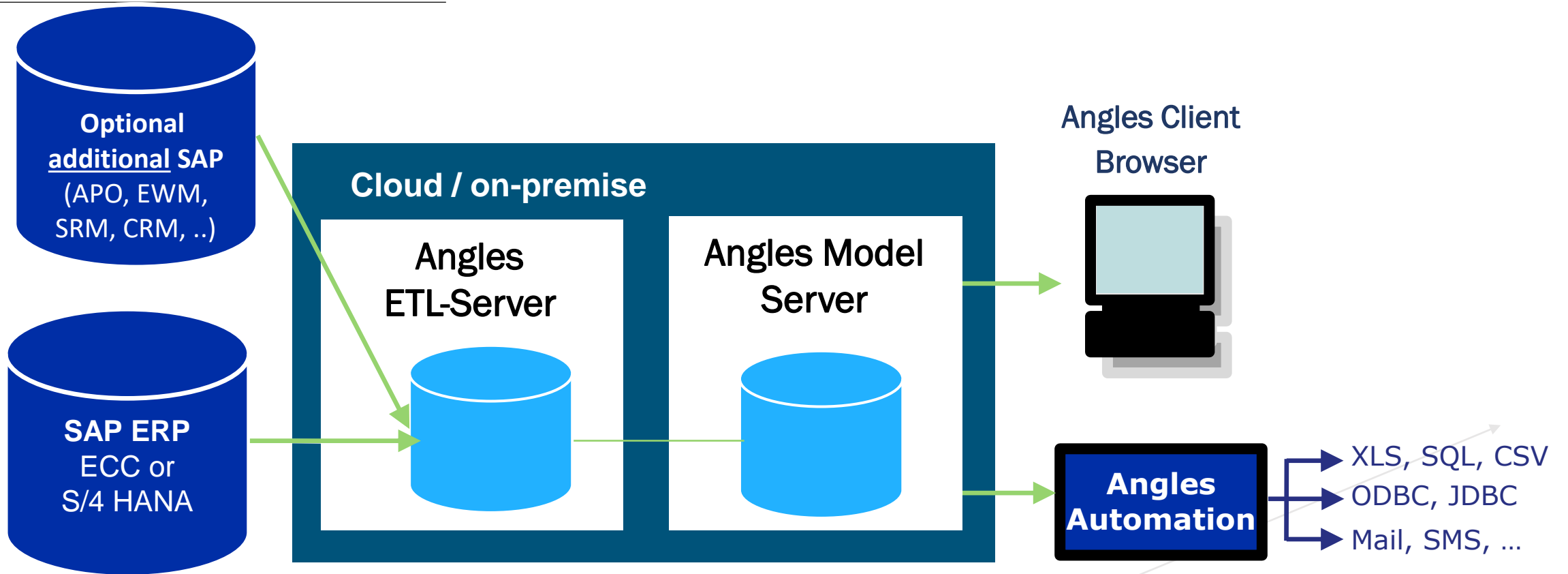


The Strategy to Execution Gap

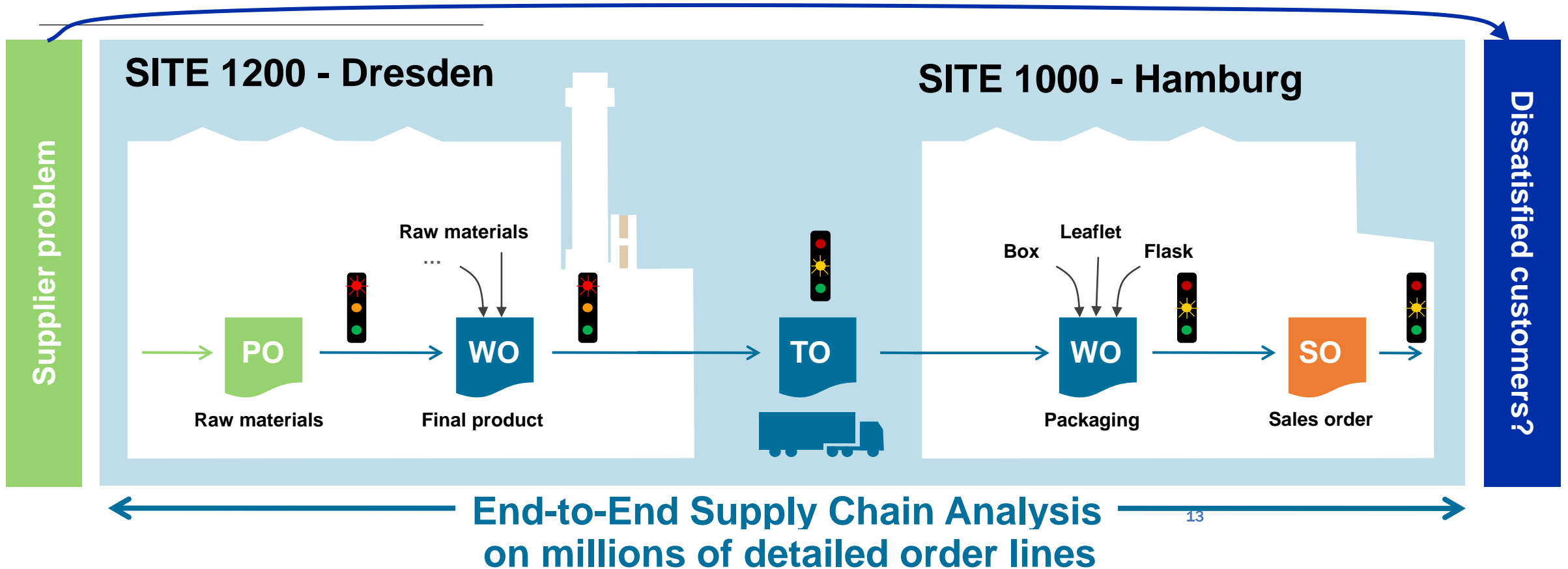


What's really going on in all those spreadsheets?

Angles for SAP - Architecture (simplified)



Supply/Demand Matching Algorithm



- Calculate consumption of independent requirements on basis of open/planned orders
- Link cross-company sales and purchase documents
- Simulate expected inventory/goods flow to visualise stock, supply and demand

Demonstration



Solution: Angles for SAP

- How to build basic master data checks
- How to analyze your supply chain processes
 - Historical delivery performance
 - Backorders (past due & pollution)
 - Bottlenecks
- How to analyze excess stock and reduce inventory (e.g. overplanned PO's)

PPG

- Company Overview
- Real-life use case examples
- Results & recommendations



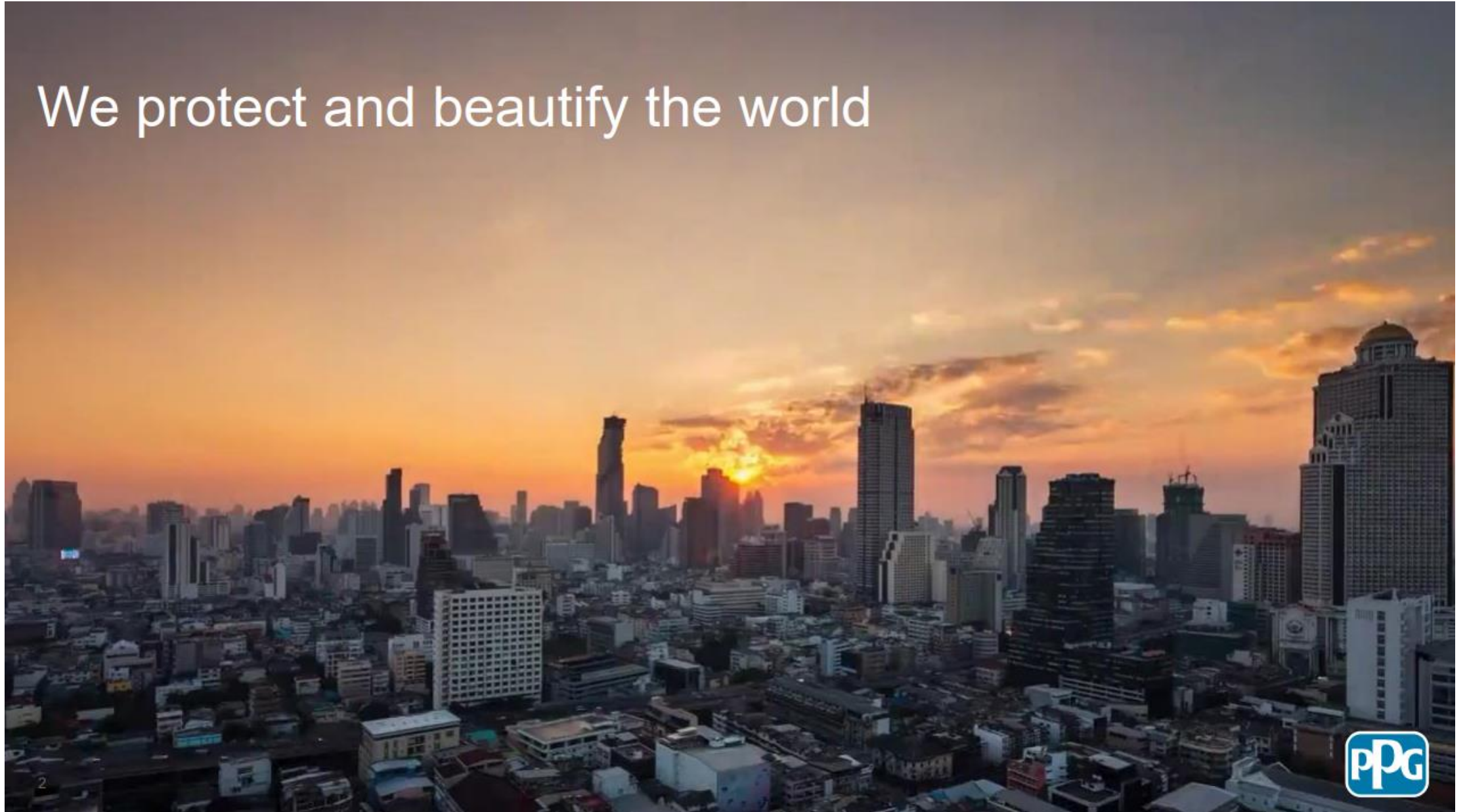
Who are PPG?



We protect and beautify the world™



We protect and beautify the world



PPG is a global manufacturer of coatings to all surfaces



Founded in 1883



Head office in
Pittsburgh, PA



Sales in 75+
countries



#220 on the
Fortune 500 list
in 2021



PPG paint and coatings applied on some of the most wellknown products and brands



World famous landmarks



Devices and screens



Flights – from windows to the external of the flights



Passports, driver licenses and ID cards



Cars and infrastructure



Our homes



Our offices



Cans



PPG's portfolio reporting through two segments PPG's portfolio

Performance Coatings: 61%



Industrial Coatings: 39%



Aerospace



Architectural Coatings



Automotive OEM Coatings



Industrial Coatings



Automotive Refinish Coatings



Protective and Marine Coatings



Packaging Coatings



Specialty Coatings and Materials



**We have a leading position within innovation,
colours and sustainability**



Innovations



\$466MM

Average investment in the last 4 years in R&D

30+

R&D® 100 Awards,

3.500+

Employees with technical skills at more than 100 locations

40%

Goal for the total sales generated from sustainable products & services

35%

Of PPG products sold in 2020 delivered sustainable benefits



We develop colors

PPG translates global colour trends to customers



5

Colour focused businesses



4

Global regions



30

International colour experts



2021

Colour of the Year



Sustainability at PPG



We are committed to delivering lasting value for stakeholders and customers by operating with integrity, working safely, respecting the contributions of our people, preserving the environment and supporting the communities where we operate.



Sustainability has always been a key focus for PPG

Good Progress has been made against PPG's 2030 goals



PPG 2030 ESG targets with 2019 baseline



PPG has been recognized as an industry leader in sustainability

Fortune World's Most
Admired Companies 2022 –
#3 in Chemicals Industry

Newsweek's America's Most
Responsible Companies – #16 in
the Materials and Chemical category

CPA-Zicklin Index of
Corporate Political Disclosure
and Accountability





PPG AC Denmark

- **Head Office in Soeborg**
 - AC Denmark
 - PMC Scandinavia
 - Refinish Scandinavia
- **AC Denmark**
 - Total 330 employees. Approx 200 at the Soeborg site
 - Local production and warehouse



Historical roots in Denmark



- 1928 Sigurd Dyrup establishes Dyrup together with Axel Monberg and Einar Thorsen.
- 1947 First subsidiary established in Portugal.
- 1991 DYRUP A/S acquires GORI.
- 2012 PPG acquires DYRUP A/S, and establishes Scandinavian head quarters in Søborg.



Wellknown acqustions



\$3,2BN
2008

European Coatings
Manufacturer

- Largest acquisition in PPG's history
- Expansion of presence within construction paint products
- Expanded European presence



DKK 700M
2012

Danish Coatings
Manufacturer

- Danish market leading company
- Significant sales in some parts of Europe



\$1,3BN
2021

Nordic Coatings
Manufacturer

- Nordic company with large sales in the Baltic countries, Poland and Russia
- Strong focus on environment and sustainability



Market Overview – Total market

KEY FACTS 2022



PAINT MARKET SIZE*
Value: **204 €MM**
Volume: **37 MM litres**



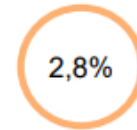
PAINT CONSUMPTION
6 L per capita



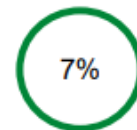
Population MM



GDP



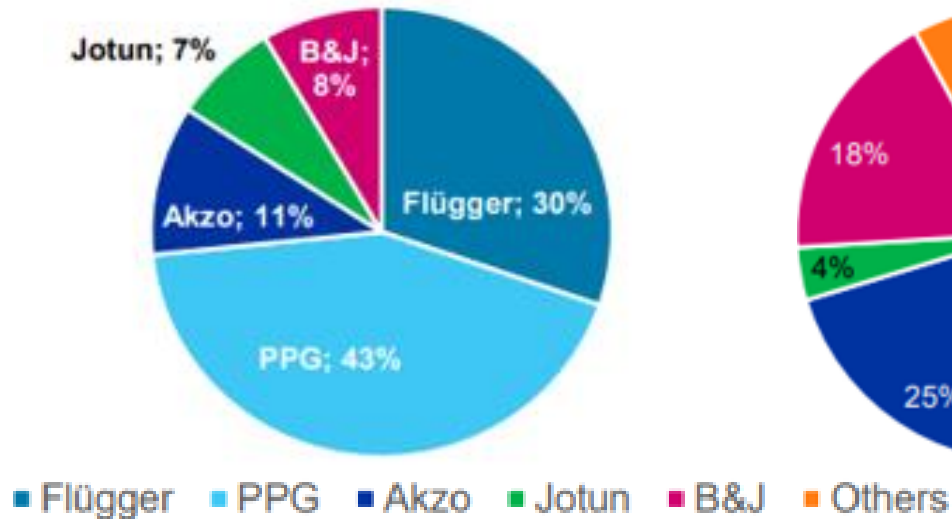
Unemployment



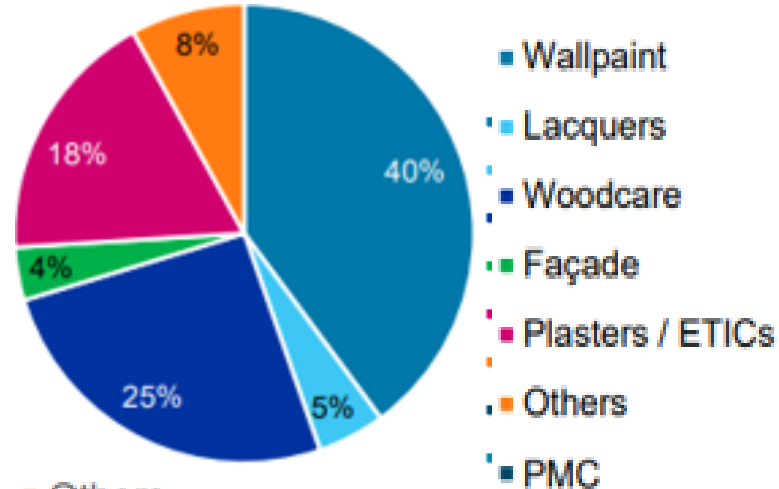
Inflation



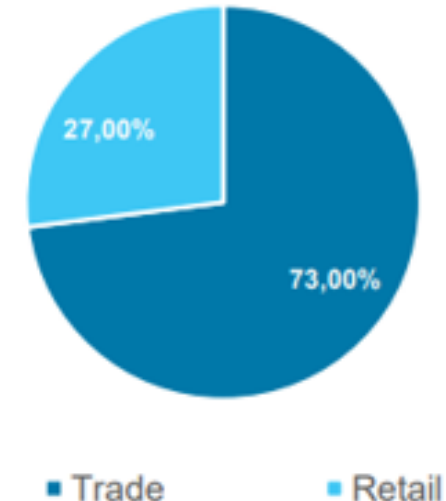
PPG MARKET SHARES



PPG NET SALES PRODUCT TYPE



PPG NET SALES BY CHANNEL



*FY 2022. Paint and woodcare only
















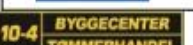







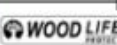
Distribution to Professional Painters

In our 23 PPG Captive Stores and 19 PPG partners we have Denmark's strongest product assortment to professional painters - Dyrup Professionel, Sigma Coatings, GORI Professionel, Beckers, Tikkurila, ProGold and a broad assortment of tool brands and other materials.



Retail distribution

PPG Distribution in retail market Denmark:

Company	No. of shops	SOW (paint depart)	PPG Brands	PPG PL
 SILVAN	42	80%	 DYRUP	GORI Silvanol®
 STARK <small>Sammen bygger vi professionelt</small>	75	60%	 DYRUP	GORI
 XL	94	60%	 DYRUP	GORI RUM
 BAUHAUS	18	20%		GORI swingcolor®
 BYGMA	59			
 BYGGMAX	1			
 DAVIDSEN	23	80%	 DYRUP	GORI DAVIDSEN
 Fog	10	100%	 DYRUP	GORI Fog
 10-4 BYGGECENTER TØMMERHANDEL	6	80%	 DYRUP	GORI
 JBC <small>TRÆ & BENSÆVNING</small>	18			
 Bilka	19	50%	 DYRUP	GORI
 harald nyborg	33	0%		
 jem & fix <small>LARSEN & SØRENSEN</small>	125 (+59 S, +10 N)	25%		GORI  Træfix  WOOD LIFE



Nya Karolinska Solna hospital



- Stockholm, Sweden
- 150,000 liters of paint
- TIKKURILA™ paints by PPG, mainly Luja Matt finish paint

Hovet Arena



- Stockholm, Sweden
- Iconic indoor hockey arena
- A mix of TIKKURILA™ paints and resins by PPG for the floors and ALCRO™ paint for the walls of the arena

Margaret Bridge



- Budapest, Hungary
- Built in 1876, links Margaret Island to the banks of Buda and Pest
- PPG AMERLOCK® and PPG PSX® protective coatings

Willems Bridge



- Rotterdam, the Netherlands
- The rich red color catches all the eyes
- PPG PSX® 700 premium topcoat

Grande Arche de la Défense



- Paris, France
- 20th-century version of the famous Arc de Triomphe
- PPG DURANAR® coatings

Empire State Building



- New York City, U.S.
- Currently 7th tallest building in NYC
- PPG DURANAR® coatings




Angles for SAP at PPG

- PPG and Angles for SAP
 - First go-live in 2007 (version 2.x)
 - 3.0-beta version test (2015)
 - SaaS-Cloud (2023)
 - S/4 HANA coming years (future scope)
- Angles for SAP inside PPG
 - Position of Angles for SAP
 - Admin -, Power -, Viewing-user (all business people)
 - How PPG uses Angles for SAP



Bringing innovation
to the surface.™

Position of Angles for SAP

	WHERE	WHEN	WHO
	Airport 1 hour pre-boarding; 1 – 2 hour delay	Long range	Pilot
	Train station 5 minutes before schedule; 10-15 min delay	Medium range	Engine-driver
	Every Where No schedule Immediately	Short range	You

Position of Angles for SAP

	✓ Strong	○ Neutral	✗ Weak	SAP ERP	Angles from insightsoftware	QlikView	SAP BW
System performance				x x x	✓ ✓ ✓	✓ ✓ ✓	✓
Business self service				x x x	✓ ✓ ✓	✓	○
SAP Business logic out of the box				✓ ✓	✓ ✓ ✓	x x x	✓ ✓
Horizontal analysis				✓	✓ ✓	✓	x x
Vertical analysis				x x	✓	✓ ✓	✓ ✓
Real time data				✓ ✓ ✓	✓ ✓	x	x
Transactional data				✓ ✓ ✓	✓ ✓		
Flexibility + custom requirements				x x	○ ???	✓ ✓ ✓	x x
Data transformation				na	✗ ✗	✓ ✓	✓
Data History				○	✗ ✗ ✗	✓	38 ✓ ✓ ✓
Multi sourcing				na	✗ ✗	✓ ✓ ✓	x
Dashboards				na	✓	✓ ✓ ✓	x x
Operational decision support				✓	✓ ✓ ✓	○	○
Strategic decision support				x x x	x	✓ ✓ ✓	✓

Meet the EMEA Power-user team

Admin -, Power -, Viewing-user (all business people)


- PMC
 - Belgie (1)
 - Poland (1)
- AC-EMEA
 - Denmark (2)
 - Netherlands (4)
 - UK (3)
 - France (2)
 - Portugal (1)
 - Hungary (2)
 - Poland (1)
 - Czech (1)



How PPG uses Angles for SAP (Component availability)

Used by departments ... for the following use cases:


- **Late deliveries**



	Count	Totals	Order type dependent orders	
			Work Order	Stock replenishment
Totals		5169	1823	3346
Late	528		107	421
Critical	171		100	71
Not critical	4470		1616	2854

- $528/5169 = 10\%$ late deliveries
- $107/5169 =$ only 2% need attention, will cause down time

- **Rescheduling**



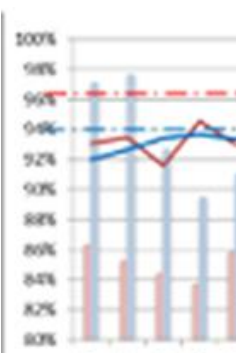
	Count	Totals	Order type dependent orders	
			Work Order	Stock replenishment
Totals		5169	1823	3346
NEED earlier or downtime	443		374	69
Could cause downtime	910		768	142
No risk	3816		681	3135

- $374/5169 = 7\%$ causing downtime
- $768/5169 =$ additional 15% is critical

40

How PPG uses Angles for SAP (Service report)

• Start



• Fitt

line
21
23
23
29
17
13
19
15
18
19

General filters ^

No preferences

☐ Angle
 ☐ Template
 ☐ Dashboard

☐ Private
 ☐ Private Display
 ☐ Validated
 ☐ Warnings
 ☐ Starred

☐ O15_100
 ☐ EA4IT

☐ I created
 ☐ I can validate
 ☐ I can manage

Business ^

No preferences

Region ^

No preferences

Country (applied to) ^

No preferences

Name ^	Created ^	Recently used ^	Relevancy ^	View
19 results				
★ Service RDK (SD_schd line) (AC_EUR_DK) ?	O15_100 - EASystem - Oct/16/2017 10:44			
O15_100 - EASystem - Oct/16/2017 10:44 The individual quantities of a sales document item, each with a planned and a realized finish date, are displayed in a sales document schedule line. The Sales Document Schedule line is the third level in a sales...				
★ Service (SD_schd line) (AC_EUR_EMEA) ?	O15_100 - Liem, Tjwan - Nov/28/2017 12:49			
O15_100 - Liem, Tjwan - Nov/28/2017 12:49 The individual quantities of a sales document item, each with a planned and a realized finish date, are displayed in a sales document schedule line. The Sales Document Schedule line is the third level in a sales...				
★ SC NL - Service RNE (SD_schd line) ?	O15_100 - EASystem - Oct/16/2017 10:44			
O15_100 - EASystem - Oct/16/2017 10:44 QUTATION ITEM CAT excluded 25/01/2021 Tjwan The individual quantities of a sales document item, each with a planned and a realized finish date, are displayed in a sales document schedule line. The Sales...				
★ Service RIB (SD_schd line) ?	O15_100 - EASystem - Oct/16/2017 10:44			
O15_100 - EASystem - Oct/16/2017 10:44 The individual quantities of a sales document item, each with a planned and a realized finish date, are displayed in a sales document schedule line. The Sales Document Schedule line is the third level in a sales...				
★ Service RRE (SD_schd line) (AC_EUR_XXX) ?	O15_100 - EASystem - Oct/16/2017 10:44			
O15_100 - EASystem - Oct/16/2017 10:44 The individual quantities of a sales document item, each with a planned and a realized finish date, are displayed in a sales document schedule line. The Sales Document Schedule line is the third level in a sales...				
★ Service RSE (SD_schd line) (AC_EUR_XXX) ?	O15_100 - EASystem - Oct/16/2017 10:44			
O15_100 - EASystem - Oct/16/2017 10:44 The individual quantities of a sales document item, each with a planned and a realized finish date, are displayed in a sales document schedule line. The Sales Document Schedule line is the third level in a sales...				

Sum of Active Order Value	Sum of Active Shopped Value	Sum of Service % (to total on Value)
€1,435,990	€98,820	97.20%
€100,790	€10,710	96.67%
€1,275,200	€77,090	97.48%

Sum of Active Order Value	Sum of Active Shopped Value	Sum of Service % (to total on Value)
€980,647	€76,790	94.23%
€1,520,854	€14,887	99.00%
€120,800	€7	100.00%
€16,400	€7	100.00%
€1,435,990	€98,820	97.20%

Sum of Active Order Value	Sum of Active Shopped Value	Sum of Service % (to total on Value)
€1,075,084	€74,889	97.50%
€180,747	€1,668	99.32%
€1,275,200	€77,090	97.48%

How PPG uses Angles for SAP (Disruptive Farce Majeur 2021)

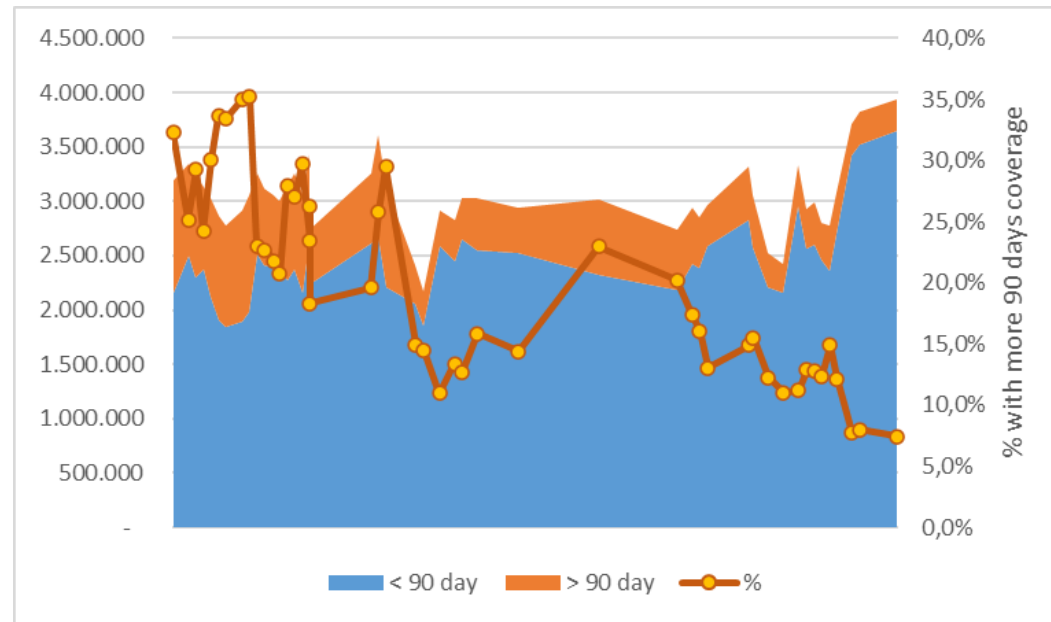
Shortage	HIGH	
Component	Open PO	Availb stock
1280650	40.000	10.252
Total available	50.252	

HALB	Margin kg	ROH_Usage per kg	margin /kg ROH	Need kg ROH per HALB
91105/PLXX	€ 1,09	60%	€ 0,65	125.843
1110718/PLXX	€ 4,16	35%	€ 1,46	21.331
1046676/PLXX	€ 5,32	31%	€ 1,63	15.486
1111528/PLXX	€ 4,09	35%	€ 1,43	8.875
1111511/PLXX	€ 5,85	35%	€ 2,05	842
			Total nee	172.377

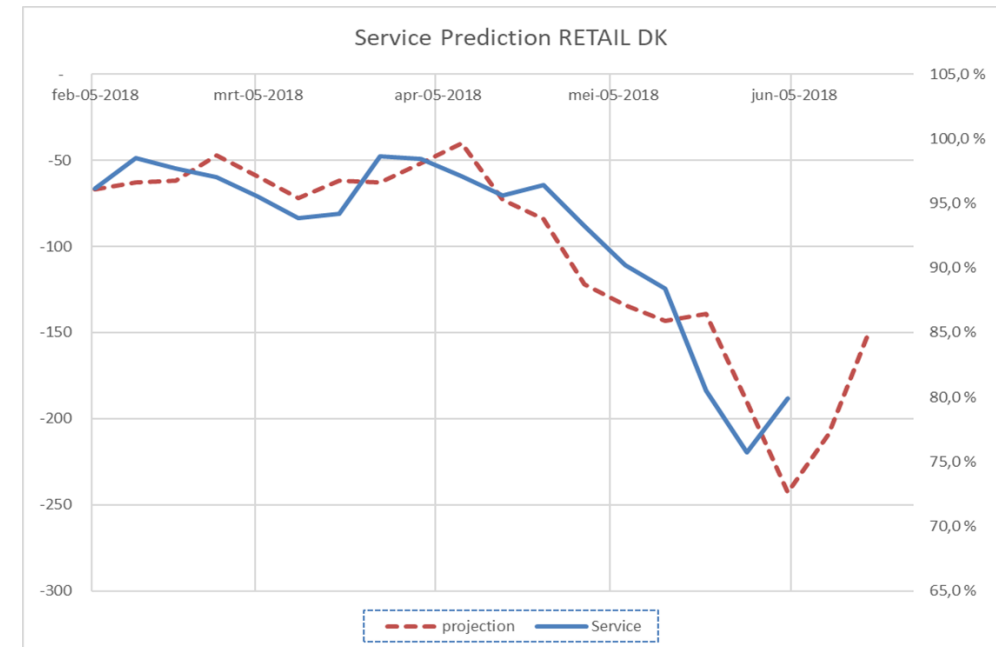
HALB	Name	L12M kg (HALB)	FERT code	ABC	L12M kg (FERT)	In planning	Stock (kg)	WH 90d (kg)	WH 90d Ba	DIO
91105/PLXX		424.914		check	-	-	-	-	-	--
				MTO	334.539	92.522	-	124.583	-5.800	51
				A	26.080	5.471	1.535	9.538	-292	55
				A	46.292	11.660	4.049	11.775	-1.230	61
				B	3.688	-	753	1.023	-46	65
				disc	565	-	-	-	-	--
				disc	802	-	-	-	-	--
€ 0,65	125.843			A	4.691	1.926	-	963	-	90
				C	2.432	1.945	91	1.655	25	111
				C	1.915	-	821	635	17	103
				C	1.866	729	-	875	-168	38
				B	482	482	-	482	-396	45
				C	401	-	-	78	-33	-
				C	323	-	208	93	94	201
				disc	-	-	-	-	-	--
					424.077	114.736	7.456	151.700	-7.829	57
1046676/PLXX		102.519		A	81.803	22.922	36	32.134	-1.265	54
€ 1,63	21.331			A	12.316	-	2.398	2.972	-340	63
				B	10.605	3.134	-	4.684	-232	43
				C	951	475	163	372	14	133
					105.675	26.532	2.597	40.163	-1.824	56
1046676/PLXX		123.474		A	78.715	49.165	-	67.445	-2.144	56
€ 1,46	15.486			B	11.175	-	1.657	3.700	-529	28
				B	19.535	-	10.744	3.568	502	269
				B	6.155	-	2.432	926	423	236
				disc	1.024	-	-	-	-	--
					116.604	49.165	14.833	75.640	-1.748	67
1111528/PLXX		51.369		A	40.932	11.485	-	36.213	-3.174	18
€ 1,43	8.875			B	4.994	3.201	37	3.191	-95	74
				B	3.347	1.334	22	1.487	-179	60
				B	1.761	1.174	-	1.004	-146	76
					51.033	17.193	59	41.895	-3.594	36
1111511/PLXX		4.876		C	3.094	467	1.129	454	176	316
€ 2,05	842			disc	1.764	-	-	926	-74	-
				B	-	2.031	-	422	1.174	360
				disc	-	-	-	498	-154	-
					4.859	2.498	1.129	2.300	1.122	236
Grand Total					702.248	210.123	26.074	311.697	-13.872	58

How PPG uses Angles for SAP (Inventory Health)

- Excess monitor >90 day



- Manco monitor (reschedule advise)



How PPG uses Angles for SAP (Flexibility)

- Customized fields

- Service level
- Where used list

- Non SE16N extractable

- Time stamp picking confirmation (structure)
- Relation HU and Delivery Note item (5 days work)

PPG (Self) Available PPG with Order...
100 %
100 %
100 %

Component ... # Where Used BOM - Active	PPG Component ... PPG # Where Used BOM -...
7	0
11	0
7	0
7	0

PPG (Self) Picking Confirmati... VBFA_LIPS2-...	PPG (Self) Picking Confirmati... VBFA_LIPS2-...
Jul/20/2023	10:30
Jul/20/2023	10:30
Jul/20/2023	10:30
Jul/20/2023	10:30
Jul/20/2023	10:30
Jul/25/2023	15:31
Jul/06/2023	11:30
Jul/06/2023	11:30
Jul/06/2023	11:30
Jul/06/2023	11:30

Handl. Unit Hdr HU identification 2	Delivery Item Delivery Item	M... Matr	Material Description	Material Volume
VEKP-EXIDV2			MAKT-MAKTX	MARA-VOLUM
387126993004127097	1700092714/90	385183	LD WOW SPR PRI-02 AL AC BWL 0711001250	2.5
387126993004142946	1700092714/90	385183	LD WOW SPR PRI-02 AL AC BWL 0711001250	2.5
387126993004143073	1700092714/130	384264	LD IWP PASTEL MAT SFPF WEISS 7000002125	12.5
387126993004168953	1700092714/80	385295	LD WOW TOP GLS-01 AC BZ1 0071000925	0.9
387126993004180665	1700092713/20	383079	LD WOS PRI MAT-02 AL BWL 0711001250	2.5

44

Experiences & recommendations

User feedback, IT feedback

- Very useful keys (reschedule adv; 90d excess; dependent order; etc)
- Create quickly what you need by your self

Results & benefits:

- EA is bringing the information of what is in SAP and easy to convert to knowledge by business user

Learnings & Recommendations to other SAP using companies:

- An ad on that bring the use of SAP to a more business decision data source

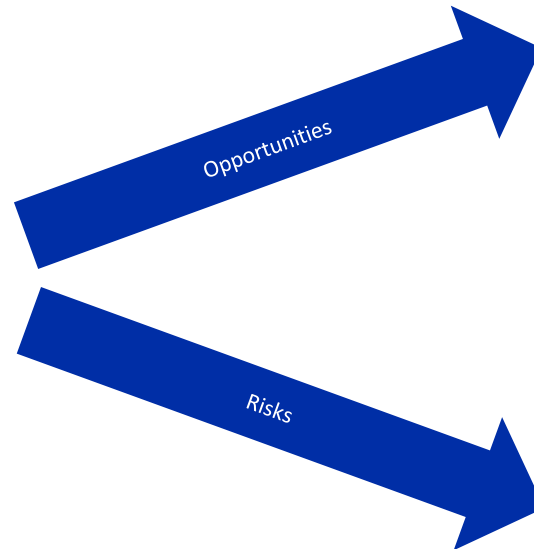


1) S/4HANA Migration is a Big Wave ... with both Risks & Opportunities



Key Driver for Migration to S/4:
End of maintenance and support
for SAP ECC releases in 2027

2023 SAPinsider Benchmark Report – SAP S/4HANA Migration



Wrap Up



2b) Your choice: Data cleansing (y/n)



AS-IS: SAP ECC Legacy
(after 20+ years of usage)

What is your route
to SAP S/4?

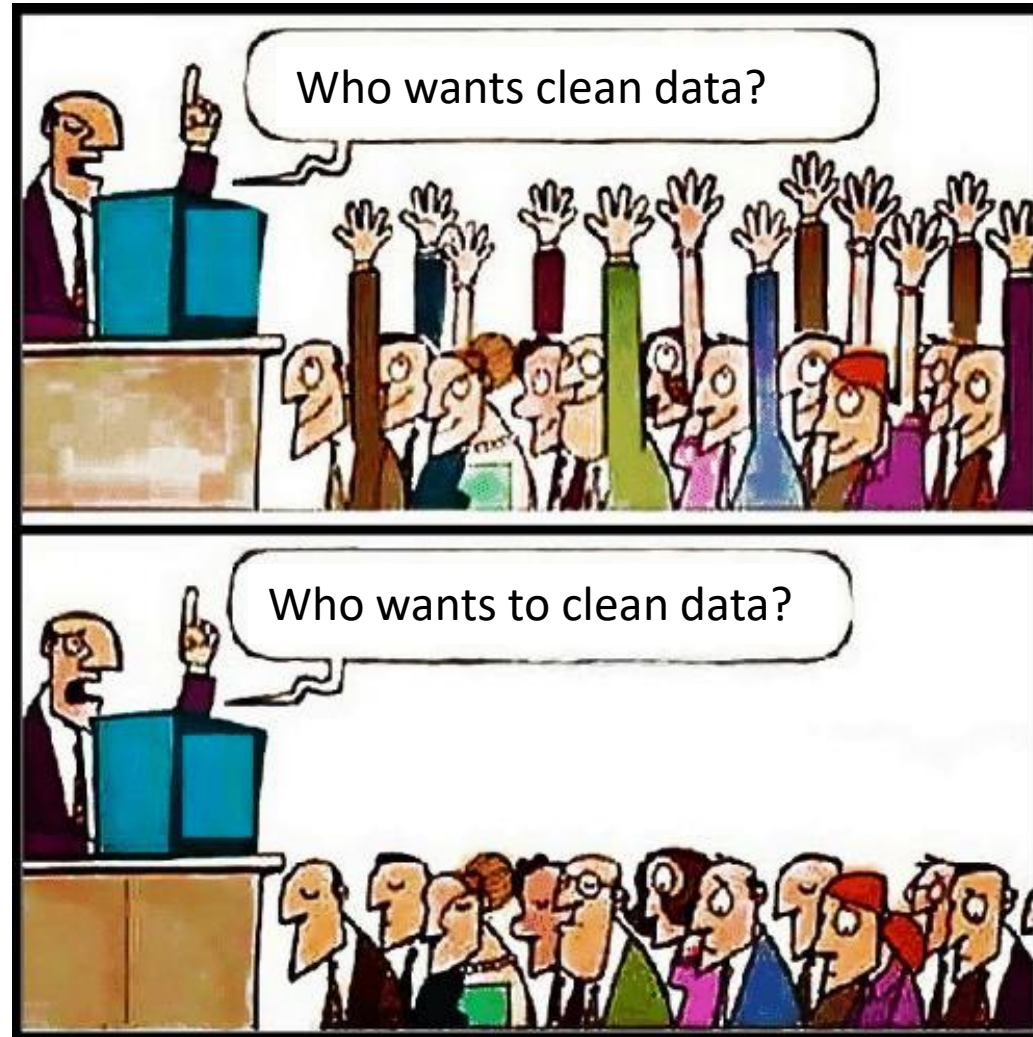


TO-BE: SAP S/4 HANA
Scenario 1: without cleansing

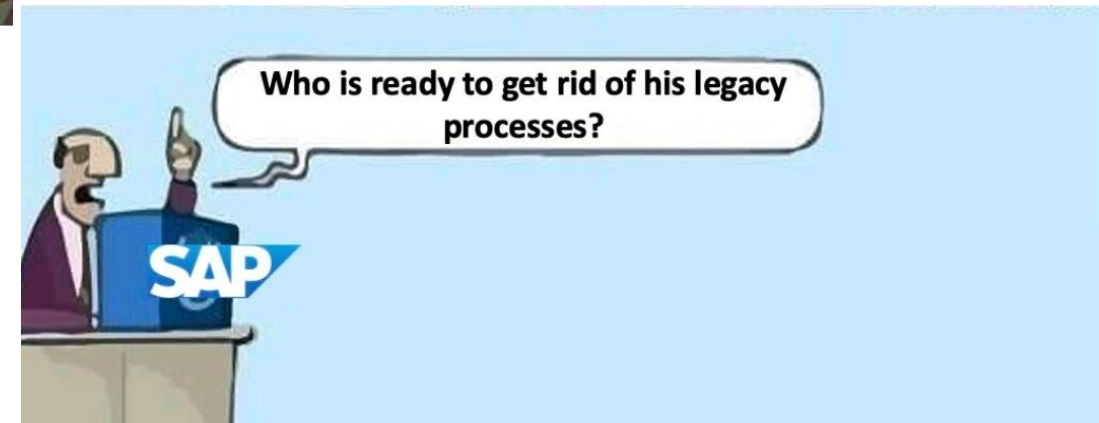


TO-BE: SAP S/4 HANA
Scenario 2: with cleansing

2c) Data cleansing: who/how?



3a) It is all about change management



3b) Don't forget your business users



Key Points to Take Home

- Improving starts with:
 - Understanding your business processes
 - Transparency provided by operational + actionable KPIs (facts)
 - People motivated to learn and improve and take ownership
 - Angles for SAP is high value 'asset' for companies that consider their SAP ERP system as the 'single version of the truth'
- Data quality is key for having:
 - Correct planning (forecasting, MRP)
 - Efficient and reliable execution
 - Facts you can trust (reporting)
- Software is just enabling, but organizational culture is key for real 'change'

Where to find more information

- <https://insightsoftware.com/angles-for-sap/>
 - Transform SAP Data into Actionable Insights
- <https://insightsoftware.com/customer-stories/morgan-foods-international/>
 - Customer Story: Morgan Foods International
- <https://sapinsider.org/webinars/get-a-grip-on-your-internal-and-external-supplier-performance-magnitude/>
 - Webinar On-Demand: How to Optimize your SAP Supply Chain Performance
- <https://insightsoftware.com/resources/supply-chain-selfcare-how-to-measure-improve-your-sap-data-quality/>
 - Webinar On-Demand: How to Get a Clean, Up-To-Date SAP ERP System without Pollution

Stop by Booth and learn more!

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Richard den Ouden

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Please remember to complete
your session evaluation.



SAPinsider.org

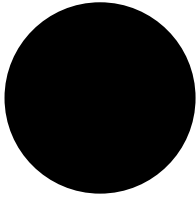
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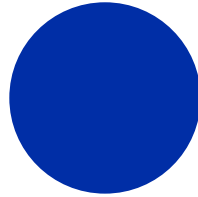
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SAPinsider Color Palette

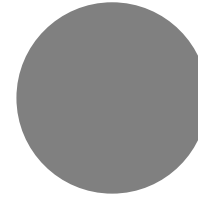
Primary



• Black #000000



Navy Blue #002EA6



Gray #808080

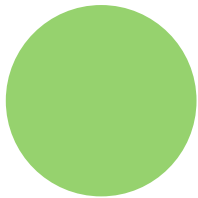


Blue Tint #EFF3F9

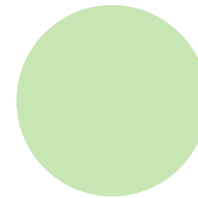
Secondary



Bright Blue #24B0FF



Green #96D26E



Green Tint #C8E6B4

Icons

