

WORK SAMPLE — ANONYMISED

DATA QUALITY RECOVERY & DATA MANAGEMENT BLUEPRINT

DOMINIQUE CORRADI, DATA WORKSTREAM LEAD · JUNE–DECEMBER 2021
EXTRACTS OF THE 7TH SOUNDING BOARD (16 SEPT 2021) AND THE 8TH STEERING COMMITTEE (25 OCT 2021)
OF A B2B COFFEE BUSINESS'S ECOSYSTEM PROGRAMME ACROSS EIGHT EUROPEAN MARKETS

CASE SUMMARY — PROBLEM

- Eight markets were independently cleaning customer, contract, machine, asset and receivables data using inconsistent issue lists and progress measures.
- By mid-July, 47–72% of relevant data-quality issues in Belgium, Germany and the Netherlands remained unanalysed, while only 0–24% were landed.
- The backlog exceeded 30 FTE-years and approximately €2.2 million in one-off effort.

CASE SUMMARY — ACTION

- Established a central issue database, common seven-status funnel, three comparable KPIs, country top-15 priorities and shared impact categories.
- Defined responsibilities across country data squads, DevOps, business process owners and permanent data governance.
- Designed a six-component data management blueprint, 2022 target organisation and handover criteria; coordinated country leads and presented the approach at each sounding board and steering committee.

CASE SUMMARY — RESULT

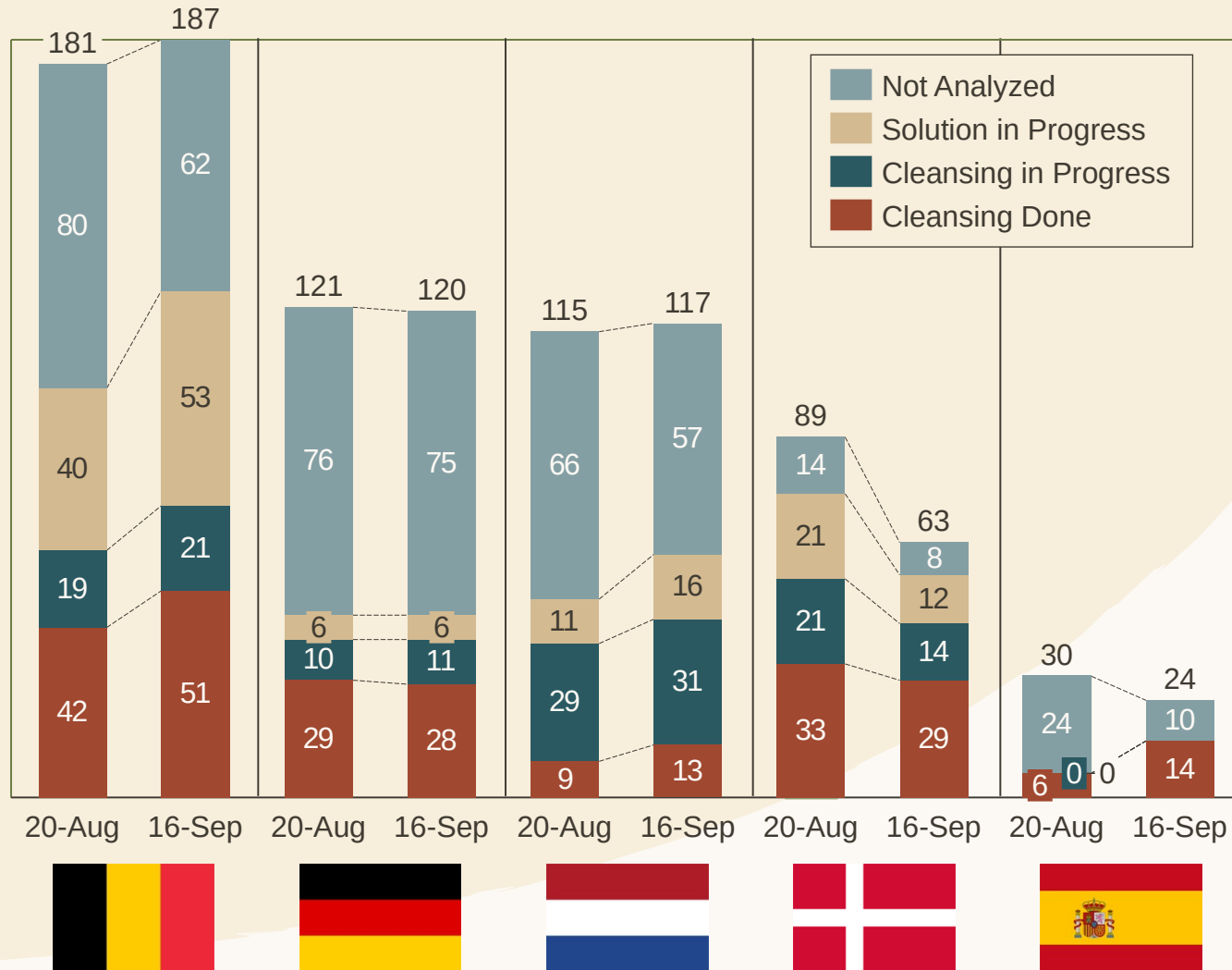
- By September, 81 shared issues had solutions in place, with an estimated threefold acceleration from reusable cross-country solutions; Belgium, the Netherlands and Denmark were on track for Q4 completion.
- The blueprint and 2022 organisation were ready, cluster roles were budgeted or planned, and programme complaints per order fell 36% by September, after a 41% January-to-June reduction.
- Handover risks remained around 2022 cleansing funding, Q1 continuity, key resources in Germany and Spain, pending global leadership, and measurement limited to issues rather than records.

7TH SOUNDING BOARD ECOSYSTEM IMPROVEMENT

PART 1—7TH SOUNDING BOARD, 16 SEPTEMBER 2021: DATA CLEANING AND DATA MANAGEMENT BLUEPRINT



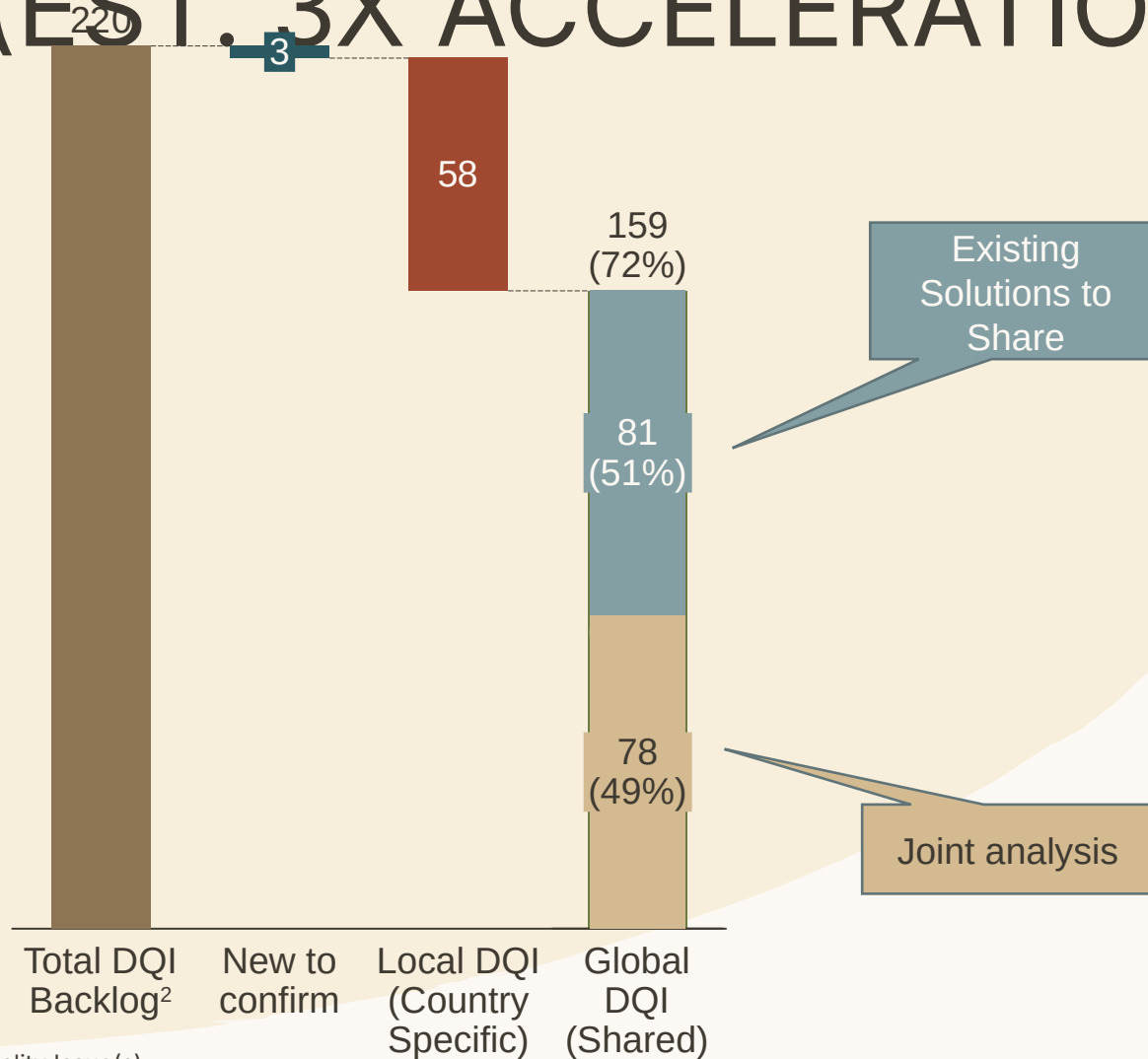
ANALYSIS AND SOLUTION DEFINITION REMAIN THE BOTTLENECK FOR MOST COUNTRIES AND CAN BE ACCELERATED THROUGH GLOBAL COLLABORATIONS



- **Bottleneck on analysis and solutioning activities** in Belgium prevent full deployment of Cleansing Squads
- Belgium and Netherlands have **maintained the pace of analysis work** during holidays,
- Germany delivered limited progress due to **resource tension** with other activities (UAT...)
- Denmark has already addressed c. 70% DQI¹ however the **September target is not confirmed**
- Spain is primarily focused on **DQI related to physical machine location**

Numbers and analysis are based on weekly reports provided by countries

LEVERAGING SYNERGIES BETWEEN COUNTRIES ENABLES STEEP ACCELERATION OF SOLUTION DESIGNS (EST. 3X ACCELERATION)

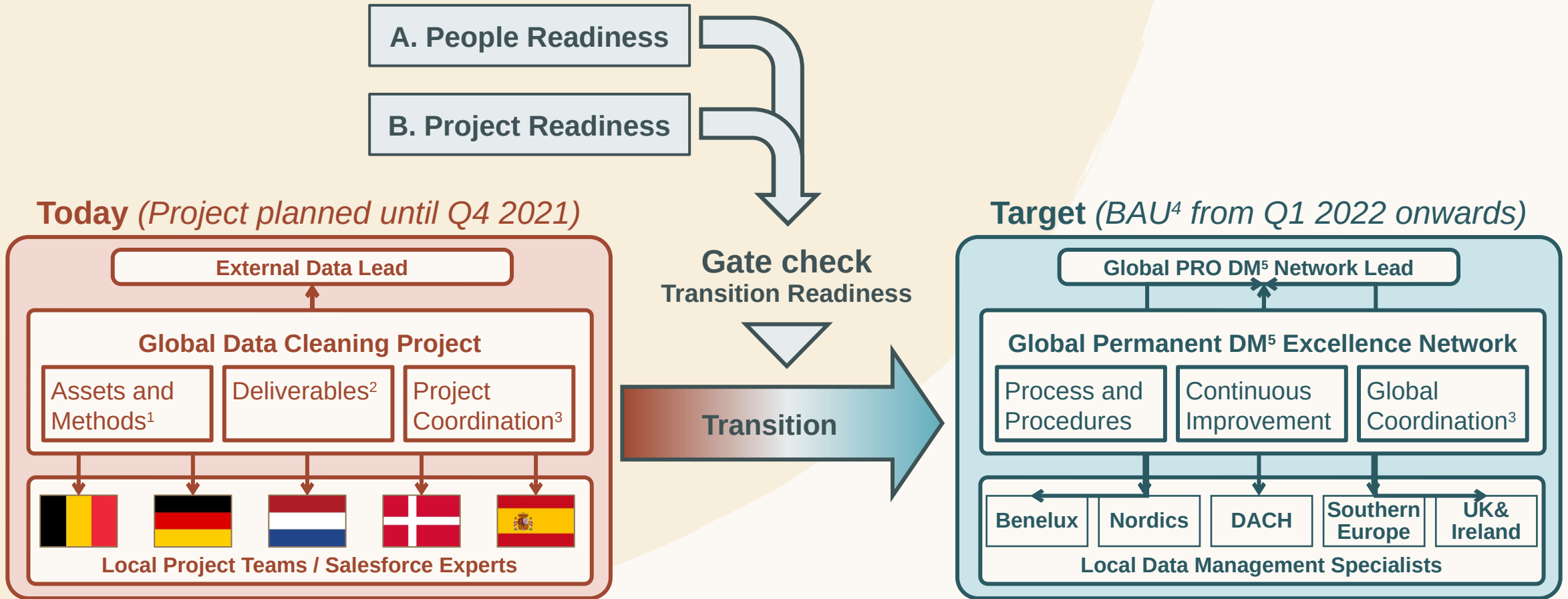


(1) Data Quality Issue(s)
(2) Duplicates removed

Numbers and analysis are based on weekly reports provided by countries

- 72% DQI are shared between 2 or more countries, enabling **strong productivity gains through global collaboration**
- **81 shared DQI (51%) already have solutions in place** that should be considered for reuse
- 78 DQI still to analyze to define solutions – **coordination critical to avoid duplicate effort**
- 159 Global DQI are affecting c. 3 countries in average and global synergies **enable to deliver x3 acceleration** for solution definition (*i.e. Define solution once, use Many*)

HAND-OVER OF THE DATA CLEANING PROJECT KNOWLEDGE WILL ENABLE A SWIFT TRANSITION TO THE PERMANENT ORGANISATION



(1) Shared Methods and Assets, Sharepoint, Global DQI Repository
(2) DQI Cleansing Procedures, Root Cause Analysis, Reports
(3) Global Project Governance

(4) Business as usual
(5) Data Management

BACKUP: WE HAVE DEVELOPED A TRANSITION READINESS DASHBOARD



A. People Readiness

Permanent Data Management Specialists¹ are hired and onboarded

1. Project Team hand-over is completed

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B. Project Readiness

Risk assessments are completed for remaining DQI not analyzed
Solution is Defined for every DQI's with perceived impact
Cleansing squads are mobilized and up to speed
Permanent solution are initiated whenever necessary for closed DQI

1. Monitoring reports and procedures are in place for country DQI's

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AOP22 SETS THE FOUNDATIONS FOR SOPHISTICATED DATA DIAGNOSTICS, ADVANCED DATA ANALYTICS TO BE IMPLEMENTED IN PHASE III (2023)

	AOP 22			
	Today	Phase II 2022	Phase III 2023	TBD
	L1. Descriptive	L2. Diagnostic	L3. Predictive	L4. Prescriptive
	4 Stages of Data Analytics Maturity ¹			
Management	Steering on “lagging” indicators (Financial results)	Steering on “leading” indicators (KPI's)	Data-driven decision making (“push” from insights)	Scenario planning & forward-looking decision making (“pull” for insights)
Technology	Scattered landscape of data sources and reporting tools	Global BI tooling used on set of integrated systems	ONE BI platform to connect multiple data sources and set-up predictive models	Technology in house to move into natural language analytics, streaming analytics / AI
People	Ad hoc ‘Experts’ performing reporting activities based on their capabilities	Number of key resources dedicated to analytical activities identified as business analysts	Data scientist role fulfilled by certified and skilled resources and high degree of self-service for associates	Internal pool of analytics resources with a career path in field of analytics
Organization	Roles & responsibilities are ‘scattered’	Standardized blueprint of roles & responsibilities with central group resp. for BI	Central group of data scientists is formed	Central group of data scientists reporting into ‘independent’ function on C-level (CDO)
Data	Isolated bottom-up initiatives on data governance	Data governance driven from silos based on standardized ways of working	Enterprise-wide data strategy, governance model and harmonized way of working	Data is managed as an asset at an enterprise-wide level.

- The roadmap for enabling Data at the Professional division is **staged and progressive**, in line with standard Data Analytics Maturity Models
- Phase II** delivers a **Global Data Management Operating Model** and a **Global Data Product Portfolio** on a standard corporate-wide **Data Platform** shared across the Professional division (SAP Hana and PowerBI)
- Phase III** enables **data-driven governance** of the business and accelerate the deployment of **Advanced Analytics models**

(1) Src: Gartner Data Analytics Maturity Model, 2016 – consultant analysis

RECAP: FROM 2022, CLUSTERS ARE REQUESTED TO PROVIDE TWO RESOURCES TO ENROL INTO THE GLOBAL DATA ORGANISATION

AS DECIDED IN JULY



Data Management Specialist (x1)

To start: **Q1 22.**

Based: in an EcoSystem market

- Additional roles (or implementation timing) could be required depending on the amount of customer data to manage, its current quality, and the number of related customer complaints its inaccuracy generates.
- Seek insight from local Data Cleaning Squad.

****Alternatively:** markets can allocate the Data Management Specialist responsibilities to a named person/role within the current structure providing they are at least 0.5 FTE dedicated**



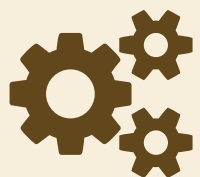
Business Performance Analyst (x1)

To start: **Q2 22.**

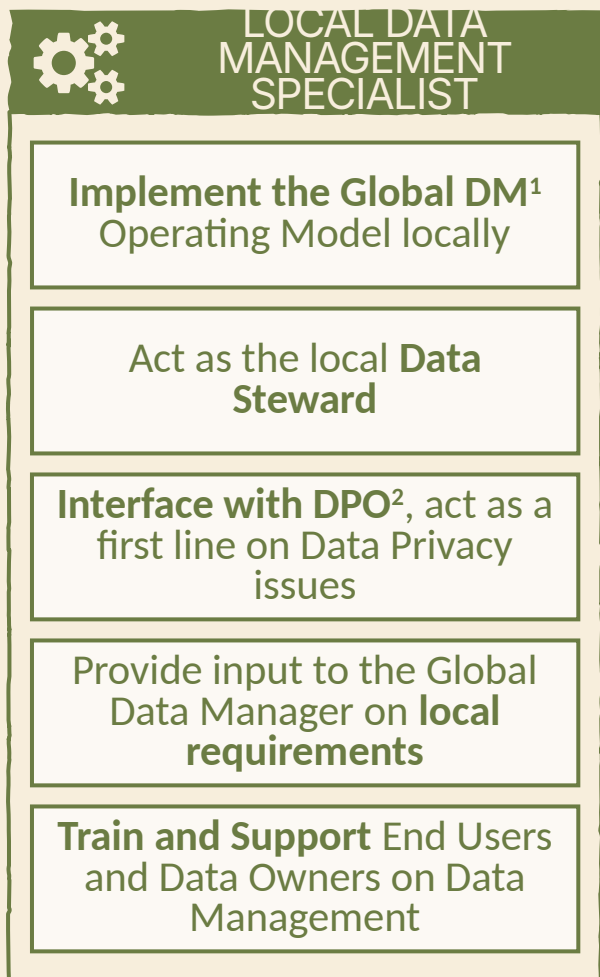
Based: in an EcoSystem market

- Additional roles (dedicated to either markets or even functions within a market) are optional - and will provide incremental return in correlation with the presence of:
 - Direct RTM model
 - Large machine park
 - Insourced technical service or availability of service data
 - Multiple available data pools
 - Power BI or SAP Hana or other automated data reporting tools connected to core systems (SAP, local ERP, etc)

Blueprint & Job Descriptions available via HRBPs



BACKUP: THE LOCAL DATA MANAGEMENT SPECIALIST



0.5-1.0 FTE / Cluster

- (1) Data Management
(2) Data Privacy Officer

*The Local Data Management Specialist executes and embeds the **Global Data Governance Model** locally and Maintain the internal processes needed in each department, to secure excellent customer data quality across key business systems (especially SalesForce)*

Responsibilities

- Act as the local data steward by implementing global processes to guarantee data quality/vitality in key business systems (especially the IT Ecosystem platforms of CRM, CPQ and field-service toolskSoft). Train end users and data owners on relevant aspects of all the above and provide support on utilisation of data for new usage cases.
- Detect, log and address data quality issues, either identified from non-compliance of data with existing rules or from other sources (issue raised by user, technical exceptions, etc) then perform root cause analysis to manage resolution.
- Escalate concerns, issues and problems with to business leaders where leadership intervention required.
- Act as a first point of contact on all data privacy issues for users and act as an ambassador for data privacy. Ensure data policy enforcement at all times, including but not restricted to privacy (GDPR), security, user access and access rights, data retention, opt-ins, and appropriate storage.
- Champion the importance of data management and vitality, and proactively communicate success stories.
- Provide input to the Global Data Manager on local requirements for all the above.
- Participate in developing best practice through the global Data Management community, sharing learnings and building skills



BACKUP: THE LOCAL BUSINESS PERFORMANCE ANALYST



LOCAL BUSINESS PERF. ANALYST

Promote and **drive adoption** of the Global Product Portfolio

Train and 1st line support the Global Product Portfolio

Gather new **initiatives to expand** the Global Product Portfolio

Distribution & Broadcasting

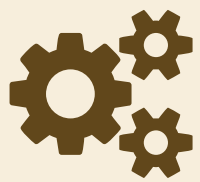
Ad Hoc Analysis & Data
Discovery within Market Units

1.0 FTE / Cluster

*The Business Performance Analyst is the hero of analytical insight and ensures everyone takes data-driven decisions to create business value
This role will continue to grow in importance and impact, year on year*

Responsibilities

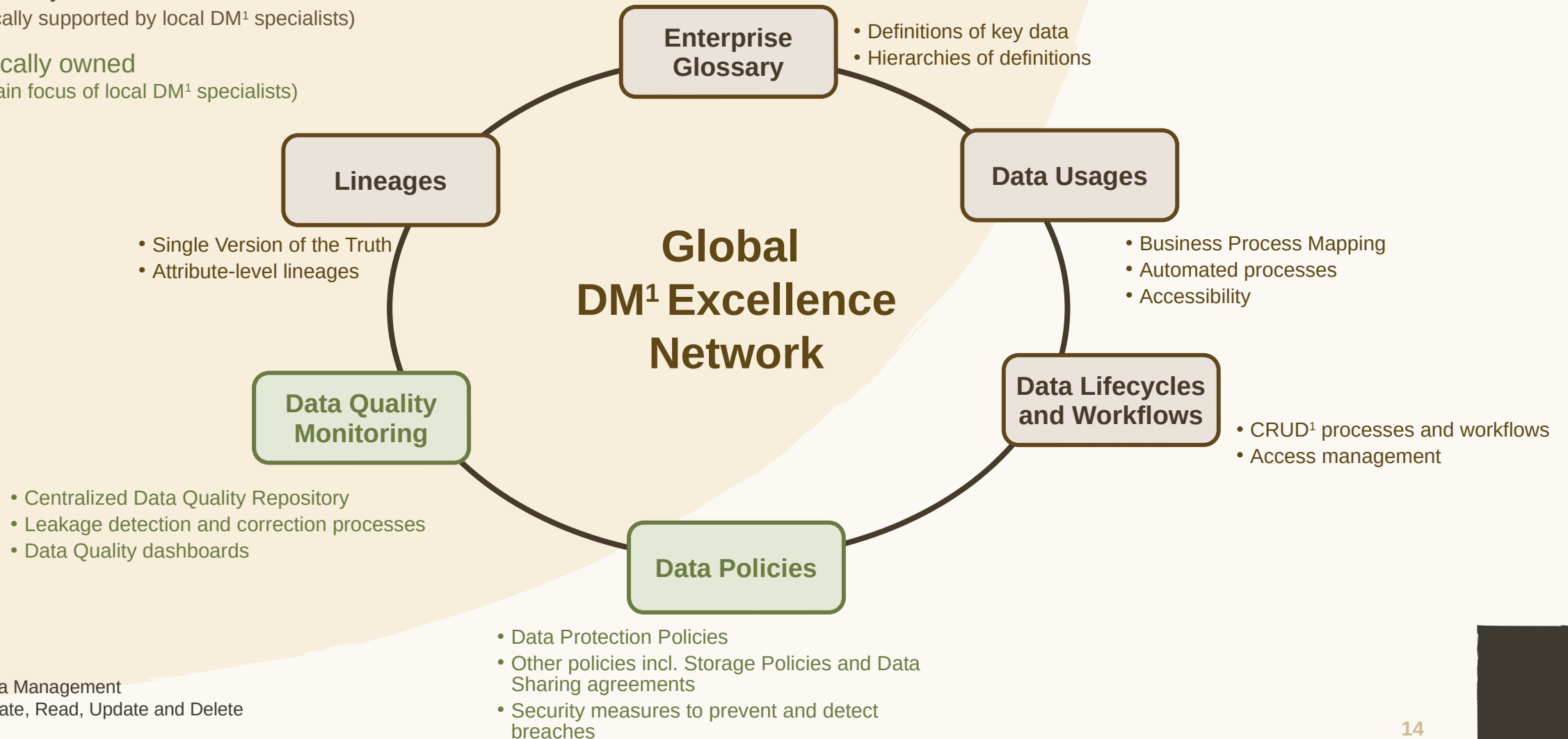
- Leverage analytical capabilities of the global product portfolio (Analytics Hub) and self-service tools.
- Create localized reports considering D&A architecture principles.
- Provide insights and guidance on business success drivers or areas for improvement.
- Continuously search for innovative ways to analyse data, and communicate insights in a user-friendly format for the target audience
- Participate in developing best practice through the global Analytics community, sharing learnings and building skills.
- Champion of data-driven business decisions and proactively communicate successes.
- Build analytical understanding with end users and inspire them to use reports and dashboards.
- Stay ahead of leading practices in analytics.
- For platform markets: Double hats as LBPO for Analytics
 - Local expert on Ecosystem platforms
 - Train and onboard end users to the Ecosystems
 - Local D&A point of contact for DevOps
 - Define new local requirements
 - Report and log incidents



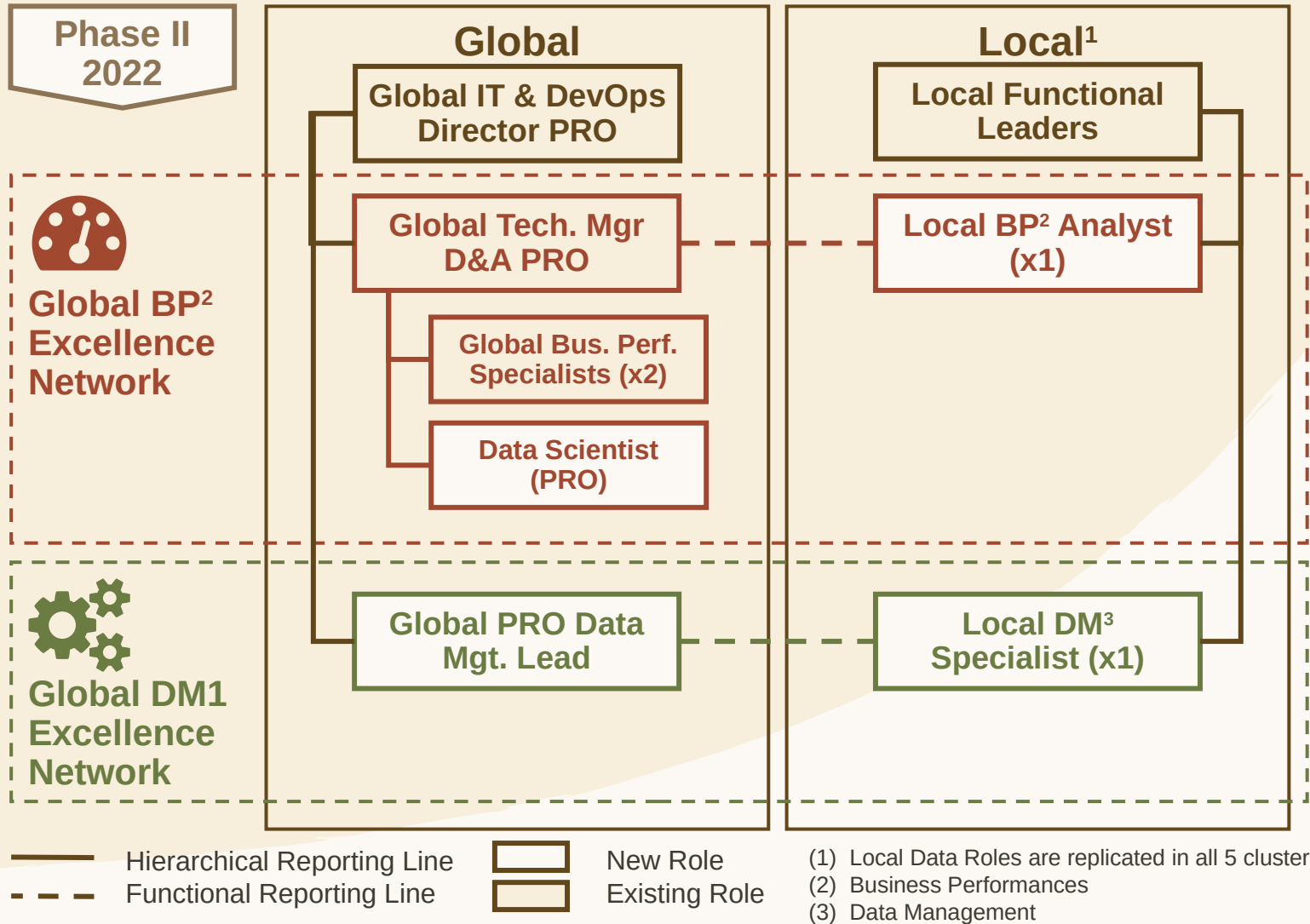
BACKUP: LOCAL DM¹ SPECIALISTS WILL BE PART OF THE GLOBAL DM¹ EXCELLENCE NETWORK

 Globally owned
(locally supported by local DM¹ specialists)

 Locally owned
(main focus of local DM¹ specialists)



THE SUGGESTED NEW GLOBAL DATA ORGANISATION WILL ESTABLISH PERMANENT GLOBAL DM³ AND BP² CAPABILITIES FROM 2022 (PHASE II)



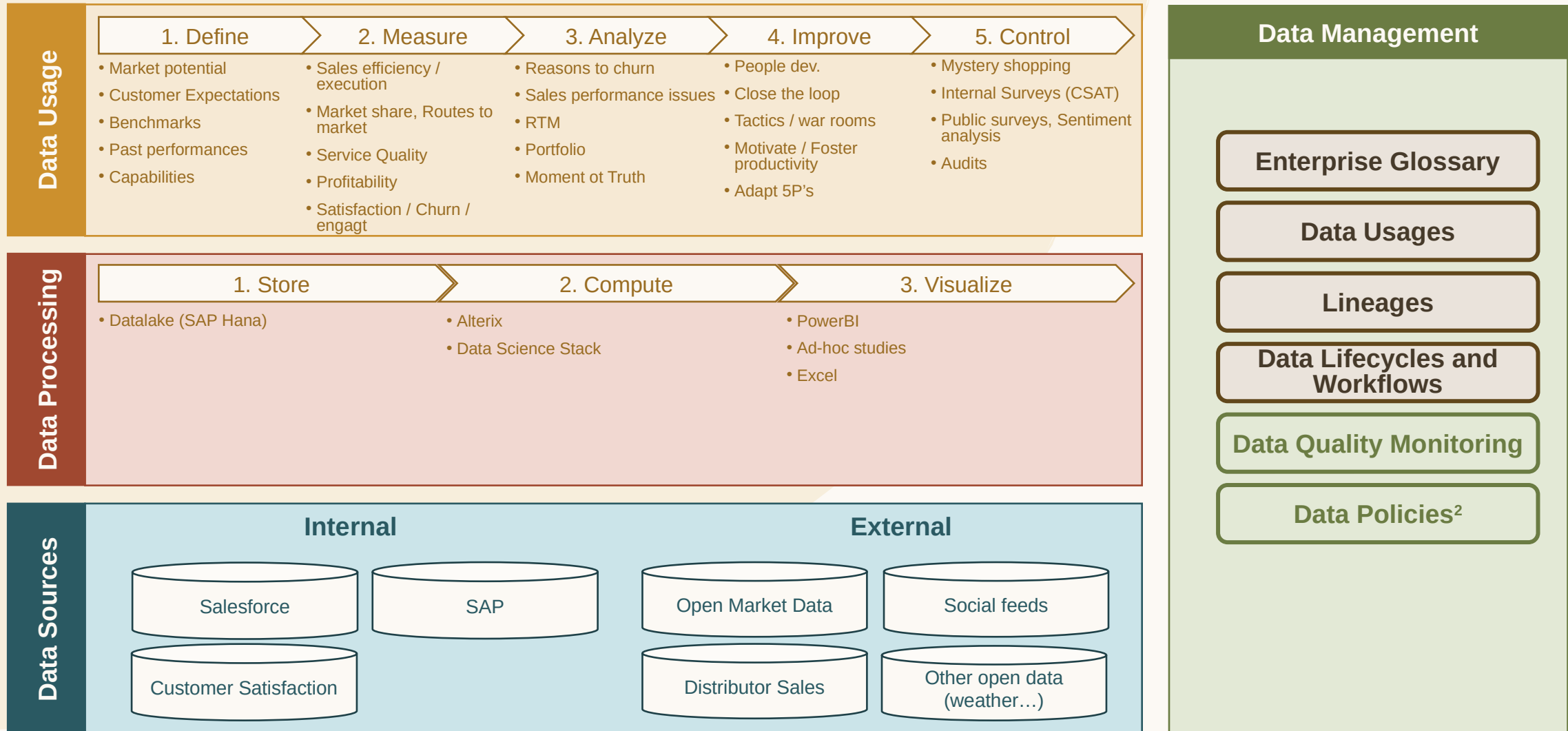
- **Global DM³ Lead (New)** drives the Global DM³ Excellence Network and give functional directions to local DM³ Specialists
- **PRO Data Scientist (New)** focuses on providing augmented analytics to the Data Product Portfolio
- **Global Tech Mgr D&A (existing)** drives the Global BP² Excellence Network and gives functional directions to local BP² Analysts
- **Global D&A CoE** provides expertise, architecture and method support

OUTLOOK: WE'RE CURRENTLY BROADLY CAPTURING INPUT TO HELP SHAPE OUR DATA AMBITION (FIELD WORK)

	Areas / Organization	Participants	Date
Central	0 President	Leader	To be scheduled
	1 Sales	Leader Leader Leader	9 th Sept, 8:30 9 th Sept, 11AM 16 th Sept, 17:30
	2 Equipment Operations	Leader Leader	8 th Sept, 14:00 To be scheduled
	3 Finance	Leader	9 th Sept, 16:00
	4 DevOps	Leader Leader (Digital BPO), Leader (CSAT)	10 th Sept, 3PM 13 th Sept, 12:30
	5 People Management	Leader	10 th Sept, 3PM
Markets	6 DACH	Leader Leader (Finance Control) Leader (Customer Care)	To be scheduled 10 th Sept, 16:00 To be scheduled
	7 Benelux	Leader	10 th Sept, 8:30
	8 Nordics	Leader	13 th Sept, 14:00
	9 UK& Ireland	Leader	8 th Sept, 16:00
	10 Southern Europe	Leader	To be scheduled

- Key business and functional leaders were interviewed on the the Professional division data ambition
- 3 questions was asked:
 - Current Missed opportunity due to lack of right data at the right time
 - Challenges faced in collection / visualization of data
 - Views on longer-term data usages/needs
- Great interest, enthusiasm and energy on data topics perceived during sessions
- Common patterns identified, despite heterogeneity of role of people interviewed

OUTLOOK: THE DATA AMBITION CAN BE DOCUMENTED IN A STRUCTURED WAY



(1) based on Lean 6-Sigma DMAIC Model, consultant analysis



8TH STEERING COMMITTEE ECOSYSTEM IMPROVEMENT

PART 2 — 8TH STEERING COMMITTEE, 25 OCTOBER 2021: STATUS, DATA CLEANING, 2022 DATA
ORGANISATION, DATA AMBITION

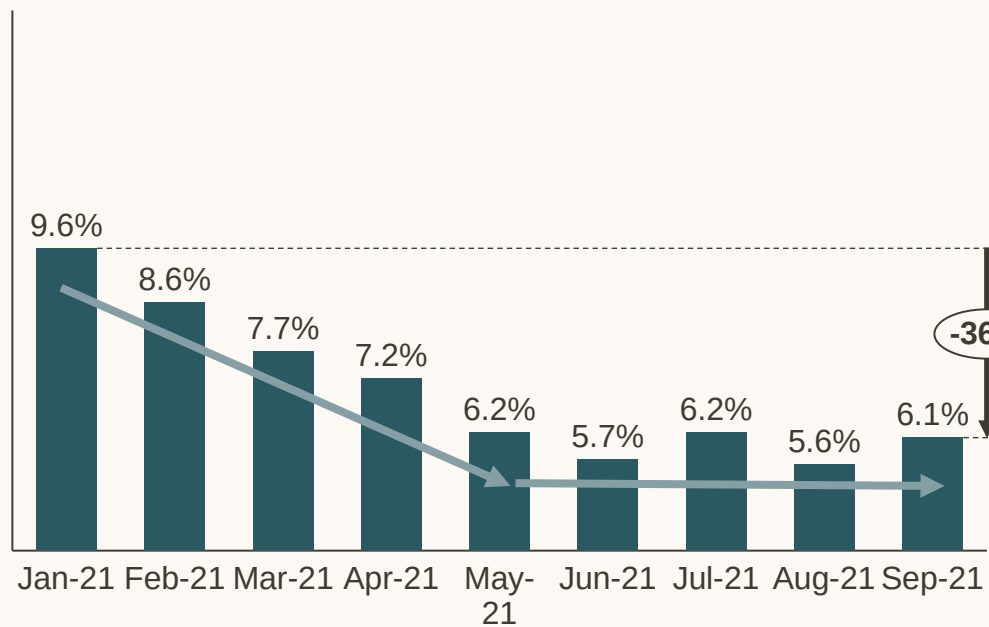
PROGRAM ON TRACK, SEVERAL WATCH-OUTS REGARDING COMPLAINTS, ARCHETYPE DEFINITION/USAGE, AND DATA QUALITY HANDOVER

Workstream	Status	Comments	Outlook/ Risks	
Program Management Office		Reduction of complaint intensity has stagnated since May		Need to monitor complaints development in Q4.
Business Simplification		Go-live of new UX, Contract Automation, Deal Calculation & Approval in BE, ES successful; Archetype roll-out underway		Final discussion about two Archetype 1 rules (multiple bill-to's, parent-child contracts)
Central Design/Development		User Acceptance Testing on track, go/no-go decision scheduled for the end of Sep		Some challenge
Belgium		Successful launch of new UX, Contract Automation, Deal Calculation & Approval		Discussions around proposal/offer creation, currently being managed by Belgian and QTC teams
Denmark		UAT successful; No change to plan for Q1 roll-out of UX, Contract Automation and Deal Calculation & Approval		No specific risks identified
Germany		Successful UAT; Archetype roll-out well under way; biggest hurdle will be moving to subcategory discounts (in Q1)		Moving from individual BPOs to list price + subcategory discounts still requires significant work until end of Q1
Netherlands		Successful UAT; few open points covered for scheduled UX go-live in Nov; archetype roll-out on track		No specific risks identified
Data Quality		Backlog cleaning and Governance work fully on track		Potential handover gap from data cleaning team to BAU/ permanent team in Q1
Clearing Data Backlog		On track for end of year completion, currently planning for handover to BAU		Working on how to bridge handover gap in Q1; capacity need from DevOps for some dashboards (Q4) and permanent fixes (Q1+)
Governance		Blueprint and org chart drafted, including migration and onboarding concept; data ambition captured		No major risks identified
Adoption		Work plan defined; successful support of new UX go live and training preparation		Limited time availability of key stakeholders needs to be managed
Confidence & Capabilities		Work plan developed; Accompanied new UX go live w/. communication (before/after), and with training template		UX post-launch survey planned for end of October
Active Management		BPO network interviews 50% complete; data issue for learner journey tracking solved		No major risks identified (other than availability of key stakeholders)

COMPLAINT INTENSITY AND % ACTIVE CUSTOMERS WITH COMPLAINTS BOTH STAGNATED OVER SUMMER FOLLOWING A STEEP REDUCTION BETWEEN JANUARY AND MAY

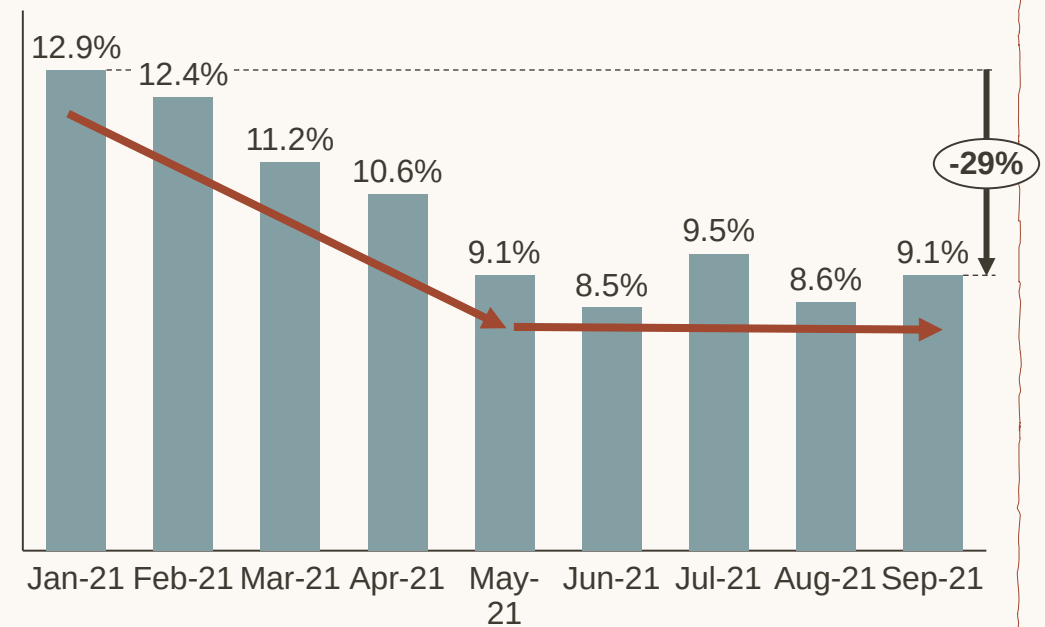
SHARE OF ORDERS CAUSING A COMPLAINT WAS REDUCED BY 36%

opened complaints / # of orders
(All platform countries, Jan-21 – Sep-21)



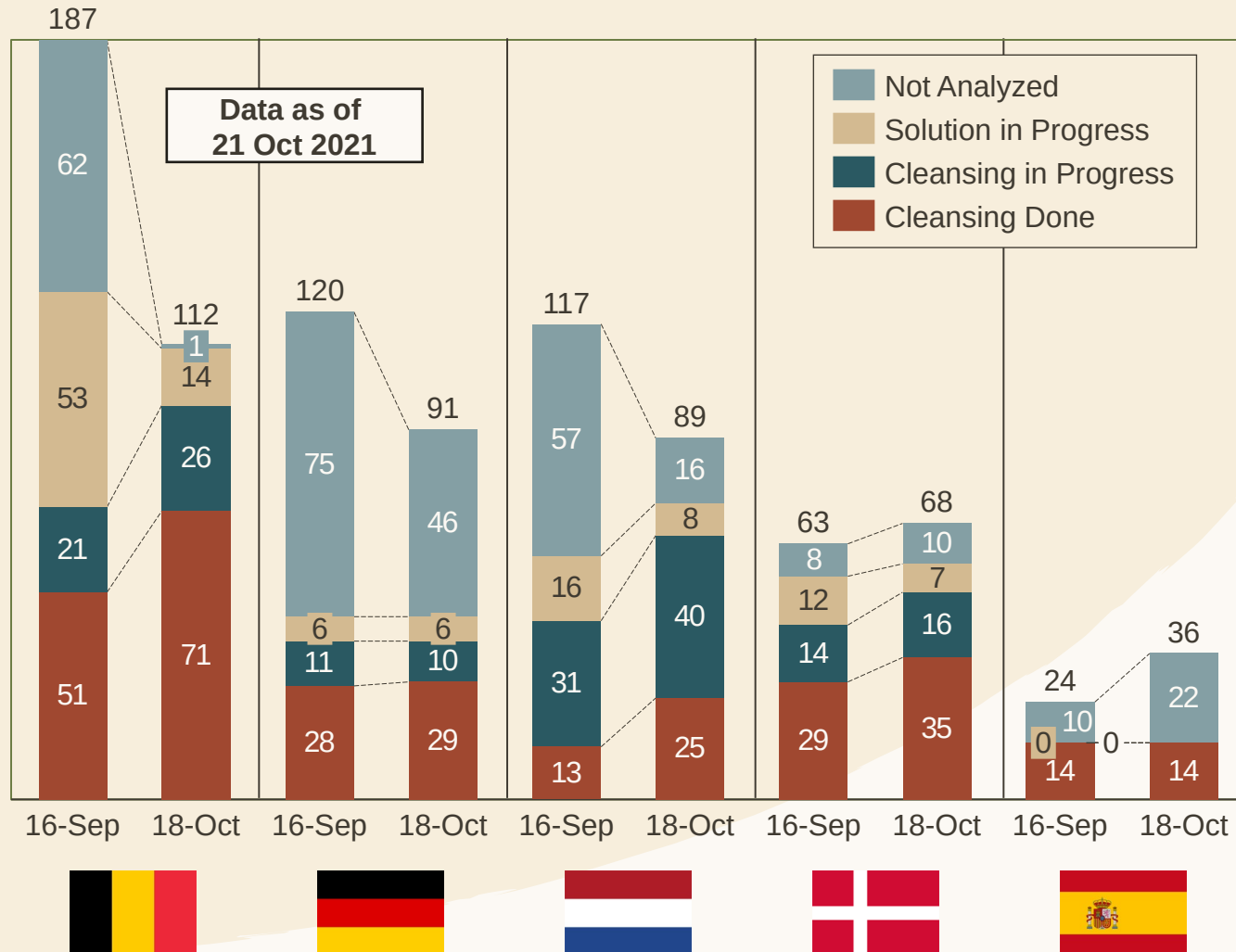
SHARE OF ACTIVE CUSTOMERS FILING A COMPLAINT WENT DOWN BY 29%

of distinct customers complaining / # of active customers¹
(All platform countries, Jan-21 – Sep-21)



Note: The reduction level for complaints / orders (-36%) was larger than for distinct customers / active customers (-29%). A driver of this may be that multiple orders in a month will only result in a single invoice for customers with collective billing – meaning that often only a single complaint would arise for multiple orders

THE OVERALL PROJECT IS PROGRESSING ACCORDING TO THE PLAN AND WITHIN THE PLANNED BUDGET



- **Significant progress** was achieved in Belgium, Netherlands and Denmark, who are securing the Q4 completion targets
- All countries are **delivering within their planned budgets** (no overrun anticipated for 2021) – as a reminder, there will be no central budget allocated to data cleansing activities in 2022
- **Germany and Spain have faced a slow-down** of cleansing activities due to the absence of key resources

Numbers and analysis are based on weekly reports provided by countries

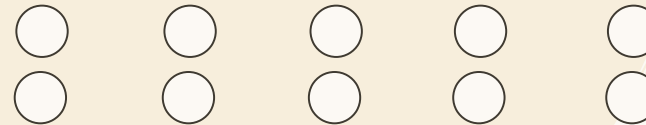
MAIN FOCUS HAS RECENTLY SHIFTED TO ENSURING A SMOOTH TRANSITION TO BAU¹ AND THE FUTURE PERMANENT DATA MGMT. TEAM



A. People Readiness

Permanent DM² Specialists are hired and onboarded

1. Project Team hand-over is completed



B. Project Readiness

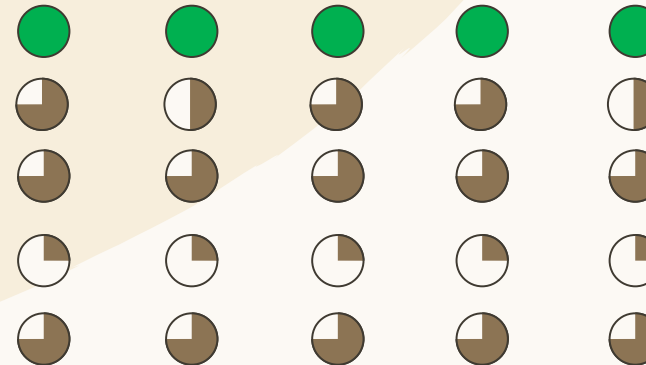
Risk assessments are completed for remaining DQI³

Solution is Defined for every DQI's³ with perceived impact

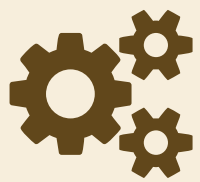
Cleansing squads are mobilized and up to speed

Permanent solution are initiated for closed DQI³

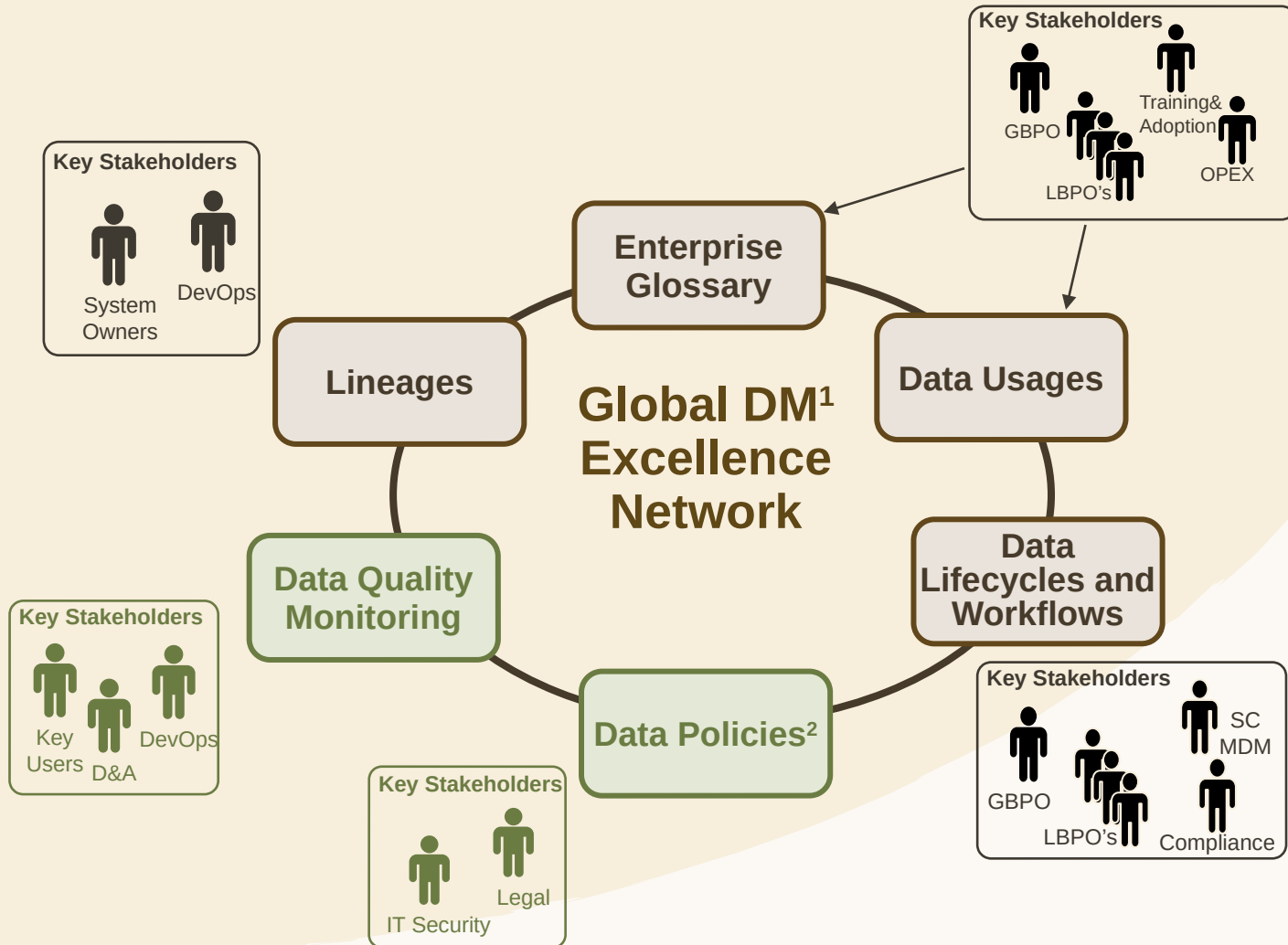
1. Monitoring tools are in place for country DQI's³



- The **recruitment and onboarding** of the Global and Local DM¹ Specialists needs to be planned ASAP to enable a smooth transition and knowledge transfer
- Countries are progressing well on the resolution of DQI³ and on track for Q4 completion, with **some uncertainties in Germany and Spain**
- The **definition and planning of the identified permanent fixes** are being initiated to leverage the knowledge of the existing project team; implementation of the fixes is more time flexible



THE TO-BE DATA MANAGEMENT EXCELLENCE NETWORK WILL CONNECT WITH THE PRO ECOSYSTEM AND KEY STAKEHOLDERS



- The Integration of the Global DM¹ Excellence Network with existing functions is a **key success factor**
- Most of the **connections are already established** and tested on real-life cases (e.g. 4-eyes duplication exception management workflow)
- First experiences build on positive feedback of the **data cleansing global collaboration**

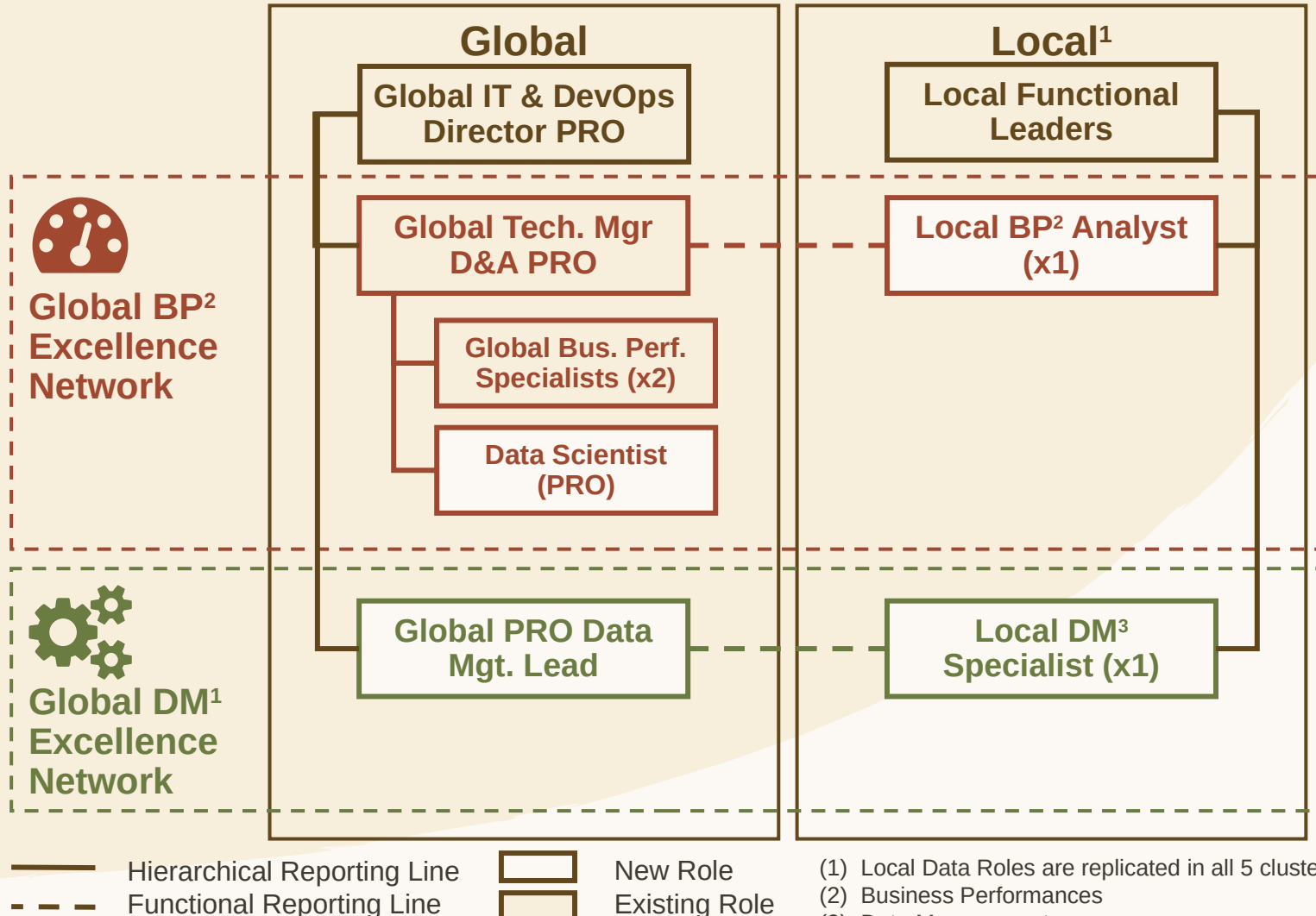
Global focus
Local focus

(1) Data Management

(2) Data Policies and Compliance connection will be finalized after Sounding Board communication

FROM 2022, THE GLOBAL DATA ORGANISATION WILL HAVE NEW PERMANENT GLOBAL DATA MGMT. AND BUSINESS PERFORMANCE MGMT. CAPABILITIES

AS DECIDED IN SEPTEMBER



- **PRO Data Scientist (New)** focuses on providing augmented analytics to the Data Product Portfolio
- **Local BP² Analyst (New)** drives the adoption of the Global Dashboard Portfolio
- **Global DM³ Lead (New)** drives the Global DM³ Excellence Network and give functional directions to local DM³ Specialists
- **Local DM³ Specialist (New)** local data stewardship, incl. data quality and compliance rules enforcement

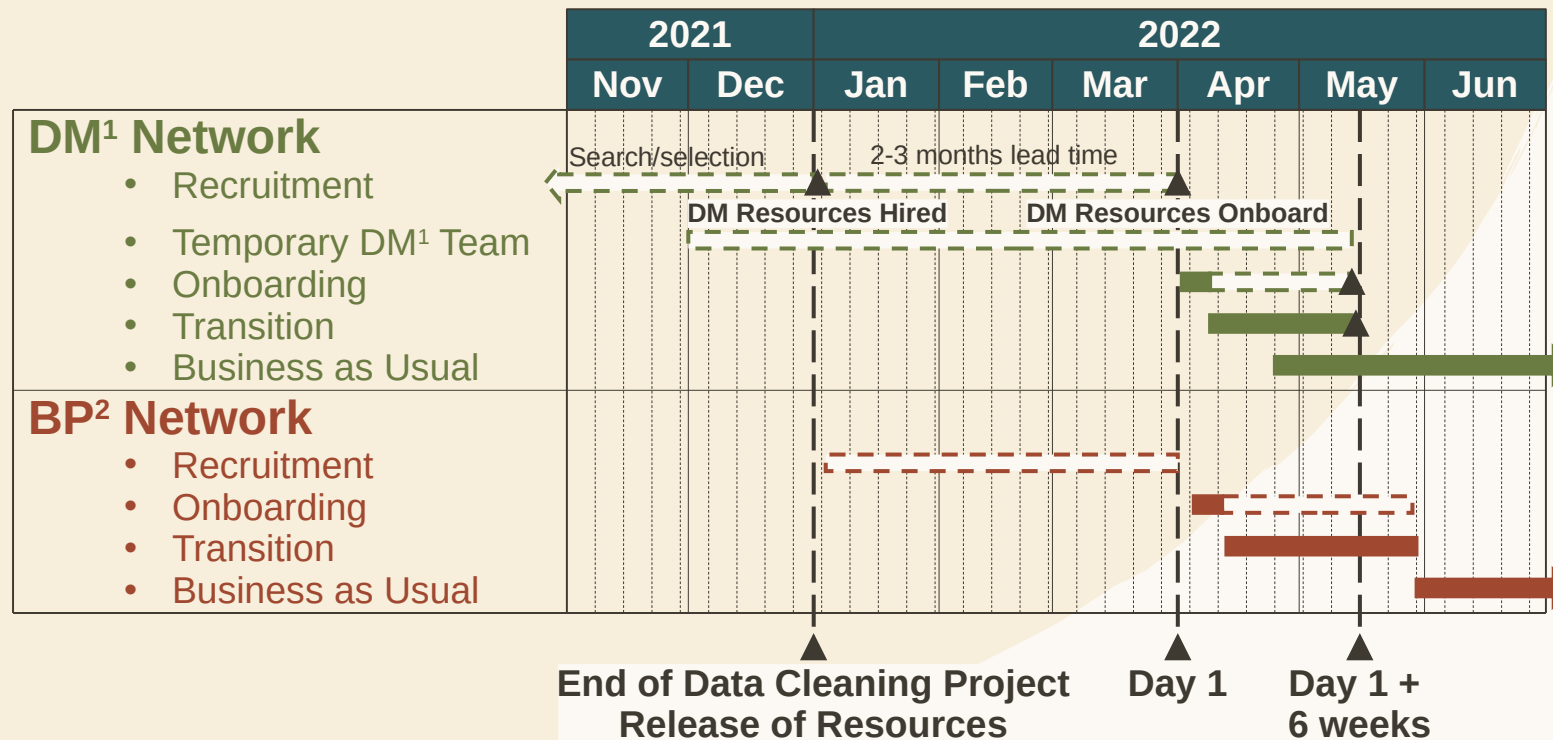
THE DEPLOYMENT OF THE GLOBAL DATA ORGANISATION HAS ALREADY BEEN KICKED OFF

	Global	Benelux	Nordics	DACH	Southern Europe	UK& Ireland
 Global DM¹ Excellence Network (Q1 22)	 Global DM Lead (decision pending)	 ? ³ Local DM Specialists (existing) (NL: ? ³ , BE: 0)	 1.5 Local DM Specialists budgeted (tbc) (Dk: 1, No: 0.5)	 2 Local DM Specialists budgeted (Ger: 1, Aut: 1)	 Local DM Specialists tbc	 Local DM Specialists budgeted (tbc)
 Global BP² Excellence Network (Q2 22)	 2022 Data Scientist role (decision pending) (internship proposed)	 +1 Local BP Analysts budgeted (NL: ? ³ , BE: 1)	 0.8 Local BP Analysts budgeted (Nordics: 0.8)	 1 Local BP Analyst budgeted (Ger: 1)	 1 Local BP Analysts budgeted (SP: 1)	 0 Local BP Analyst (tbc) (UK: 1)
					tbc	

- (1) Data Management
 (2) Business Performances
 (3) Number to be confirmed, resources already exist in NL

A TRANSITION PLAN WILL ENSURE KNOWLEDGE ACQUIRED DURING THE DATA CLEANING PROJECT IS PRESERVED, AND PASSED ON TO THE PERMANENT TEAMS

Tentative Masterplan – to be updated

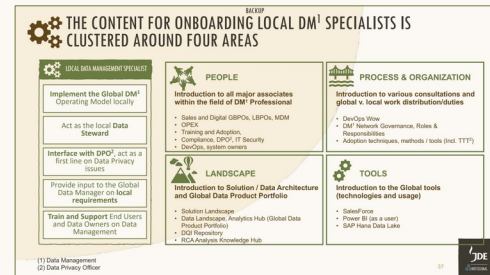
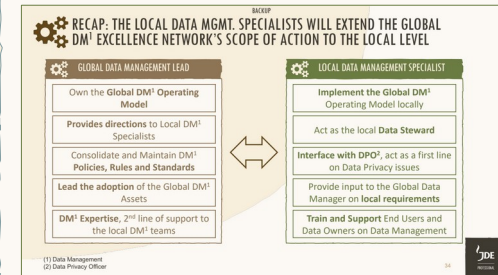


- Wealth of Experience acquired over the Data Cleaning Project is a **High Value Data Management Asset** for the Group that needs to be preserved
- **Temporary DM Team** to be appointed for continuity of operations and knowledge transfer
- A **Global DM Lead** to be appointed at the earliest to secure the transition

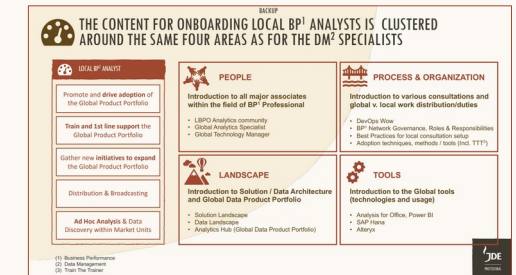
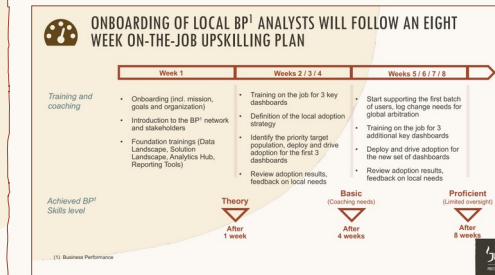
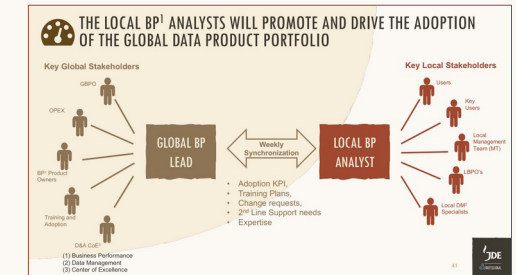
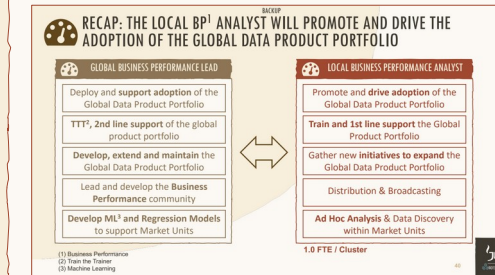
DM¹ Network up to speed
Temporary DM¹ Team re-deployed

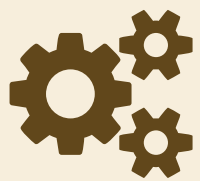
WE HAVE DEFINED JOB DESCRIPTIONS, KEY INTERFACES, AND TRAINING/ ONBOARDING OUTLINES AND CONTENTS FOR THE NEW ROLES

MANAGEMENT LEAD/ LOCAL DATA MANAGEMENT SPECIALIST ROLES



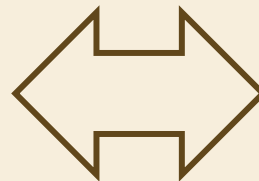
PERFORMANCE LEAD/ LOCAL BUSINESS PERFORMANCE ANALYST ROLES

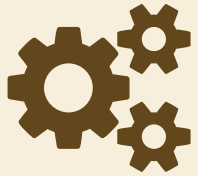




RECAP: THE LOCAL DATA MGMT. SPECIALISTS WILL EXTEND THE GLOBAL DM¹ EXCELLENCE NETWORK'S SCOPE OF ACTION TO THE LOCAL LEVEL

BACKUP

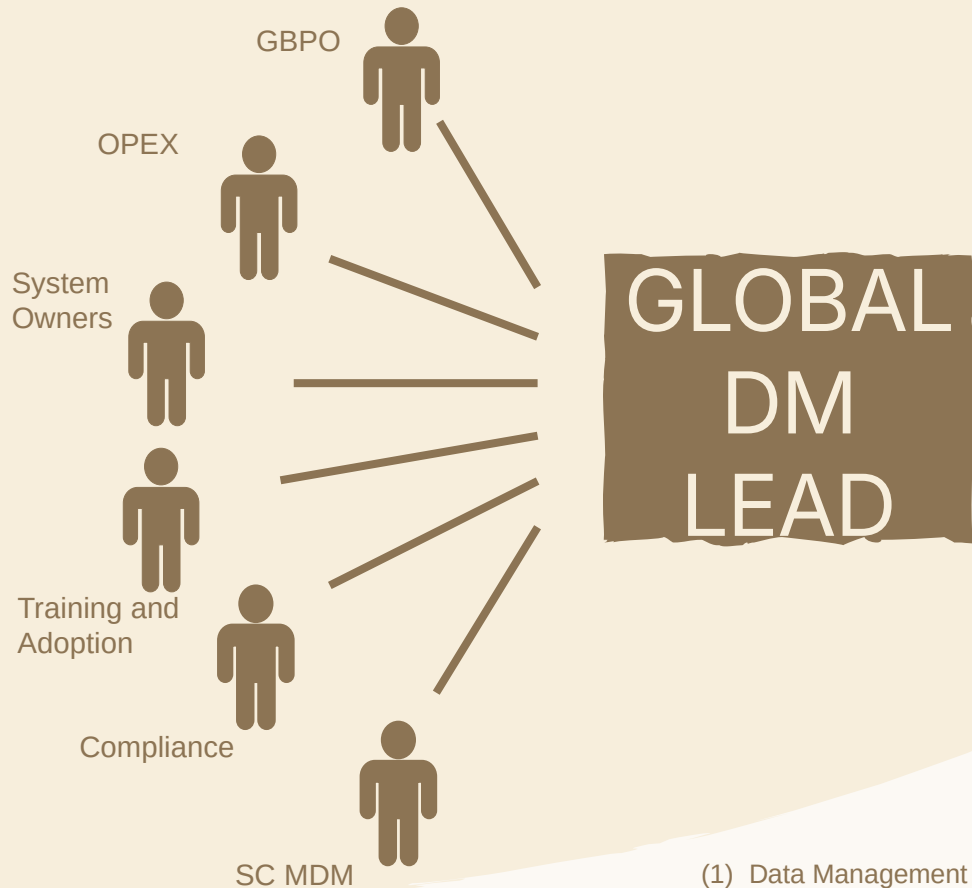




BACKUP

THE LOCAL DM¹ SPECIALISTS WILL REPORT WEEKLY ON THE PROGRESS OF LOCAL DATA ISSUES, AND COORDINATE WITH GLOBAL ACTION PLANS

Global Stakeholders



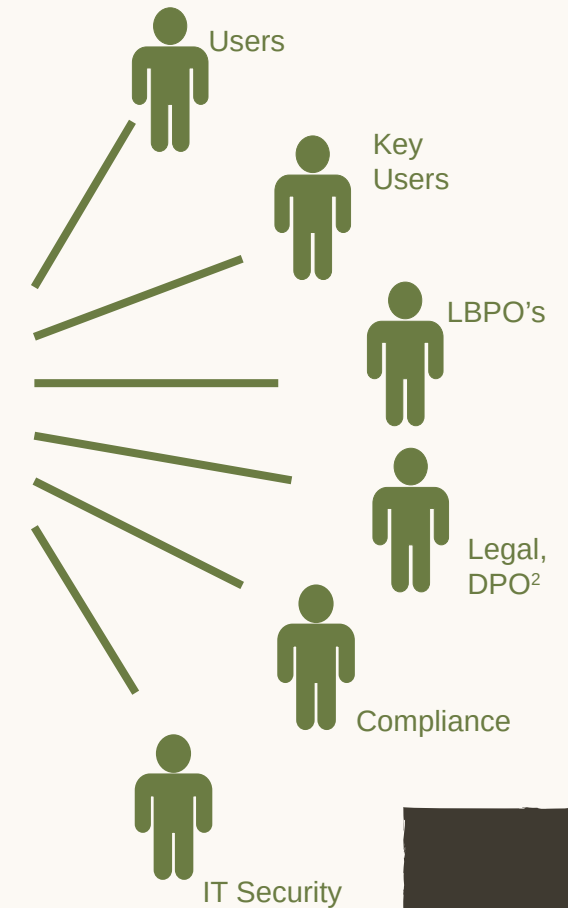
GLOBAL
DM
LEAD



- DQI³ Backlog,
- Action Plans,
- Service requests
- 2nd Line Support needs
- Root Cause Analysis for New DQI³

- (1) Data Management
(2) Data Privacy Officer
(3) Data Quality Issues

Local Stakeholders



LOCAL
DM
SPECIALIST

DATA AMBITION

DISCUSSION UPDATE

WE INTERVIEWED KEY PRO LEADERS ABOUT THEIR DATA AMBITIONS, AND CAPTURED AND PRIORITIZED¹ COMMON DATA NEEDS

Central	0	President	Leader	23 rd Sept
	1	Sales	Leader Leader	9 th Sept 16 th Sept
	2	Equipment Ops	Leader	8 th Sept
	3	Finance	Leader	9 th Sept
	4	DevOps	Leader (Sales and Mkt BPO) Leader (Digital BPO)	18 th Oct 13 th Sept
	5	Market Research	Leader	10 th Sept
Markets	6	DACH	Leader (Finance Control) Leader (Customer Care)	10 th Sept 2 nd Nov
	7	Benelux	Leader	10 th Sept
	8	Nordics	Leader	13 th Sept
	9	UK& Ireland	Leader	8 th Sept
	10	Southern Europe	Leader	4 th Oct

- The Hygiene Factor:** reliable data, made available through standard and simple dashboards
- Multidimension Navigation:** Slice and dice along predefined analysis dimensions
- Call-to-action:** prompt next best action (rule-based) incl. contract renewal reminder, close the loop and monitor impact
- Event Anticipation (v. reaction):** weak signal detection (churn, machine failure...)
- Business Planning:** set targets, review routes-to-market, optimize resource allocation and efficiency
- Leadership Board:** identify and disseminate key best practices, drive execution
- Know-your-customer:** eliminate blind-spots , capture customer needs and preferences
- Customer Engagement:** detect sweet spots and drive satisfaction at key Moment of Truth
- Behavior Analytics:** leverage connected machines and other sensors to understand behaviors and usages
- Market tracking:** assess market potential and benchmark the Group, define data-based growth strategies

Higher
Priority



Lower
Priority

(1) ordered by priority, highest to lowest

SEVERAL DATA INITIATIVES AND USE CASES WERE CAPTURED AND STRUCTURED IN LINE WITH THE DATA CAPABILITIES DEVELOPMENT PLAN FOR THE PROFESSIONAL DIVISION

Build Business Analytics Capabilities

(AOP22)

1

The Hygiene Factor

- **Improve Data Reliability**, with the deployment of the DM Networks
- **Make Data Available / Accessible**, with the deployment and adoption of the Global Dashboard

2

Multidimension Navigation

- Setup, deploy and maintain the **Global Business Glossary** (DM Network)
- Standardize the dimensions in the **Global Dashboards**

3

Call-to-Action

- Leverage the SF Rules Engine to **trigger Next Best Action** (incl. Contract Renewal, Cust. call...)
- Leverage Advanced Analytics (incl. A/B Testing and descriptive stats) to monitor the **Impact of Targeted Actions**

4

Event Anticipation

- **Develop Machine Learning Capabilities**, to build key models, incl. Churn, Service Planning and Friction Reduction
- **Deploy Weak Signal Detection**, to anticipate on unwanted events

5

Business Planning

- Leverage Machine Learning technologies to **refine business financial targets** and **optimize routes-to-market** and resource allocation

6

Leadership Board

- Leverage ML to **Detect Best Practices** in all Sales and Service activities
- **Deploy identified best practices** and monitor execution and impact

Data Science

(AOP23)

7

Know your Customer

- **Capture customer insights** from multiple sources (Customer Service logs, surveys, e-reputation, direct feedback...)
- **Text Mining**, incl. Classification and Sentiment Analysis

8

Customer Engagement

- Measure and Analyse **Customer Satisfaction** at each Moment of Truth (Digital and Physical Journeys)
- **Close the loop**

9

Behavior Analytics

- Leverage connected data to **profile usage patterns and customer behaviors**
- **Influence usages** through targeted actions
- **Predictive maintenance**

10

Market Tracking

- Market tracker
- Benchmarks
- Growth strategies

Open Data

(Beyond)

DATA SCIENCE (FROM 2023) : MACHINE LEARNING CAN IMPROVE PERFORMANCE BY EFFECTIVELY POINTING RESOURCES TO AREAS WITH GREATEST POTENTIAL

ILLUSTRATIVE

Step1: Train

Leverage statistical models to establish the Formula on a training dataset

Formula(Activity, Orders, Incidents, T&C...) = Churn Risk%

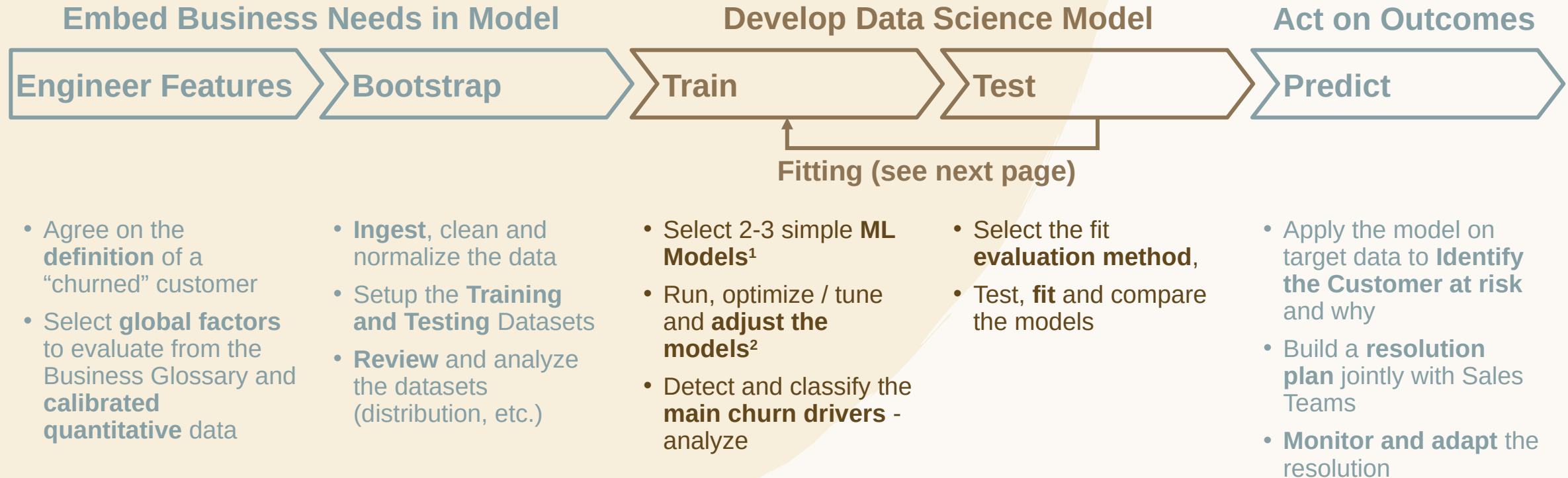
Step 2: Predict

Run the formula on the full customer base to identify the customer at risk

Formula(Full Customer Base) = Customer at Risk

TO ENSURE THE ACTIONABILITY OF THE OUTCOMES, DATA SCIENCE NEEDS TO BE LED BY BUSINESS NEEDS

ILLUSTRATIVE



Delivery would depend on building permanent or temporary resources (e.g., Data Scientist interns, collaboration with universities) led by Business Needs

(1) simple models such as Logistic Regression, K-Nearest-Neighbours, Decision Trees, Random Forests or Naïve Bayes can be easily implemented on standard cases, more complex models such as SARIMA, Extreme Gradient Boost or Convolutional Neural Network require more analysis work – the choice of the model will influence transparency, scalability, efficiency, resource consumption, etc. and ultimately the

(2) Standard corrections such as Lasso, Ridge... to reduce the effect of bias

PROVE THE RELEVANCE OF DATA SCIENCE FOR THE PROFESSIONAL DIVISION THROUGH TARGETED PILOTS IN 2022

Beyond the deployment and adoption of the Global Dashboard Portfolio, **most Data Use Cases involve Data Science**, which is aligned with plans to develop Data Science capabilities from 2023 (Phase 3)

The **value and complexity of the Data Science Use Cases at the Professional division are unknown** and depend primarily on:

1. Quality of the **Business Glossary**,
2. Richness of **Data Sources**,
3. Choice of the **Model and Fitting** approach,
4. **Transparency** of the Prediction,
5. **Actionability** of the Outcomes (transform predictions into resolution)

For discussion, we suggest to **pilot 2 Data Science Use Cases** before 2023 (such as Churn Management and Up-sell Lead Identification) to gain first experience, size the investment needs and evaluate the potential and complexity of Machine Learning at the Professional division