# EPAM's Digital Factory

Digital Factory is an operating model that unifies digital service delivery to increase scalability, operational efficiency, drive innovation and ultimately accelerate organization's digital ambitions, supporting transition from project to product based & outcome-based operations.

EPAM Digital Factory Operational Framework is intended for both Digital & Conventional types of solutions, with unified processes & tools across critical components, including intake orchestration, architecture governance, engineering productivity, and KPI & Measurement framework. It provides a robust foundation to quickly deploy resources and scale teams to deliver new products, services and capabilities to Baker Hughes and its customers.
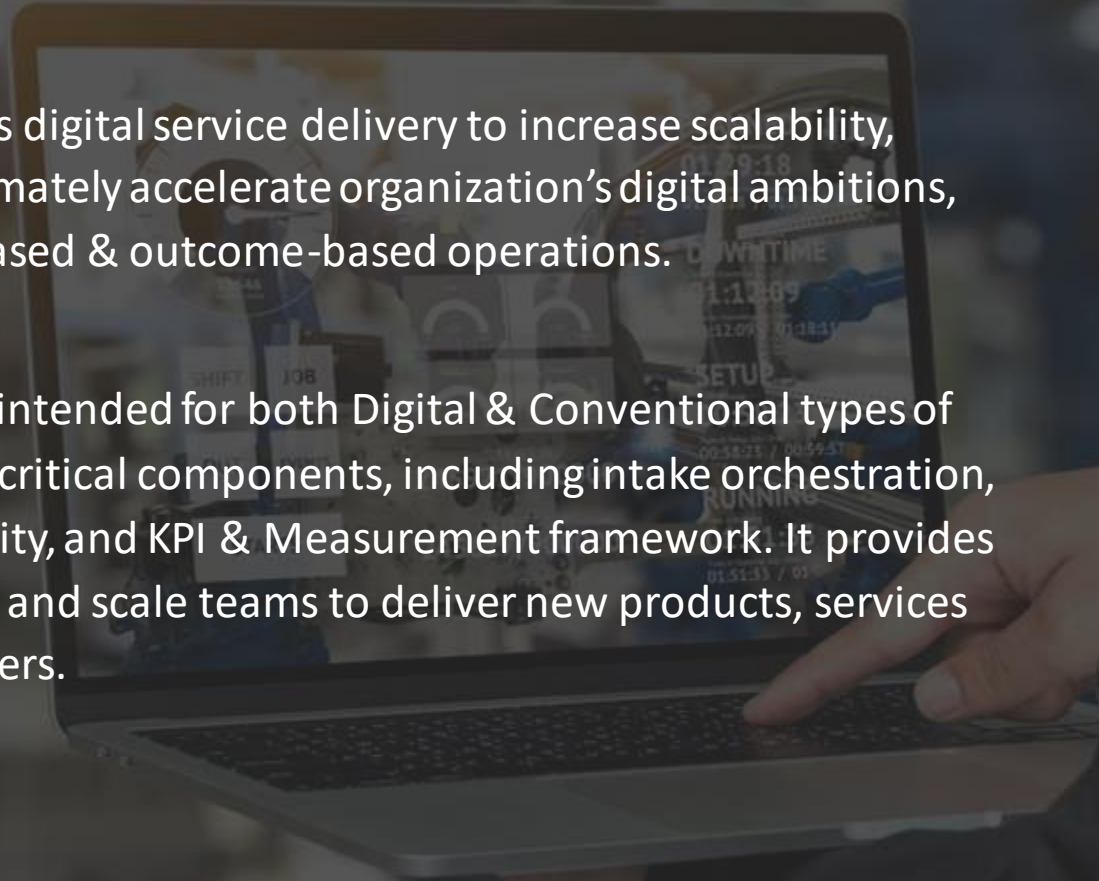
An Oilfield Digital Leader Will

- Impact a Cycle

- Rapidly Adapt a Product to Need

- Be Preferred and Cost Efficient

- Reliably Scale

- Reduce Complexity

- Co-Lead in Energy Transition

- Rely less on Capex for Business

Paying for Digital

Q: Don't Digital programs just add cost?
A: No, they *change* cost and enable *new* revenue.

Oilfield Digital Infrastructure Cost *should* be:
- Elastic to match cycles
- Elastic to match Compute Demand (M & I)
- Elastic to match seasons and volumes

A Digital Program *should*:
- Remove CAPEX fueled growth
- Replace fixed Cost with variable, value driven
- Take out non-performing Fixed Cost

A Digital Program *should* help pay for itself:
- Value Driven Investment
- Variable Staffing Models
- Portfolio Rationalization
- Legacy optimization
- Automation to Replace Human Touch
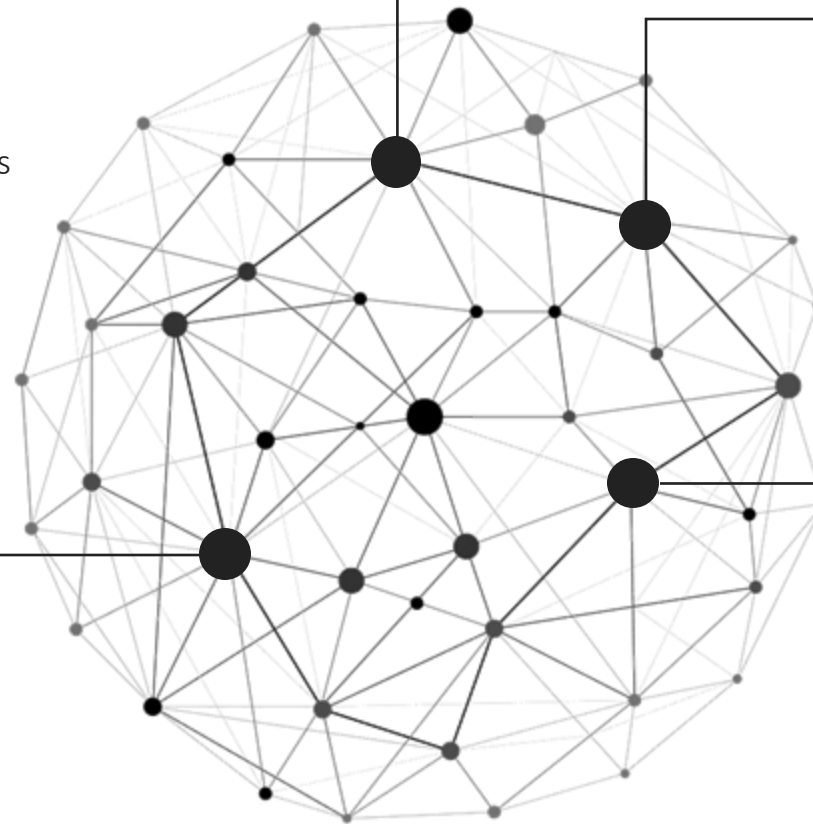- Replace Static Fixed with Optimized Variable

Highly Adaptive & Scalable Digital Operating Model
to power shift from Traditional to Connected Digital Business

QUALITY PRODUCT

o Focus on the Customer
o Product Centricity = Right Culture bringing business together behind shared goals and KPIs
o Deep understanding of Market
o Consistent Long-Term Focus
o Innovations

PEOPLE

o Right People
o Right Culture
o Right Strategy for Growth
o Underpinned by Telescope AI, EPAM's award winning talent mgmt. system

DATA & TECHNOLOGY

o Effective and informed utilization of Data
o Consolidation of platforms & solutions
o API-centricity
o Secure Data and Software Engineering

PROCESS

o Value Creation Org. Structure
o Demand Management & Scalability
o Design Ops
o EngX. Agility & Speed
o Productivity Measurements & optimization
o Governance Risk and Compliance
o Org. Change Management

Digital Factory Operating Model Facets

EPAM brings the strength of our multi-faceted Digital Factory framework to accelerate benefits to clients.

PRODUCT MINDSET

Putting your consumers at the heart of the strategy

TECHNOLOGY PLATFORM

Technology-Enablement & Engineering Culture
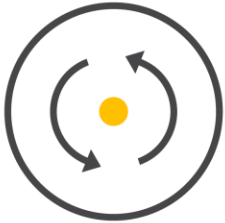
UNIFIED GOVERNANCE

New business & IT partnership model focused on excellence & empowerment

PRODUCTIVITY FRAMEWORK

Doing more with less

INNOVATION

Disrupting the status quo

PEOPLE EMPOWERMENT

Building networks and community to grow competency

ORGANIZATIONAL CHANGE

Winning people's hearts & minds to support the transformation – not enforcing it.

Digital Factory Operating Model Blueprint

Product Mindset

Technology Platform

Unified Governance

Productivity Framework

Innovation

People Empowerment

Organizational Change

The model is highly scalable and can be built in a multi-tenant mode
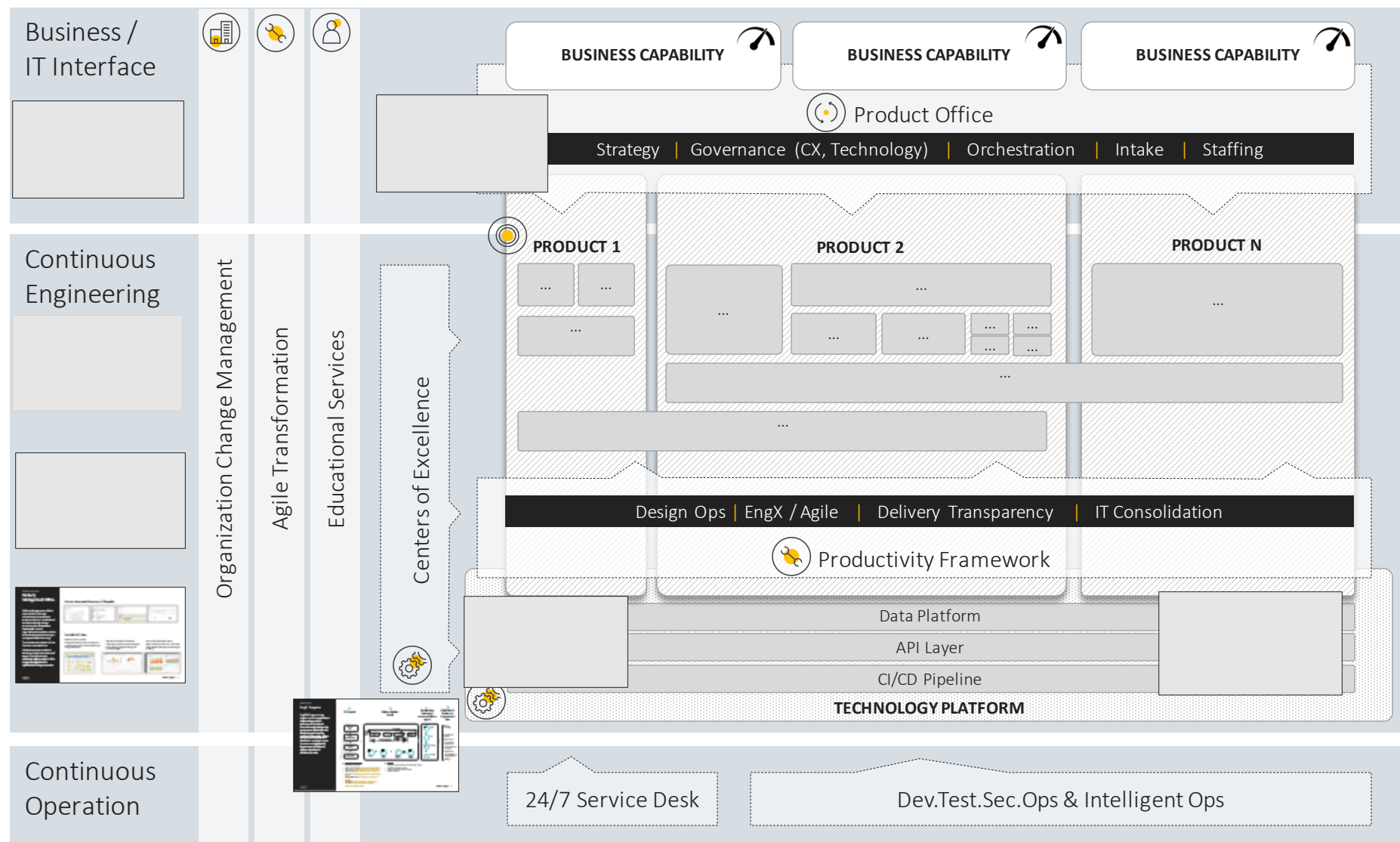
(as an example – for data related projects we can have individual factories, tailored to specific needs while leveraging same framework)

Business / IT Interface

Continuous Engineering

Continuous Operation

Organization Change Management

Agile Transformation

Educational Services

Centers of Excellence

BUSINESS CAPABILITY

BUSINESS CAPABILITY

BUSINESS CAPABILITY

Product Office

| Strategy | Governance (CX, Technology) | Orchestration | Intake | Staffing |

PRODUCT 1

PRODUCT 2

PRODUCT N

...

| Design Ops | EngX / Agile | Delivery Transparency | IT Consolidation |

Productivity Framework

Data Platform

API Layer

CI/CD Pipeline

TECHNOLOGY PLATFORM

24/7 Service Desk

Dev.Test.Sec.Ops & Intelligent Ops

Transformation Process

EPAM Digital Factory **Operational Framework** is intended to wrap both **Digital & Conventional types of solutions** with a goal to establish the unified processes & tools across critical components, including intake orchestration, staffing, KPIs & Measurement framework, architecture governance and engineering productivity and provides a robust foundation to quickly deploy resources and teams to deliver new products, services and capabilities to US Foods with a next level of Agility and Speed to fully adopt product based principles through breaking silos.

But this is not a **one-and-done type of journey –** it's a gradual, and highly collaborative process, that should start from specific set of initiatives (pilot program) allowing to test adoption and inform required change on a larger and more global level.
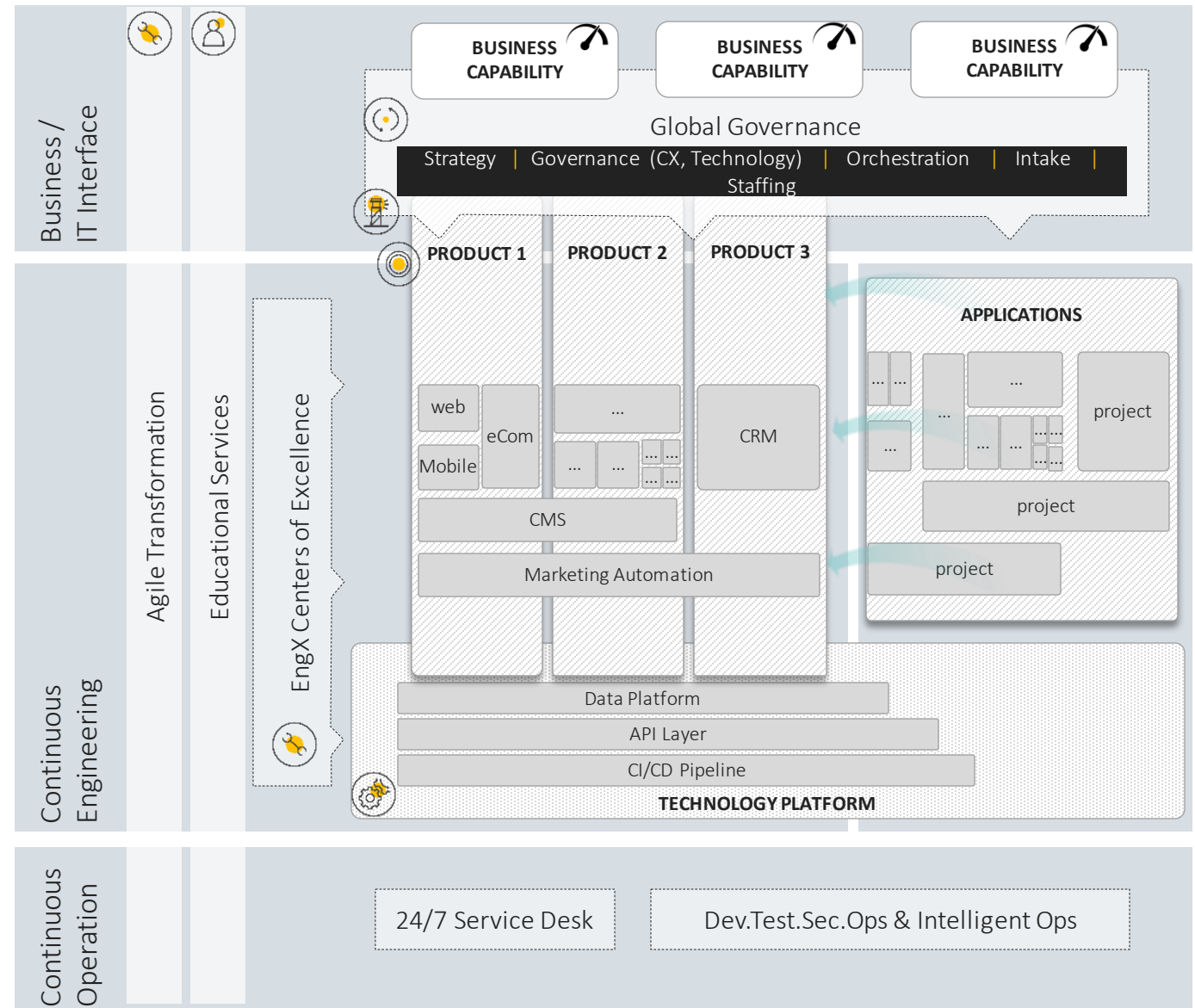
Sample Org Design

This chart represents **provisionary Organization structure / Reference model** that is jointly elaborated and enhanced with based on identified products, initiatives and services.

ENGAGEMENT TIER consists of Client and EPAM program sponsors.

GOVERNANCE TIER is a transversal team of thought leaders and senior domain and technology experts, paired with respective SMEs in the Client core team. The shared team provides alignment of different projects & initiatives, efficiently handles release planning, dependencies management and global effort coordination.

DELIVERY TIER is represented by cross-functional atomic scrum teams responsible for their respective projects. Depending on the size of the intake and desired timeline objectives, the delivery scrum teams can be efficiently scaled under the governance of the share Governance tier.

TIERS: Product | Platform | Portfolio | Business
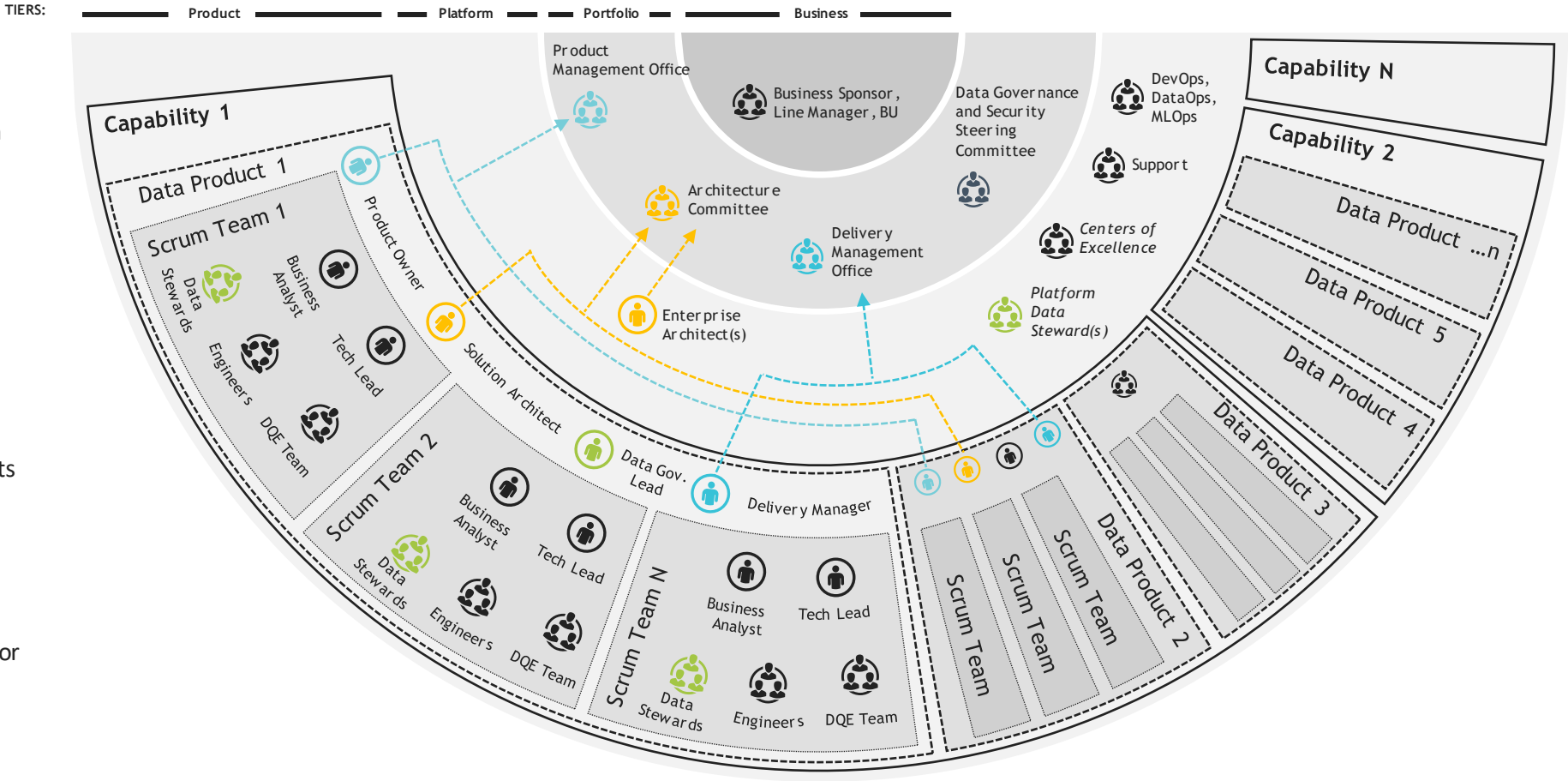
Connecting Innovation Funnel with Digital Factory Model

Exploratory Cycle / Innovation Engine

Digital Factory / Implementation

| Opportunity Definition | Initial Concepts | Detailed Solutions | Product Trial | Market launch |

Services

Products

Partners

Filter gate 1

Filter gate 2

Filter gate 3

Filter gate 4

- Business Challenges
- Market Research
- Trends Review
- Opportunity Areas

- Initial Concepts
- Ideas Assessment
- Sizing, Dependencies
- Filtering & Priority

- Prototyping ("Fail-Fast" approach)
- Design Prototyping
- Technology PoC
- User Validation

- MVP/ 1 Market
- A/B Testing
- Measurements

- Full Launch
- Measurements
- Learn & Adjust

EPAM CONTINUUM

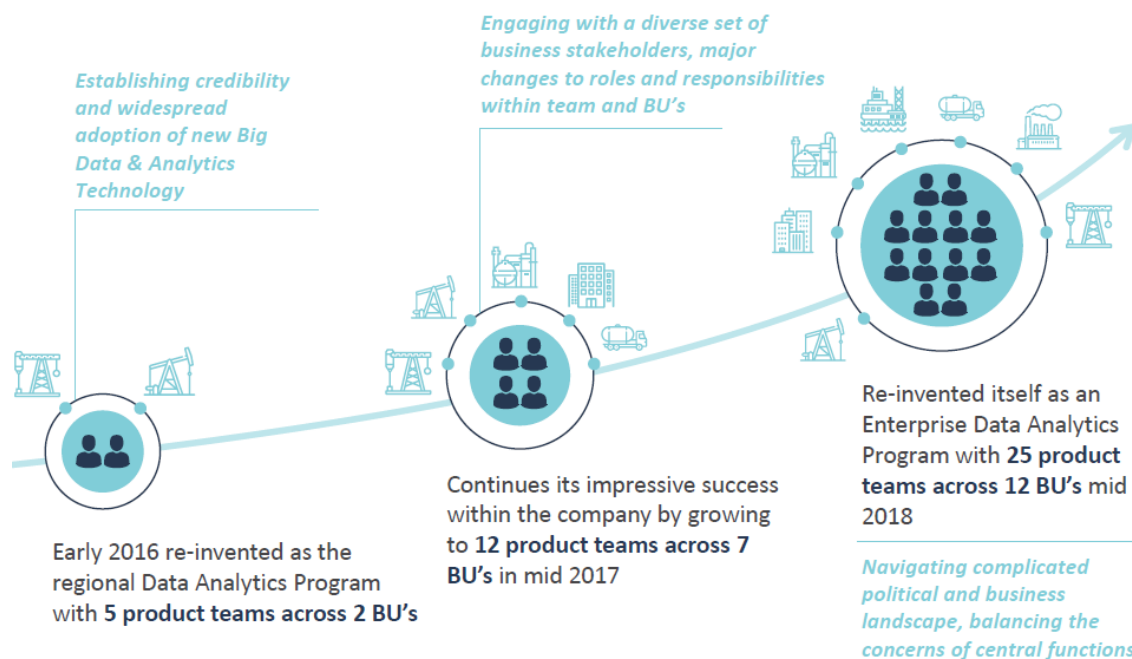# Digital Factory for Global Oil & Gas Company

The Ask

This client had 12 BU's, that operated autonomously with own processes and data, only connected through the core. They had made several failed attempts to create enterprise common model: BU's didn't want to redo existing systems; proposed structure did not fit needs; proposed model metadata was huge; BU's wanted to protect their raw data.

Our Solution

Solution that fulfilled these client objectives: cloud first strategy, build an enterprise data platform as a foundation to many digital solutions, double the size of the data science delivery organization within 12 months, enable data growth to 50-100 PB by 2020, deliver 10x$M in value in 2020.

Digital Factory Highlights

- Data lake to support variety of types of data
- Agreements with different BU's to protect their sensitive data
- Mechanism for small projects of 2-3 months to show immediate business value and build capability
- Prioritization and scheduling based on highest impacts and data availability
- Adding more nodes and scaling team through EPAM
- Support distributed across BU's and vertical competencies
- Single 'front door' to request 'services': 1) augment teams or 2) build & transfer

Establishing credibility and widespread adoption of new Big Data & Analytics Technology

Engaging with a diverse set of business stakeholders, major changes to roles and responsibilities within team and BU's

Early 2016 re-invented as the regional Data Analytics Program with **5 product teams across 2 BU's**

Continues its impressive success within the company by growing to **12 product teams across 7 BU's** in mid 2017

Re-invented itself as an Enterprise Data Analytics Program with **25 product teams across 12 BU's** mid 2018

Navigating complicated political and business landscape, balancing the concerns of central functions

DIGITAL FOOTPRINT

Over 60+ Analytics Applications run on the current platform today that include:

- Performance dashboards
- Reliability analytics
- Spend predictions
- Cybersecurity Analytics

KEY RESULTS

Product Management
- 25 product teams across 12 BU's
- Engaging diverse stakeholders
- Over 60 applications

Roles and Responsibilities Restructure
- Platform
- Delivery
- PMO
- Engagement

Hybrid Delivery
- Core plus shared resources was 80 ppl from EPAM + 20 ppl from client
- Flex/product teams was 200 ppl from EPAM and at latest stage about 100 ppl from client

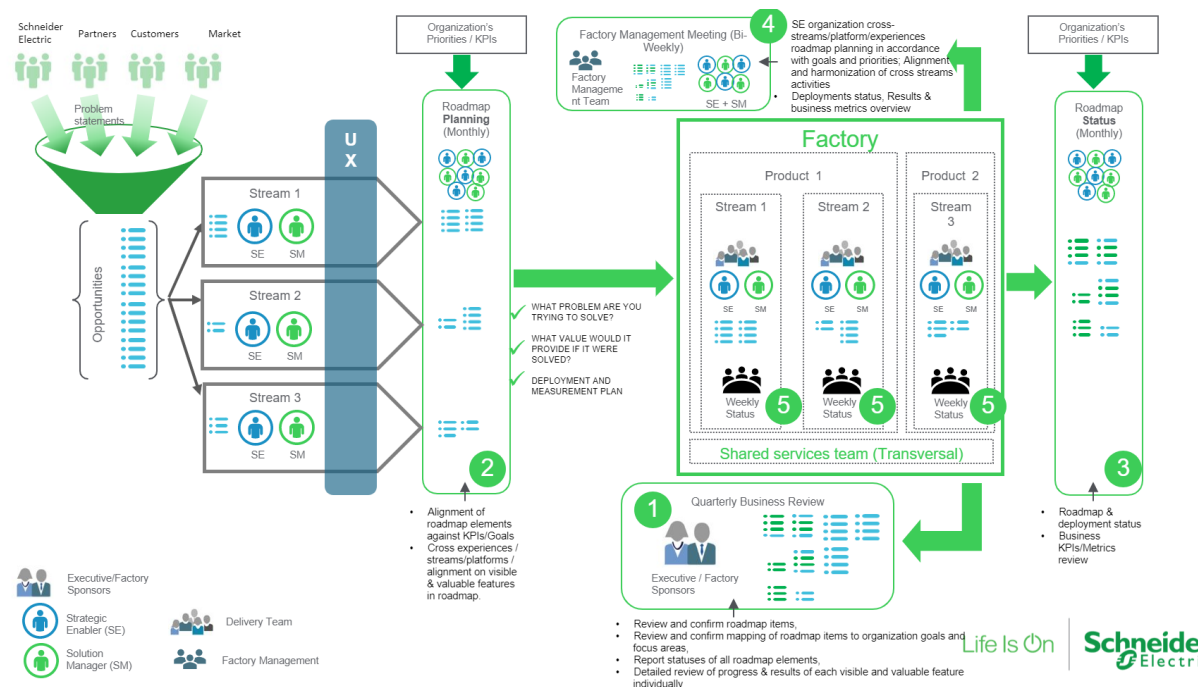# Digital Factory Delivery Center for Schneider Electric

The Ask

In 2016, SE reached out to EPAM with series of complex issues: Global Rollout Challenges, Poor customer experience & low NSS Score, issues integrating IT & digital marketing units under a single umbrella

Our Solution

EPAM deployed Digital Factory Model to manage multiple streams of work, undertaking large numbers of strategic initiatives. Started with 4 FTE in 2016 and grew to 400 FTE, focused on digitisation of Schneider's marketing, sales and overall customer experience.

Digital Factory Highlights

- Eastern-European delivery centre in Belarus organized in self-contained independent product teams
- Shared team of EPAM's discipline leads onsite overseeing all the projects within Digital Factory, providing guidance & knowledge continuity
- E2E Agile delivery methodology with the shared set of metrics & KPIs for continuous factory performance measurement & optimisation

DIGITAL FOOTPRINT

- Front-end: Angular JS, React Native
- Mobile: iOS, Android
- Digital Platforms: SDL Tridion (headless), Oracle ATG
- API: Apigee

KEY RESULTS

- **Global rollout to 150+ countries**
- Defining the **digital experience strategy**, and built seamless customer experience
- Significantly improved one of the **Key KPI's - Net Satisfaction Score (NSS) ~10 points year over year from 0 to 46**
- Improved Schneider's throughput and quality as evident in **KPIs and metrics used to track all aspects of the Operating Model's performance**
- Significant business KPI improvements:
  - **Total Orders: +21%**
  - **Conversion +26%**
  - **Total Sales: +2%**
  - **Partner Purchases: + 228%**

Target Operating Model

EPAM's Target Operating Model Design Framework

Digital Disruption, along with the required adoption of new technologies, is driving many of EPAM's clients to consider a more holistic approach to managing organizational transformation by implementing new operating models

I. Opportunity Definition
Is there a white space opportunity? Are there maturity or operational gaps?

II. Vision & Strategy
What is our vision, mission and strategic relevance to the business? What will be our measures of success?

III. Product & Service Offering
What specific services or products should we provide to internal/external customers?

IV. Target Operating Model
(a) What does our blueprint look like?

Capabilities & People
- Organizational Structure
- Roles & Competencies

Process & "Ways of Working"
- Operating Processes & Governance

Technology & Tools
- Technical Architecture
- Tools to run and deliver

V. Target Operating Model
(b) What is the migration plan to get from today to tomorrow?

Strategic Roadmap
(Actionable, Executable)

People Enablement & Transition
("Adapt & Adopt")

DETAILS OF OUR APPROACH

- **Opportunity Definition**: As "technologists", we possess a deep understanding of the impact of transformative technology on businesses today

- **Vision & Strategy**: A TOM must be grounded in a sound strategic vision & mission; we have tools and methods to support the development and articulation of a clear, future-oriented path

- **Product & Service Offering**: What are the outputs (discrete products/ services) rendered on behalf of the company? How will they generate and add value?

- **Target Operating Model**:

  - Blueprint – What does "great" look like in ways of people, process and technology in the future state?

  - Migration Plan – What is the most advantageous way to get from point A to point B, maximizing "burn-in", while minimizing cost, time, and waste

We believe in breaking down silos through integrated business, experience and technology consulting

Accelerating breakthrough ideas into meaningful impact.

We use **Data** to inform decision-making and drive business performance at every step

PRODUCT

Holistic vision to maximize value of the MVP and beyond

Design centric product development on top of engineering excellence principle, industry standards and best practices . Running rapid experiments to validate hypothesis – new markets, segments, new features

EXPERIENCE

Establishing motive, fostering engagement & excitement

By focusing on people, uncovering their latent needs, desires, and motivations, we create seamless and engaging product and service experiences that create tangible value & set you apart from your competitors.

BUSINESS

Delivering business value

We identify relevant opportunities of focus for customers, that define where investment should be made in existing or new products and services.

TECHNOLOGY

Moving at the speed of software

Keeping up with the pace of technology change is hard. We help you to shape your technology architecture and roadmap, ensuring investments are appropriately evaluated, prioritized and de-risked.

EXPERIENCE

PRODUCT

BUSINESS

TECHNOLOGY

PROGRAM

Consumer Value Drives Organization

PRODUCT → FOCUS ON **CONTINUOUS VALUE**

— VS. —

PROJECT → FOCUS ON ONE-TIME RESULT
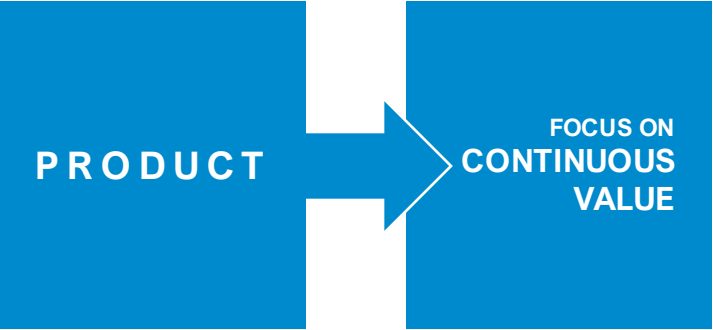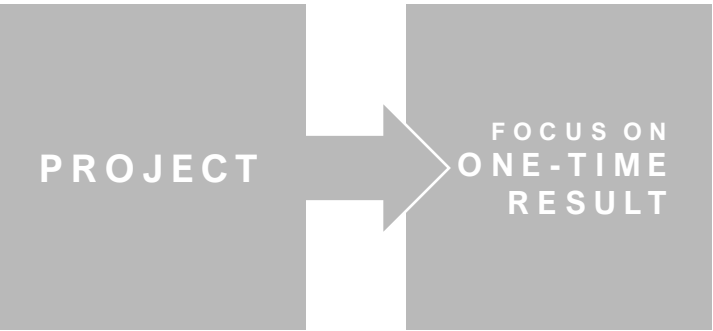
Focus on value

Consumer at the center & business value in focus

Holistic visionary & cross-functional teams (business, users, IT)

Sustainable alignment on future vision & steps

Strategic vision broken down to measurable objectives

Be flexible & predict

Product roadmap, lifecycle, and dependencies

Minimal Viable Product

Time-to-market

Monthly to biweekly to weekly releases

Event-driven, multi-platform architecture

Experiment

Design thinking (DesignOps & DevOps)

Rapid prototyping

Instant Feedback

Room for ongoing innovation

High-trust environment to motivate new initiatives

Learn & evolve

Unified data foundation

KPIs & measurement strategy

Continuous measurement & optimization

Avoiding silos

Product-Centric Operations: Adaptiveness to Changing Consumer Needs

BUSINESS VISION

Business Case

EXAMPLES OF OUTCOMES:
- Products and Services portfolio
- Target Clients and Segmentations
- Customer Research & Market Trends
- Competitive Differentiation
- Business Model Canvas

BUSINESS PROCESS

SOFTWARE PRODUCT (TECHNOLOGY ENABLER)

SOFTWARE PRODUCT STRATEGY

STREADS

STREAMS		EXAMPLES OF OUTCOMES:
Customer Experience	*Product Strategy & Roadmap*	Product Canvas and High-Level Service Map
Functionality		Go-To-Market Strategy & Concept Validation
Technology		Technology Feasibility Study
Planning		Product Lifecycle & Roadmap

PRODUCT DESIGN

Product Backlog

EXAMPLES OF OUTCOMES:
- UX Design: Personas, Detailed Service Map, User Journeys
- Functional Design: Features, Priorities, Primary EPICs
- Solution Architecture: Inform.&Tech., Components, Buy vs Build
- Product Release Plan

PRODUCT ENGINEERING

Product Release Plan

EXAMPLES OF OUTCOMES:
- Visual Design: Wireframes, Visual Comps
- Requirements: User Stories for Sprints
- Software Development & Infrastructure
- Program and Workstreams Management Setup

Measurement Strategy & KPIs

BUSINESS VALUE

Our Approach is Human Centric, Evidence Based, Technology Enabled

Design, business and engineering are often seen as different disciplines, but it is when they work together, as part of multi-disciplinary teams, focused on mutual goals that we can have the greatest impact and provide the greatest value.

HUMAN CENTERED

BUSINESS DRIVEN

DATA ENRICHED

TECHNOLOGY ENABLED

Set the Direction

Surface what is valuable and important based on a deep analysis of users

Identify the internal and external realities at play that will shape the optimal experience

Create alignment across the business through a strategic roadmap

ASSESS THE CONTEXT

ESTABLISH THE STRATEGY

EXPLORE THE IDEAL

CREATE THE FOUNDATION

AGILE READINESS

IMPLEMENT AT SCALE

Bring it to Life

Rapidly explore concepts to test and reach the optimal solution

Design the foundational systems of the architecture and interaction design

Establish the backlog and planning to enable agile delivery

Product Management Methodology

Product Management Maturity Model

Dimension 1 Instinct Driven	Dimension 2 Requirements Driven	Dimension 3 Customer Experience Driven	Dimension 4 Market Driven	Dimension 5 Strategy Driven
• No formal product management role or organization • Project-centric • Output mindset	• Product management role and organization • Product-centric • Success relies mainly on quality of product	• Customer experience shapes development and GTM activities • Customer-centric • Success is create best solution for customers	• Stakeholders aligned around a vision • Data-driven • Acquire new customers • Increase customer lifetime value	• Decisions aligned on strategic priorities • Clear success measures • Outcome mindset
Directive	**Tactical**	**Collaborative**	**Growth-Oriented**	**Transformational**
Decisions made by a few influential people	Requirements defined as line items. Engineering interprets	Product goals and roadmaps articulated through CX definitions	CX definitions drive alignment of stakeholders on product vision	Strategy is vetted through product methods and frameworks

Goal is over 6-12 Months

Progressive and always improving ∞

You are here

Goal

EPAM's Approach To Product Portfolio Management

Product Portfolio Management & Roadmap

Understand Business & Product Strategy

- Explore & understand business vision & strategy (workshop):
  - Define the short & long-term goals
  - Define the obstacles that might prevent achieving the goals
  - Define the critical areas that will drive the change

Define Roadmap

- Setup a process for joint backlog prioritization based on balance of business value & technical dependencies:
  - Define IT & Business stakeholders in charge
  - Define re-prioritization schedule (i.e. quarterly)
- Educate stakeholders on the concepts of MVP and frequent release cycle
- Define the initial product portfolio:
  - Create the initial backlog based on product strategy and results of technology assessment
  - Facilitate initial prioritization session ("learning by doing")

Build Agile Product Management Mindset

- Educate business & IT stakeholders on the differences between product and project mindset and how it influences the roadmap creation and prioritization
- Define product value measurement framework
- Enable data-driven decision making
- Establish the process for regular feedback collection and re-prioritization based on it

DISCOVER: KEY ACTORS, PROBLEMS, OPPORTUNITIES

AS-IS DISCOVERY WORKSHOPS

Fundamental kick-off workshops for all teams focused on understanding of the business & user-value proposition. Mapping Jobs to be Done canvas following initial interviews with employees/stake holders/end-users.

Identifying key actors, what each actor does every day, every week, what are the necessary outcomes, extract gains and pains. The AS-IS discovery workshops are usually concluded with Value proposition workshop for products and services to identify KPI metrics and identify durable competitive advantage.

1. UNDERSTANDING USER PERSONAS

3. CAPTURING JOBS TO BE DONE

	Who	When	What	Measures	Insights	Frequency	Impact	Upstream	Downstream
Jobs									
Pains									
Gains									

Identifies the opportunities through pains, gains, frequency, value analysis - Sample table from post-it canvas

2. DEFINING KEY PROBLEM STATEMENTS

PROBLEM STATEMENT – ROLE/ACTOR

"In the office, teams of analysts have a heavy reliance on paper and memory for data entry. There's no task tracking system, therefore no audit trail. They must manually track plan details and cage status, losing valuable time that can be used for higher priority tasks."
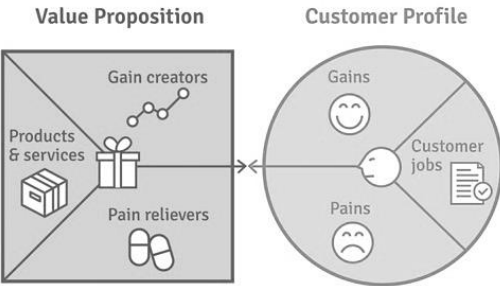
Resulting high-level problem statement with actor focus

4. UNPACKING CUSTOMER PROFILES AND VALUE STREAMS

The Value Proposition Canvas is formed around two building blocks – customer profile and a company's value proposition.

DISCOVER: USER JOURNEY MAPS

Role	Scenario	Goals & Expectations	
Persona description	*Process workflow*	*User goals*	

	Step 1	**Step 2**	**Step …**	**Step "n"**
User Actions	Action 1 Action 2	Action 1 Action 2	Action 1 Action 2	Action 1 Action 2
Touchpoints				
Emotions	🙂	☹️	😐	🙂
Pain Points		Pain Point 1 Pain Point 2	Pain Point 1	
Insights	{Example} • Add the button "Add to cart" • Add cart icon on the header	Insight #1 • Bullet 1 • Bullet 2	Insight #1 • Bullet 1 • Bullet 2	

Detailed descriptions for critical sub-workflows / sub-processes

DISCOVER: PROCESS MAPS

Describes how business operates, why it operates in a certain way, who is responsible and when and where specific workflows (or activities) should occur

- Problem
- Opportunity
- Change required

(III) Organization

(II) Business Process

(I) Major business function

MAJOR FUNCTION-1
MAJOR FUNCTION-2
MAJOR FUNCTION-…
MAJOR FUNCTION-n
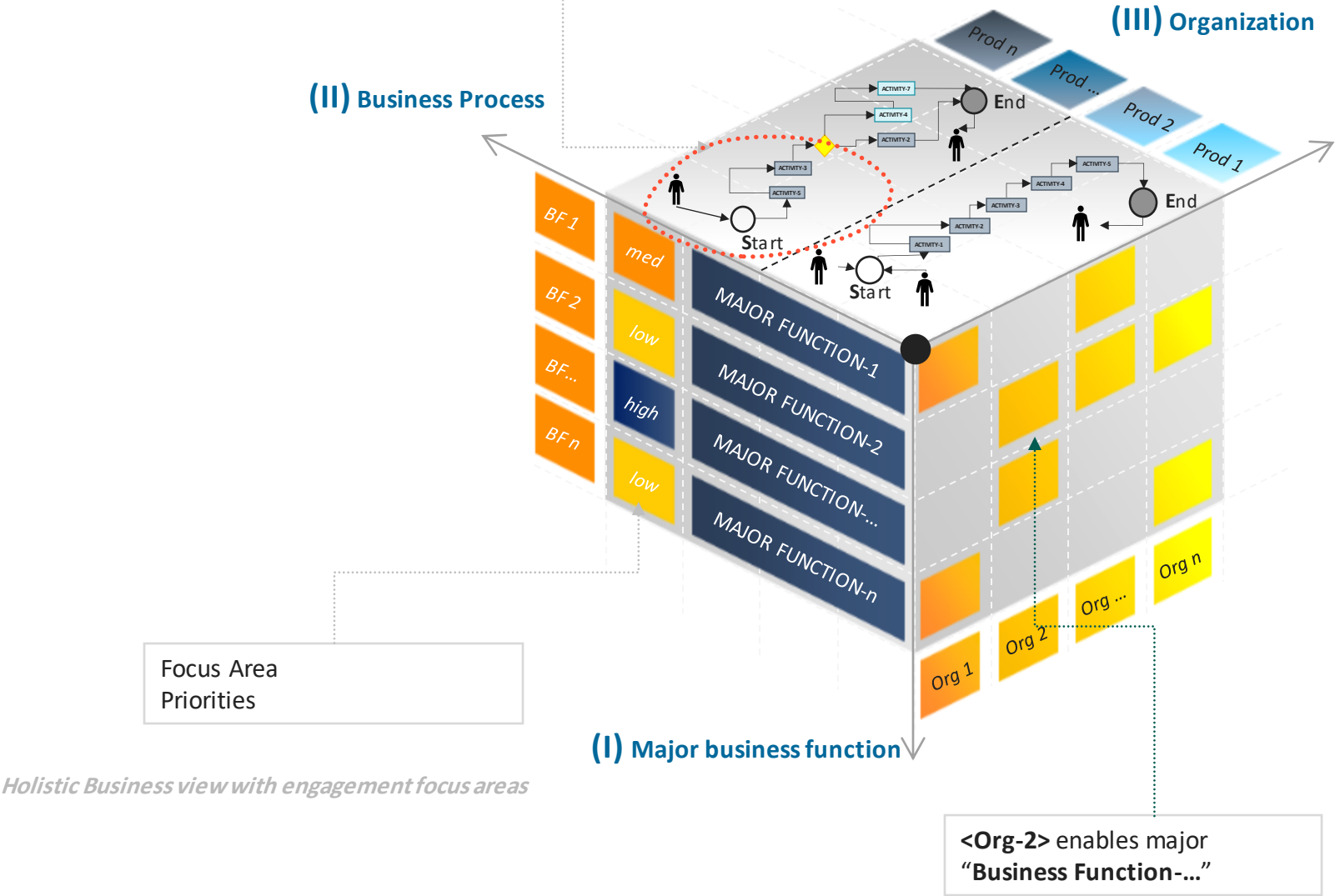
Holistic Business view with engagement focus areas

Focus Area
Priorities

<Org-2> enables major
"Business Function-…"

DISCOVER & DEFINE: BUSINESS OKRS & PRODUCT KPIS

ANALYTICS & MEASUREMENT STRATEGY

Maps your business objectives & goals directly to Key Performance Indicators (KPIs), which gives you effective measurements of your digital experience while focusing on what matters most. This strategy ensures that the organization is aligned on what success looks like before the program is started. It provides an explicit framework to quantitatively measure performance over time and enable continuous loop between product strategy and realized value to adapt quickly and make necessary adjustments.

KPIs Map

KPIs Map Example

INCREASE PRODUCTIVITY GAINS FOR PD

GOAL 1:
Increase & maintain adoption
- % of Active Users
- Logins Per User

GOAL 2:
Improve Information Findability:
- Internal Search Click-through Rate
- % Sessions Viewed an Entity
- VOC – Time Saving*
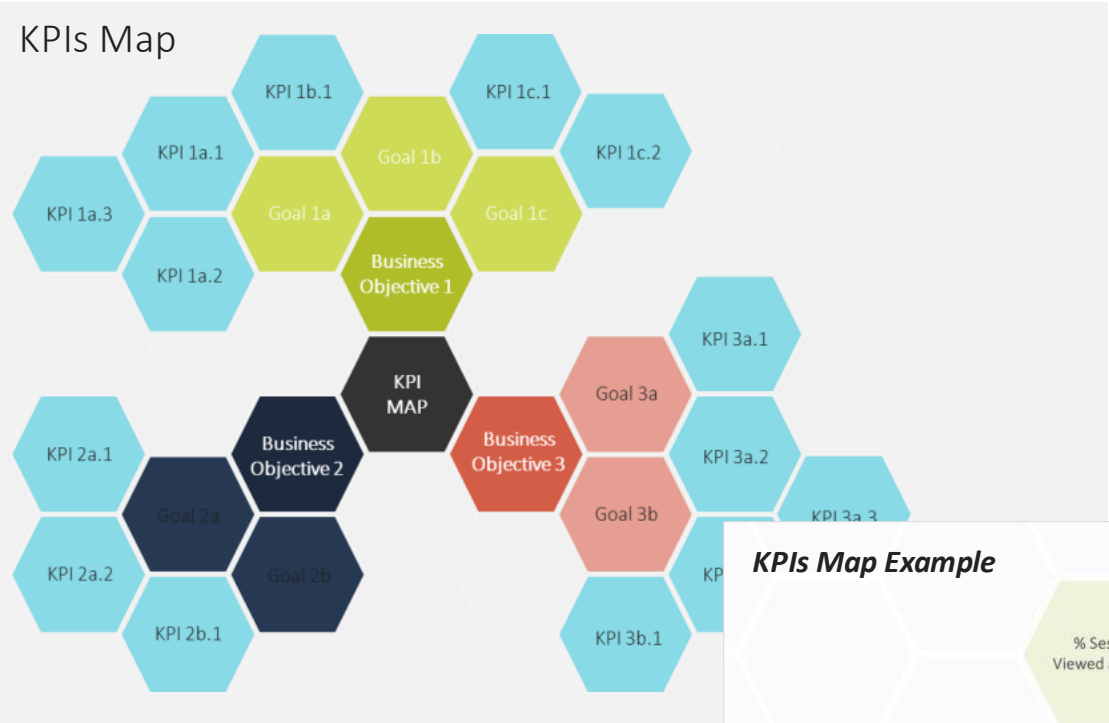
DISCOVER & DEFINE: HIGH-POTENTIAL PRODUCT CAPABILITIES

BUILDING PRODUCT CAPABILITY MAPS & EVALUATING FEATURE COMPLEXITY

Derives potential product capability gaps and opportunities out of the collected materials. Selected opportunities are then transformed into product capabilities & features. Initial directional assessment of complexity, efforts and other parameters. Non-functional requirements get also laid out and preliminary sized.

GAPS & WOWS COMPLEXITY/EFFORT MAPPING

Services Estimates for PM & EHR GAPS and WOW Features

Module (EHRM, PM, Common)	Level 0 -Category	Level 2 - Feature	Level 2 - Nested Featues OR Stories	Polaris Stage - Workstream	Write	Complexity	Services	Notes	Effort
EHR	Patient	Noting (includes E&M calculator)	Improve signing workflow	Wow	W	Complex	5		65
EHR	Patient	Noting (includes E&M calculator)	Add patient risk level to note	Gap	W	Simple	2		15
EHR	Patient	Noting (includes E&M calculator)	Include evaluations and outcomes when cite Care Plan into note	Gap	W	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Include ICD when cite problems to note	Gap	W	Simple	2		15
EHR	Patient	Noting (includes E&M calculator)	Deactivate Clinical Hx from the note	Gap	W	Simple	2		15
EHR	Patient	Noting (includes E&M calculator)	Improve citing of meds in the note	Gap	RW	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Interact with clinical measures	Gap	RW	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Handle high risk meds and orders	Gap	RW	Complex	5		65
EHR	Patient	Noting (includes E&M calculator)	Section level entry mode for specific sections (non HPI)	Gap	W	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Transition from legacy forms and templates	Gap	W	Complex	5		65
EHR	Patient	Noting (includes E&M calculator)	Write finding to note on satisfy health reminder	Gap	RW	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Reconcile meds from the note	Gap	RW	Complex	5		65
EHR	Patient	Noting (includes E&M calculator)	Assessments come from orders/charges to note	Gap	RW	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Include lab notes when cite lab orders into note	Gap	W	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Spell Check	Gap	R	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Speech integration	Gap	Integration	VComplex	5		100
EHR	Patient	Noting (includes E&M calculator)	Rank diags in assessments	Gap	RW	Medium	3		30
EHR	Patient	Noting (includes E&M calculator)	Integration with imaging, directly take picture	Gap	Integration	Medium	3		30
EHR	Patient	Predictive Order Management	Smarter diagnosis mapping	Wow	W	Complex	5	ML	65
EHR	Patient	Predictive Order Management	Lab test mapping	Gap	RW	Complex			65
EHR	Patient	Predictive Order Management	More integration into the note	Gap	RW	Complex			65
EHR	Patient	Predictive Order Management	Roll up suggestions to less specificity	Gap	RW	Complex	5	Check Orders	65
EHR	Patient	Predictive Order Management	Clinical measures feed into POM	Gap	Integration	Medium			
PM	MyDay	Eligibility Enhancements (includes multiple copays)	Clinical - Vew Authorizations from Clinical	Wow	RW	Medium			
EHR	Patient	E-prescribe (includes codified sig,	Sig favorites at provider level	Wow	RW	Medium			

FEATURE LEVEL COMPLEXITY/EFFORT MAPPING AND ESTIMATIONS

Epic	Feature	User Stories				#UI Fields	#UI Fields (prefill)	#Submissions
Patient	Allergies	Allergies - List				11	1	
Patient	Allergies	Allergies - Detail				38	1	
Patient	Administered Medications	Administered Medications						
Patient	Encounter Note	Encounter Note - Draft				79	2	
Patient	Encounter Note	Encounter Note - Search Findings				21	1	
Patient	Encounter Note	Encounter Note - Search Qualifiers				22	0	
Patient	Encounter Note	Encounter Note - Form				130	8	
Patient	Encounter Note	Encounter Note - Preview				60	1	
Patient	Encounter Note	Encounter Note - Dictation Markers				15	1	
Patient	Encounter Note	Encounter Note - Drawing & Annotation				20	3	
Patient	Encounter Note	Encounter Note - Text Writer				60	3	
Patient	Encounter Note	Encounter Note - Vitals				5	1	
Patient	Encounter Note	Encounter Note - Citing				45	13	
Patient	Encounter Note	Encounter Note - E&M				50	3	
Patient	Encounter Note	Encounter Note - Favorites				20	13	
Patient	Encounter Note	Encounter Note - Previous Encounter				40	10	
Patient	Encounter Note	Encounter Note - Copy Family History				25	7	
Patient	Encounter Note	Encounter Note - Intake Findings				15	1	
Patient	Encounter Note	Encounter Note - Right Click Options				5	1	
Patient	Encounter Note	Encounter Note - Section Selection				10	1	
Patient	Encounter Note	Encounter Note - Printing				5	0	
Patient	Encounter Note	Encounter Note - Signing				25	1	2
Patient	Encounter Note	Encounter Note - Preference Setup				50	4	2
Patient	Encounter Note	Encounter Note - Design						
Patient	Immunizations	Immunizations - Widget				26	1	0
Patient	Immunizations	Immunizations - Order Immunization Schedule				36	2	0
Patient	Immunizations	Immunizations - Administered				50	2	5
Patient	Immunizations	Immunizations - Scheduled				16	1	1
Patient	Immunizations	Immunizations - Administer				18	1	1
Patient	Immunizations	Immunizations - Record				5	1	0
Patient	Immunizations	Immunizations - View Schedule				0	0	0
Patient	Vitals	Vitals - Widget				66	1	1
Patient	Vitals	Vitals - Details				92	1	2

TECHNICAL/NON-FUNCTIONAL REQUIREMENTS ESTIMATION

Work Buckets	Effort	
Reference/System Data Model	100	
System Data - seed data population framework	300	
Data Model Definition - relational	300	200 Entities
Data Model Definition - Mongo	300	200 Entities
Mongo Setup	200	
Data Migration - Progress to Postgres (process)	150	
Tooling & Scripting	150	
Data Migration - Postgres to Mongo (process)	200	
Tooling & Scripting	200	
Platform schemas - Request/Response, External Interfaces (EDI)	1200	
Input Data Ingestion framework		
FluentD/Flume or similar	200	
Data Lake (S3) - Process Definition	200	
Data Lake (S3) - API Integration	300	
Messaging (Kafka) - Topic Design	200	Assumes 200+ Topics
Messaging (Kafka) - Setup	100	
Messaging (Kafka) - Publisher Integration	200	
Messaging (Kafka) - Consumer Integration	200	
Messaging (Kafka) - Topic bound Schemas	200	200 Schemas
JSON to Avro - Conversion	400	200 Schemas
Data at Rest Encryption - framework & integration (Relational)	300	
Log Management - Log Collection	200	
Log Management - Storage & Archival	200	
Log Management - Search & Query Framework	300	
Common framework	200	
PS & Success Data Migration Process	150	
Tooling & Scripting for Data Extraction	500	
TOTAL	6950	

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DEFINE:
MULTI-DIMENSIONAL PRIORITIZATION FRAMEWORK

BATTLEGROUNDS
Core strategic areas that support the path towards realizing the business vision and associated KPIs.

BATTLE
Each battle represents A specific capability required to be enabled to facilitate transition from current state to future state within the battleground.
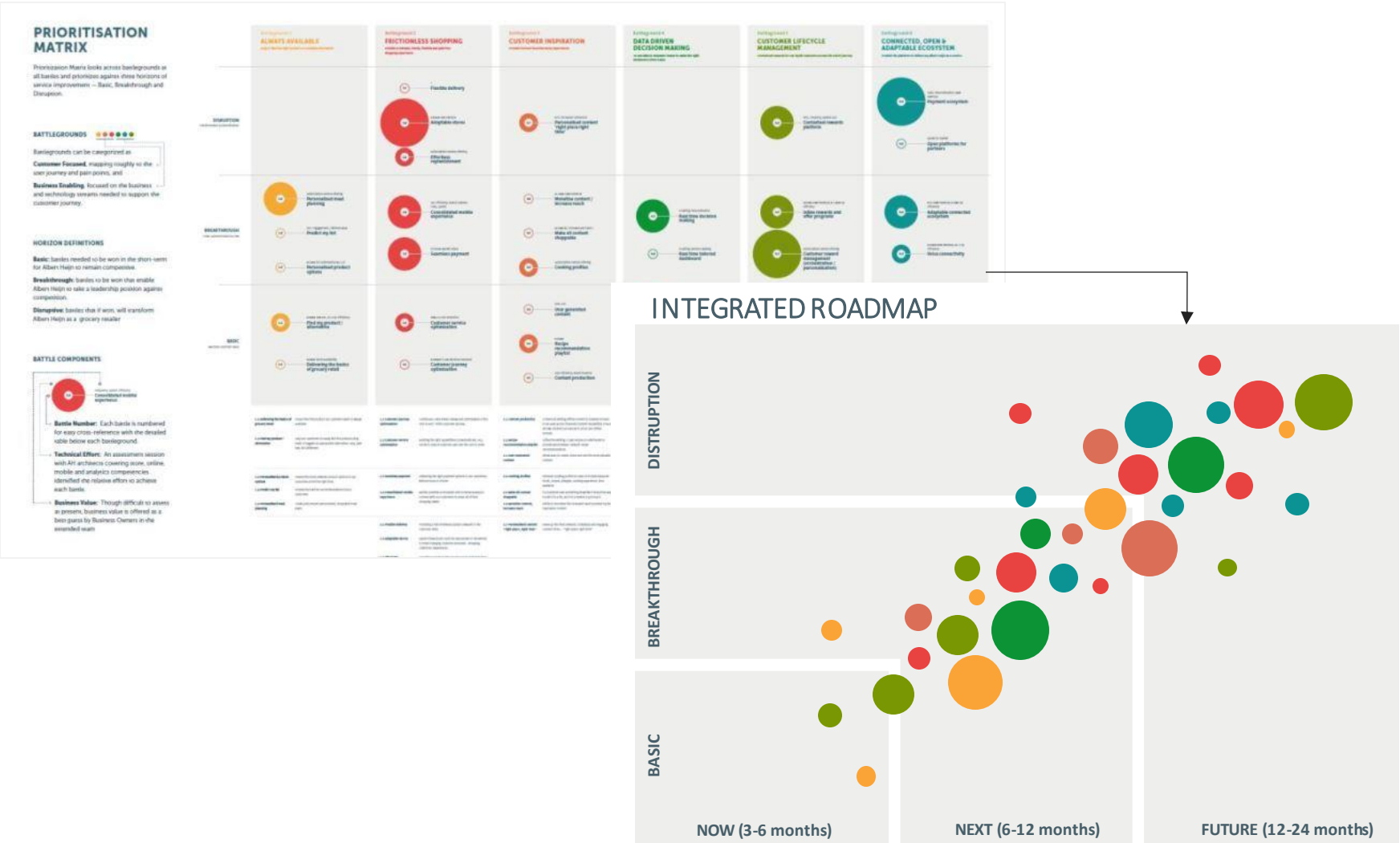
HORIZON
Characterizes the level of service improvement.
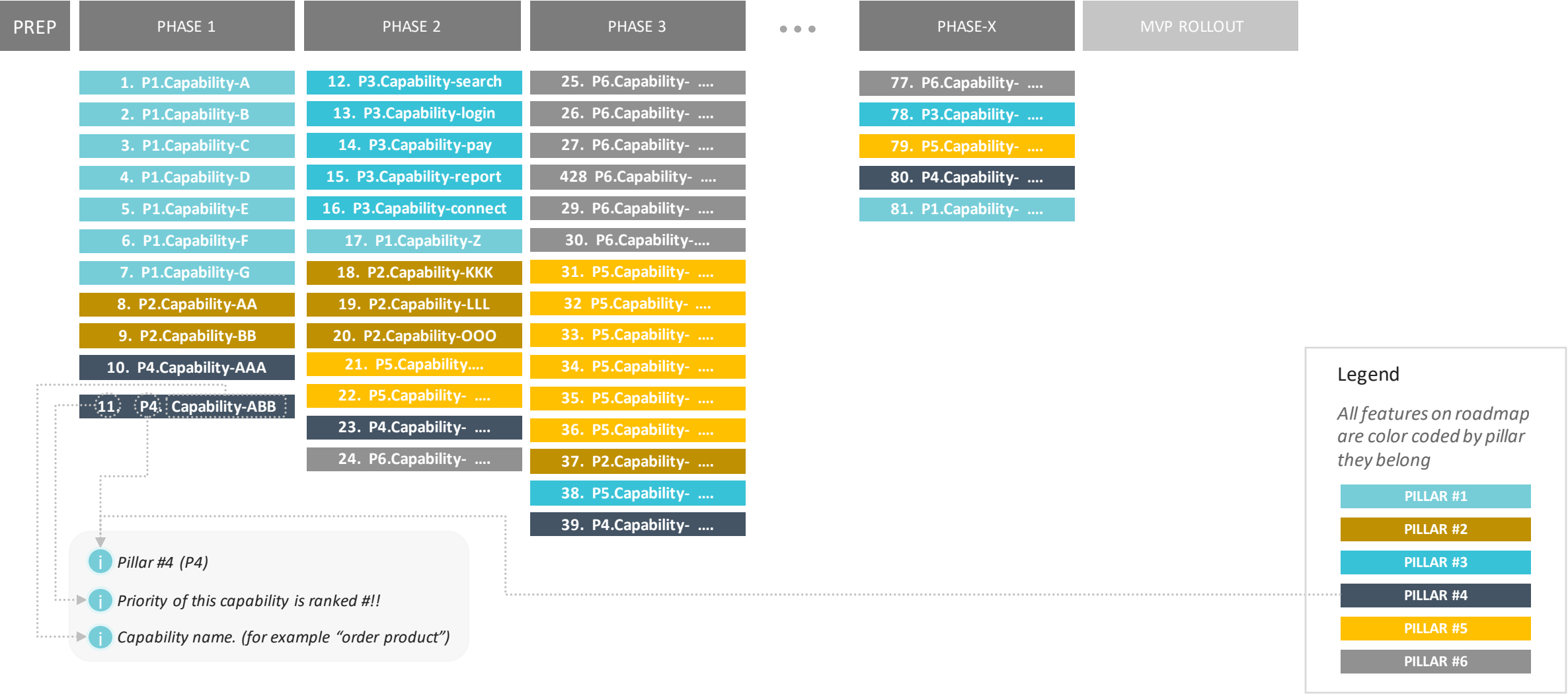
PRIORITIZATION MATRIX
Looks across battlegrounds in all battles and prioritizes them across horizons taking into consideration business value, technical feasibility, and effort.

INTEGRATED ROADMAP
Brings together all battles and reveals sequencing over time.

INTEGRATED ROADMAP

MVP PRODUCT ROADMAP

PREP	PHASE 1	PHASE 2	PHASE 3	• • •	PHASE-X	MVP ROLLOUT

PHASE 1
- 1. P1.Capability-A
- 2. P1.Capability-B
- 3. P1.Capability-C
- 4. P1.Capability-D
- 5. P1.Capability-E
- 6. P1.Capability-F
- 7. P1.Capability-G
- 8. P2.Capability-AA
- 9. P2.Capability-BB
- 10. P4.Capability-AAA
- 11. P4. Capability-ABB

PHASE 2
- 12. P3.Capability-search
- 13. P3.Capability-login
- 14. P3.Capability-pay
- 15. P3.Capability-report
- 16. P3.Capability-connect
- 17. P1.Capability-Z
- 18. P2.Capability-KKK
- 19. P2.Capability-LLL
- 20. P2.Capability-OOO
- 21. P5.Capability….
- 22. P5.Capability- ….
- 23. P4.Capability- ….
- 24. P6.Capability- ….

PHASE 3
- 25. P6.Capability- ….
- 26. P6.Capability- ….
- 27. P6.Capability- ….
- 428 P6.Capability- ….
- 29. P6.Capability- ….
- 30. P6.Capability-….
- 31. P5.Capability- ….
- 32 P5.Capability- ….
- 33. P5.Capability- ….
- 34. P5.Capability- ….
- 35. P5.Capability- ….
- 36. P5.Capability- ….
- 37. P2.Capability- ….
- 38. P5.Capability- ….
- 39. P4.Capability- ….

PHASE-X
- 77. P6.Capability- ….
- 78. P3.Capability- ….
- 79. P5.Capability- ….
- 80. P4.Capability- ….
- 81. P1.Capability- ….

ⓘ Pillar #4 (P4)

ⓘ Priority of this capability is ranked #!!

ⓘ Capability name. (for example "order product")

Legend

All features on roadmap are color coded by pillar they belong

PILLAR #1
PILLAR #2
PILLAR #3
PILLAR #4
PILLAR #5
PILLAR #6

PRODUCT TECHNOLOGY ROADMAP

TASKS	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter		
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12

DEFINE & DESIGN

- Workshops & Planning
- Requirements Design (story level)
- UI/UX Design

Sprint 0 ... Sprint N

Sprint 0 ... Sprint N

PLATFORM SETUP

- Software Factory Setup
- Infrastructure & Envs. Setup
- De-Risking POCs
- Technology packages Installations & Configurations
- Technology packages Pre-Integration

FEATURE BUILD

- Estimation and Planning
- De-Risking POCs
- Feature Development & Testing
- Stabilization

CAPABILITY 1   CAPABILITY 2

FEATURE 1   FEATURE 2   FEATURE 3   FEATURE 4   FEATURE 5

Sprint 0 ... Sprint N

INTEGRATIONS

- Analysis & Design
- External Integrations

Migrations

- Estimation and Planning
- De-Risking POCs
- Preparation & Dependency Mgt.
- Execution

MIGRATION TARGET 1   MIGRATION TARGET 2   MIGRATION TARGET 3

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DEFINE: PRODUCT ROADMAP

BIG BANG

Start with the most important Business KPIs. Usually heavy investment into technology enablement. Build connected experiences and re-usable technology components (to enable building other pillars in post-MVP phases). "Do it right" approach but may take too long and too costly to spotlight implementation risks.

QUICK BUSINESS WIN

Focus on ASAP fixing of the few most critical business KPI(s). Usually means silo project-based approach with low re-usability across business pillars. Leveraging legacy technology stack and keeping technical debt are often can be seeing as a part of this MVP option
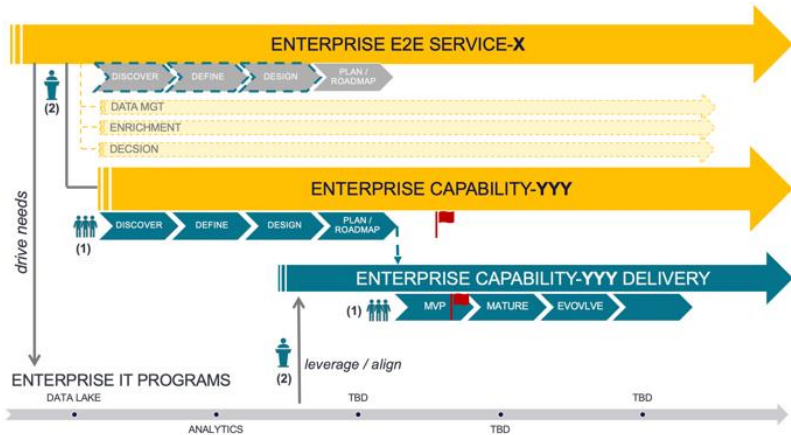
DE-RISK & ENABLE FIRST

Design E2E platform components. As a part of de-risking process – start deployment and integration of the most complex and risky components first.
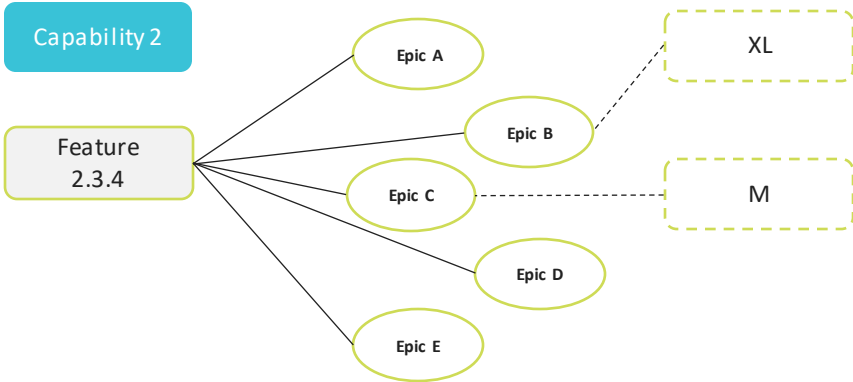
ARCHITECTURE COMPONENETS INTERDEPENDENCIES

CAPABILITY DEVELOPMENT EFFORT SIZING
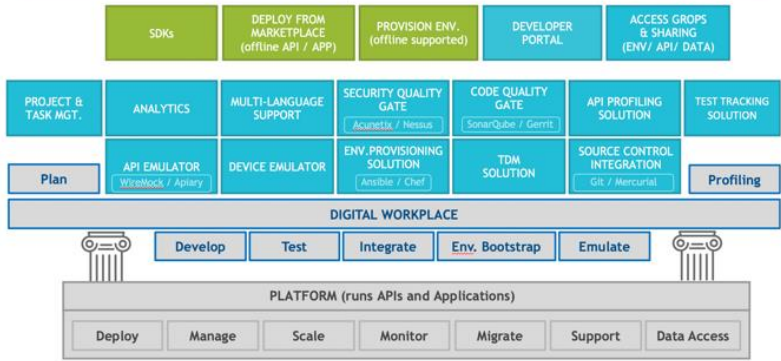
ALIGNMENT WITH ENTERPRISE IT TECHNOLOGY ROADMAP

INTEGRATED DELIVERY ROADMAP