



IBM Consulting

G-Cloud 15 IBM - Digital Engineering and PLM Service Definition Document

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Contents

Why IBM.....	3
Delivery Method.....	11
Governance Structure.....	23
Implementation.....	27
Deliverables.....	30



1. Why IBM

IBM Global delivery capabilities can support the client business operations across the globe

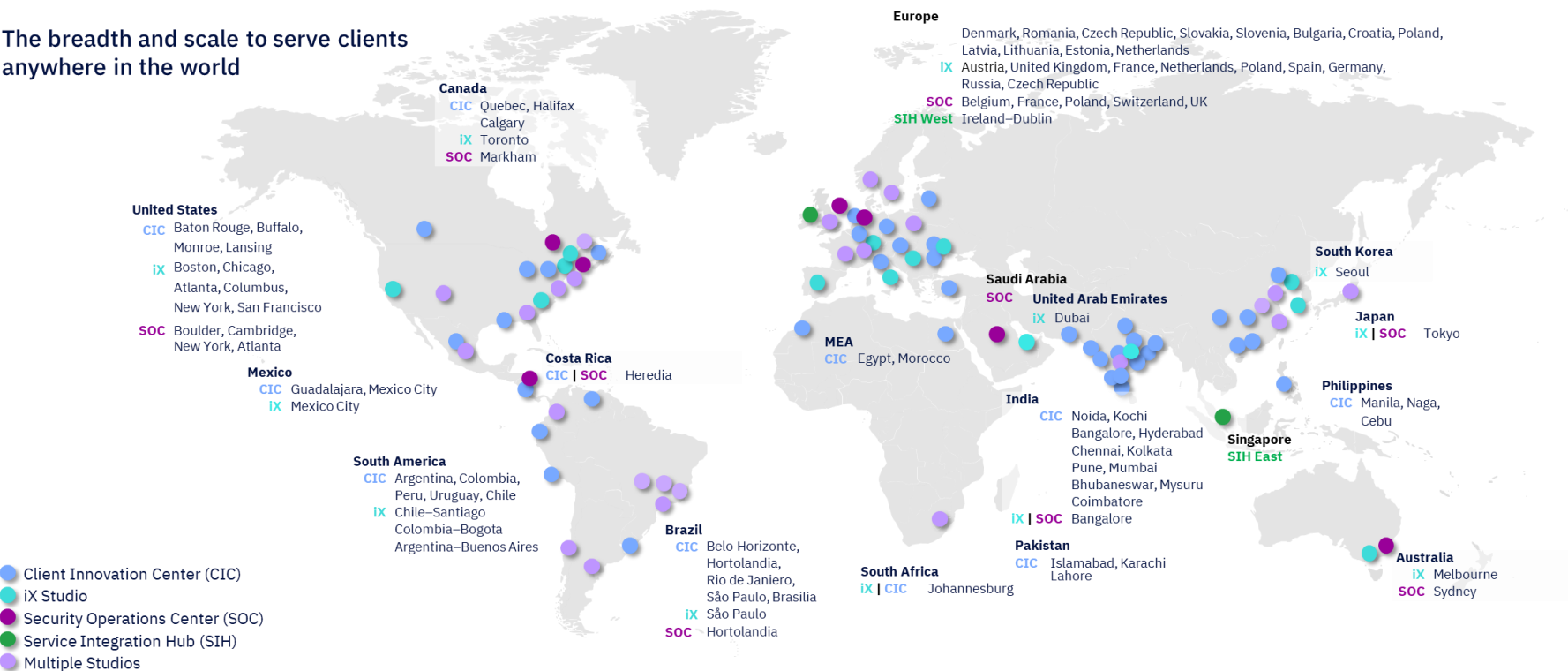
Typical PLM activities with global support:

- Application configuration
- Application testing
- Training Development
- Integration Design and Development
- Active Workspace configuration with HTML5 or Java extensions
- Product system testing
- Configuration Management and Solution Packaging for Deployment
- Report Writing
- Application support
- DevOps activity such as Environment monitoring or Code deployments (Where Possible)

Examples:

- Teamcenter Config capabilities in India
- Teamcenter DevOps and Test in Romania

The breadth and scale to serve clients anywhere in the world



5

CICs with dedicated PLM skills

24/7

Support provided

260+

Consultants experienced in PLM globally

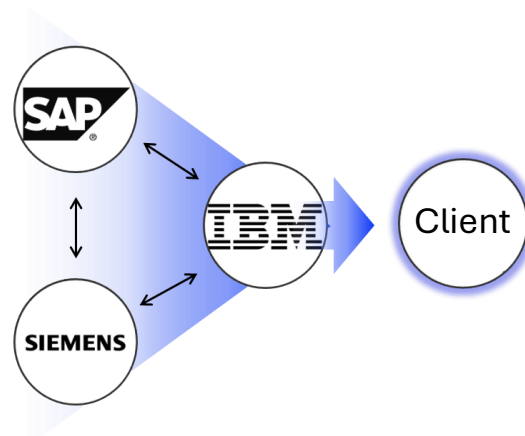
3+

PLM OEM Partnerships

IBM brings a rich set of partnerships, PLM DNA, methods and tools which will enable seamless experience and flawless execution

Example: relevant Alliances for client Teamcenter/SAP Implementation

We will leverage our strategic partnerships with Siemens and SAP to reduce complexity for client and provide a “single source” experience



IBM-Siemens Alliance

IBM is a strategic SI for Teamcenter
IBM and Siemens are partnering on PLM-and-EAM synergies and GenAI powered Engineering and Asset Lifecycle management

IBM-SAP Alliance

IBM and SAP have been strategic partners for decades.
IBM is one of the largest SAP service providers in the world and we're currently implementing and supporting SAP at client

The IBM FACTOR for PLM implementations

Our DNA: As the only hardware manufacturing company (servers and semiconductors) with a Software and Consulting organization, we have PLM in our DNA. We have been enabling PLM internally and externally for decades, across many industries and lifecycles.

Team: Our people have delivered complex PLM programmes with a successful track record as a system integrator. IBM is investing in Digital Engineering capability across the delivery lifecycle and complementary technology

Methods: Our IBM Ascend methodology extends the software delivery standard with IBM's tried and true best practices for enterprise transformation. IBM Ascend principles are agile ready and can be adapted to waterfall and hybrid agile as required.

Tools and Accelerators: We have a rich toolset of frameworks, best-practices, process models, business architectures, operating models and much more, that will accelerate client's implementation journey

IBM Consulting Advantage: As an AI First company, we leverage the latest advancements in technology to the benefit of our clients, by tapping into thousands of pre-existing GenAI Assistants to increase productivity, efficiency and quality



SIEMENS



The Force Multiplier of IBM Partnerships

Partner
(leader in OT
Solutions)

+

IBM
(leader for business
transformation & AI)

=

Best In Class
(Technology combined with industry best practices
and end-to-end integrated value streams)

Example: Siemens and IBM

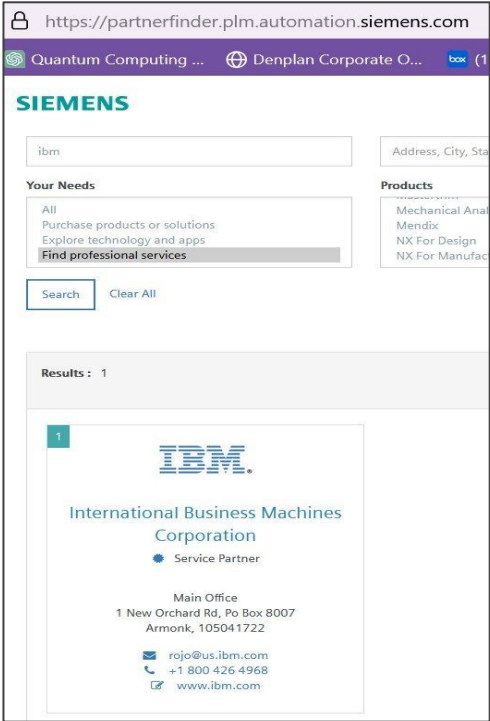
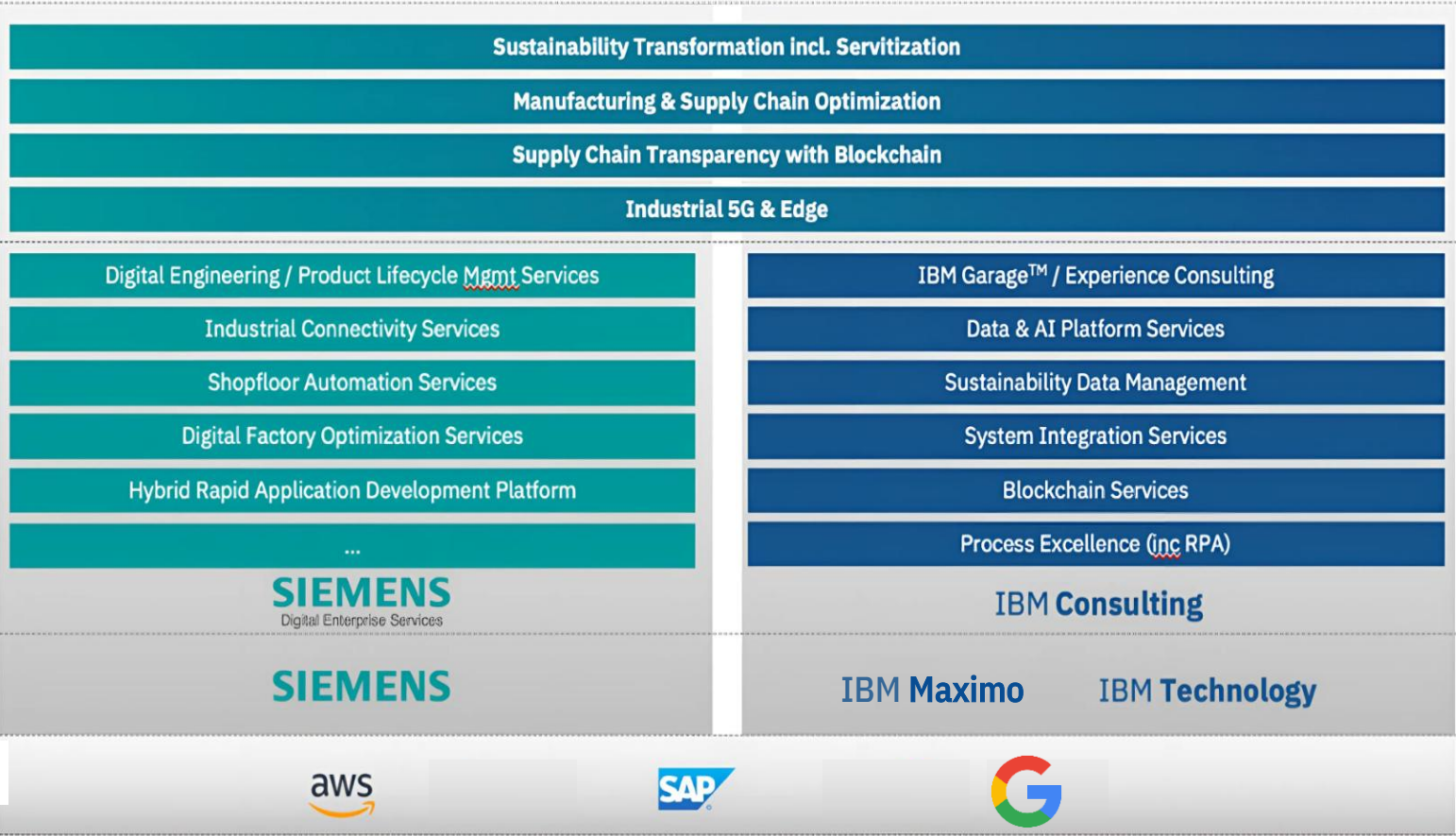
Joint Propositions

"1 + 1 = 3" Logic

Complementary Strengths

SW/HW/Solution Pull-Through

Relevant Partnerships



Through our partnership and experience, we can deliver the value of a SAP and Teamcenter integrated landscape

IBM Consulting

SIEMENS

+



One Approach

The Digital Thread

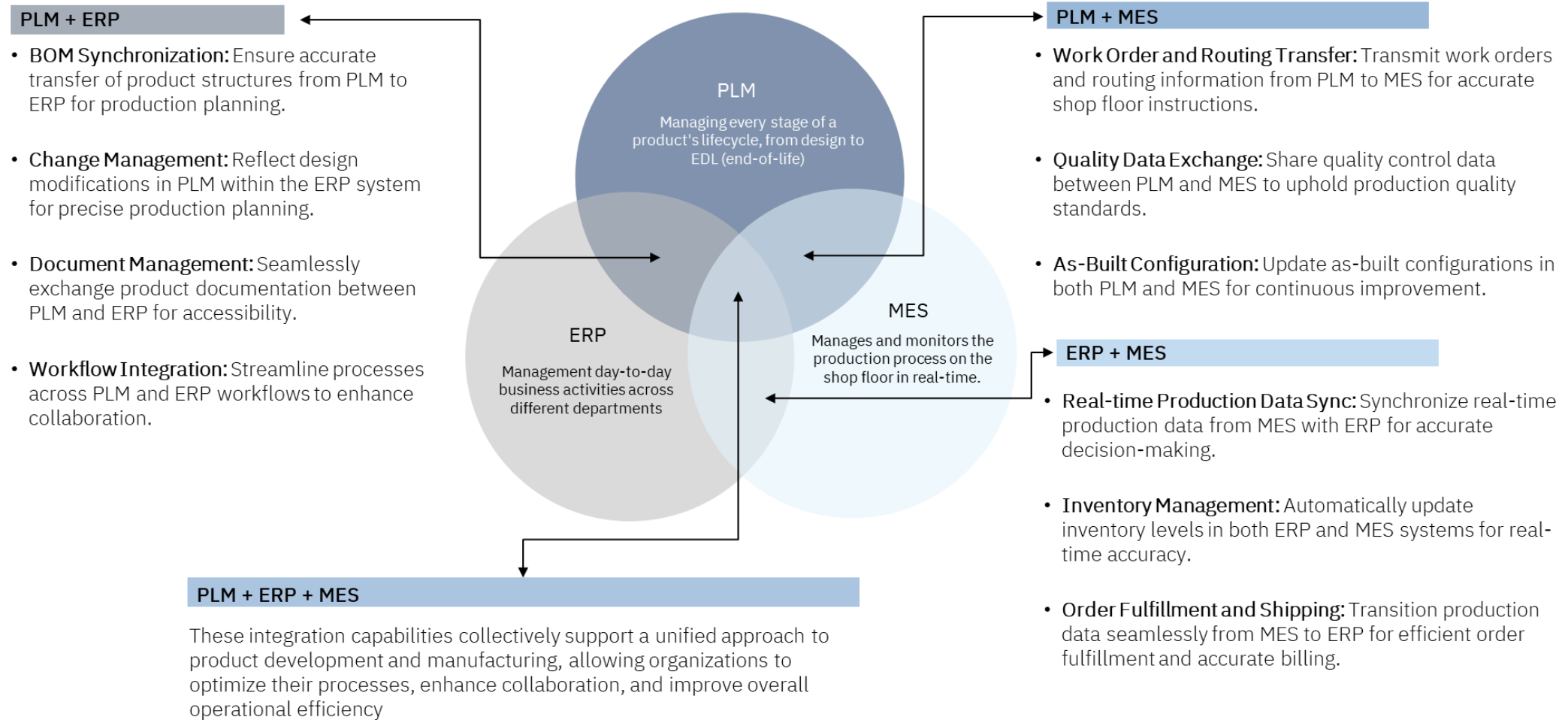
The Road to Instant Value

Siemens and SAP have partnered to integrate their leading PLM and ERP solutions. Co-development of the integration tool PLMSI is based on equal investment and a single approach allowing customer choice and flexibility without worrying about the complexity of integration.

Delivering on the promise of digital threads that run through product engineering, manufacturing engineering and execution – going beyond standard integrations thru prescribed best practice scenarios

Siemens Teamcenter and SAP S/4 HANA will connect with new integration technology that enables a rich set of use cases day 1 to achieve instant-on production value

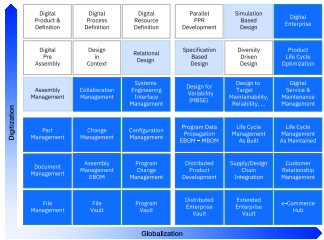
IBM is your partner who can support the entire PLM, ERP and MES workflow



IBM PLM methods, tools and accelerators

BALANCED FOCUS TO BUSINESS PROCESS TRANSFORMATION

We collaborate with the client to define the 36 business transformation capabilities desired for the future within each of the four quadrants.



PRODUCT INNOVATION AND LIFECYCLE MANAGEMENT MATURITY MODEL

The IBM PLM Maturity Assessment Framework allows the team to align on the current state maturity and desired target scoring. Target scoring captures client's vision and industry best practices.



COMPREHENSIVE PLM CAPABILITIES

The maturity assessment and business process transformation matrix will give the client a comprehensive set of PLM capabilities to scale the benefits of PLM transformation.



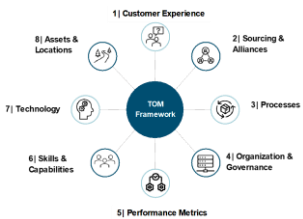
IBM PLM COMPONENT BUSINESS MODEL (CBM)

We partition all business considerations into a manageable number of relatively independent, discrete, modular, and reusable components.



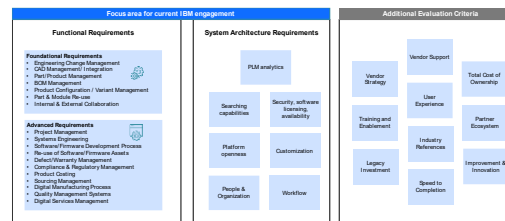
TARGET OPERATING MODEL (TOM)

The TOM Framework breaks out opportunities across 8 categories that will feed into the roadmap for success for the client.



VENDOR EVALUATION CRITERIA

A comprehensive framework to help the client evaluate, prioritize and select the top PLM vendor to partner up with for their PLM transformation journey



IMPLEMENTATION ROADMAP

This gives stakeholders a multi-year view of implementation activities and timelines across business units, separated into multiple levels.



BUSINESS VALUE ANALYSIS

The business value analysis projects financial benefits for the client as the organization advances through the PLM Transformation Journey.



IBM's Consulting Advantage: AI assisted implementation Services

What it is

A library of > **2.3k Generative AI Assistants**, built by IBM for IBM Consultants to dramatically increase productivity and quality of deliverables.

How we will use it

Understand and summarize structured and unstructured data

- Generate User Stories
- Generate Personas
- Generate Test Cases
- Generate Documentation
- ... and more

The impact for client

Productivity improvements that are already factored into price and project plan, which leads to a net reduction in cost for client.

The screenshot displays the IBM Consulting Advantage Catalog interface. At the top, a navigation bar includes links for 'Launchpad', 'Catalog' (which is active), 'Support Center', and 'Docs'. The main header area features a search bar labeled 'Search for Assets, Assistants or Templates' and a toggle switch for 'Show Only Items Selected for Team' set to 'Off'. On the right, there are buttons for 'Deselect Items' and 'Complete configuration', along with a status indicator 'Items Selected for Team (0)'. A left sidebar provides filter options under 'Reset filters', categorized by 'Type' (Assets: 53, Assistants: 13, Demo Assets: 5, Templates: 8) and 'Phase of Delivery' (Advise: 13, Build: 22, Design: 13, Manage: 8, Operate: 10). Below this, 'Service Lines / Areas' are listed with counts: BPO (6), Customer Transformation (2), Cybersecurity (1), Data and Technology Transformation (5), Enterprise Strategy (2), and Hybrid Cloud Management (3). A 'Show 3 More' link is also present. The main content area is a grid of 15 service cards, each with a category, icon, title, description, and a 'Select' button. The cards include: Adobe Assistants (AI & Analytics), Analysis and Renovation Catalyst (ARC) (Consulting), Architecture Kit (Advisory), Asset Developer Portal (consulting), Assisted Solutioning (Solutioning), Boomerang CIO (Development), Boomerang Flow (Automation), Box Folders (Collaboration), Candidate Microservices Advisor (CMA) (Consulting), Candidate Microservices Advisor - Demo (Consulting), CBM.ai (Solutioning), CI - Content Intelligence (consulting), CIP - Cognitive Invoice Processing & CW ... (Consulting), Cloud Advisory Tool (Advisory), and Cloud Transformation Insights (CTI) (Consulting). Each card also indicates an 'Associated Cost'.

2. Delivery Method

Our PLM implementation methodology, IBM Ascend, aligns with our partners

IBM Ascend creates structure and agility

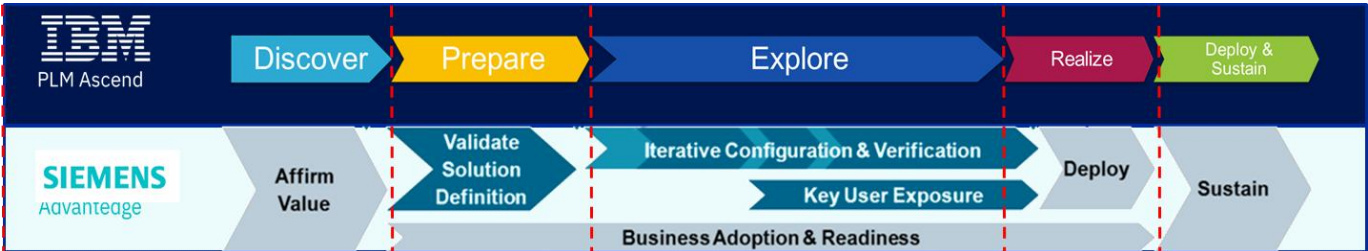
Our delivery methodology provides a comprehensive approach to innovation and transformation that brings designers and developers together with your business stakeholders to quickly understand and bring solutions that can dramatically impact your business.

The focus of IBM's added method practice content includes Enhanced Project Launch, Project Management Office, Agile@IBM, Design Thinking, Digital Change, Cloud & Analytics and Global Client Innovation Centres.

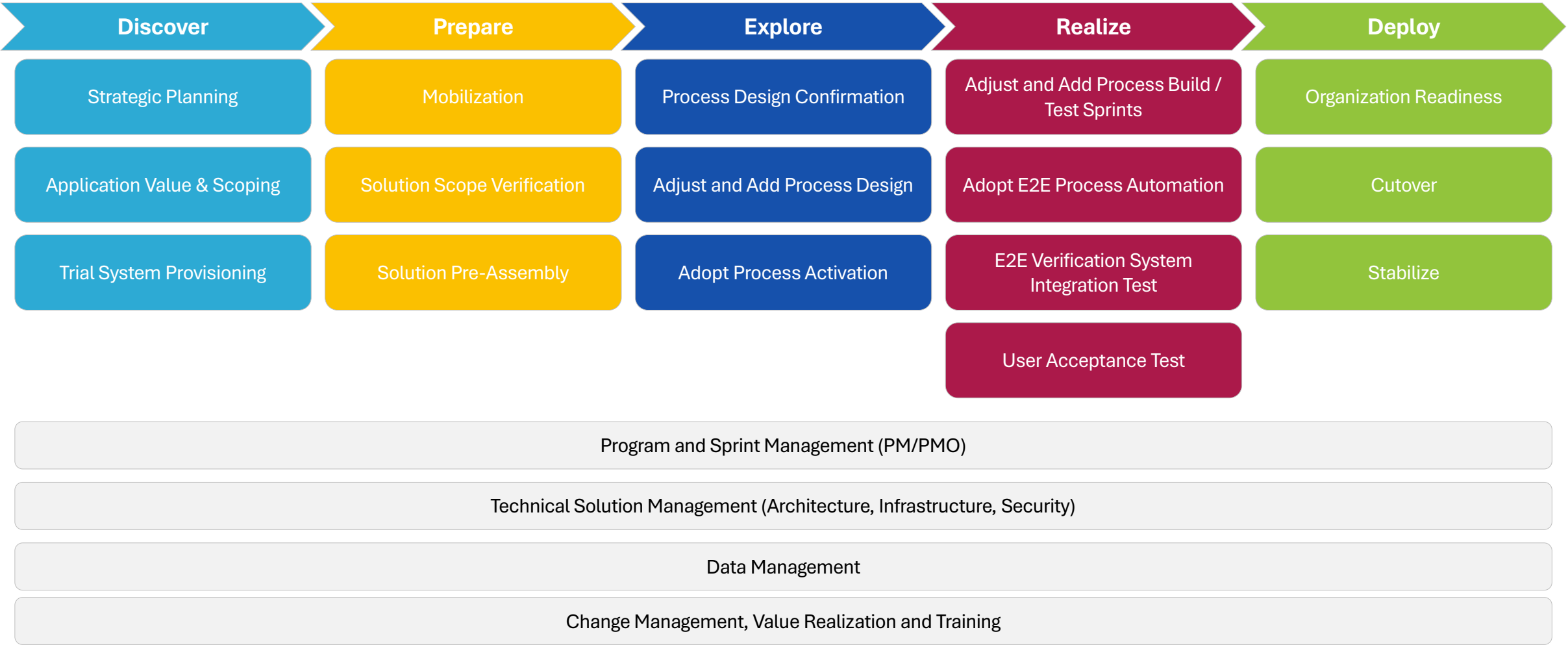
- Enhance Project Launch
- Agile@IBM
- Design Thinking
- Digital Change
- IBM Cloud & Analytics
- Global Delivery



IBM and Siemens Method Alignment



The building blocks of our Ascend method

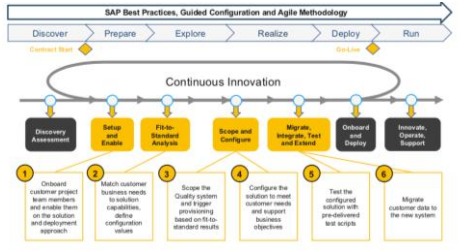
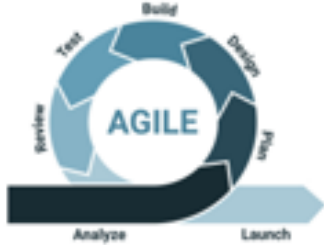


Because one size does not fit all, we will take the best elements and will jointly tailor the approach together with client

Our experience shows we often need to take a blended approach to the method to suit the specific client culture, and situation.

We can take the important ingredients from the different methods to get the best approach.

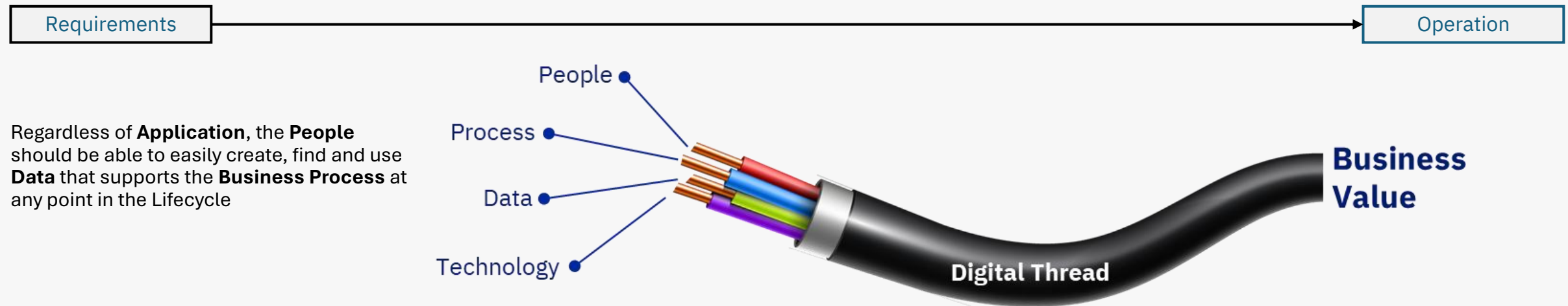
For example, we will often develop the discoveries, processes & solutions in sprints, but deliver the test and training in a more waterfall approach to make best use of the time and resources.

IBM Ascend	SAP Activate	Siemens Advantedge
		
Agile	IBM Garage	IBM Transformation
		

Method
Adoption for
client

The goal of PLM is to enable the digital thread, so our delivery approach has People, Process, Data and Technology as the foundation.

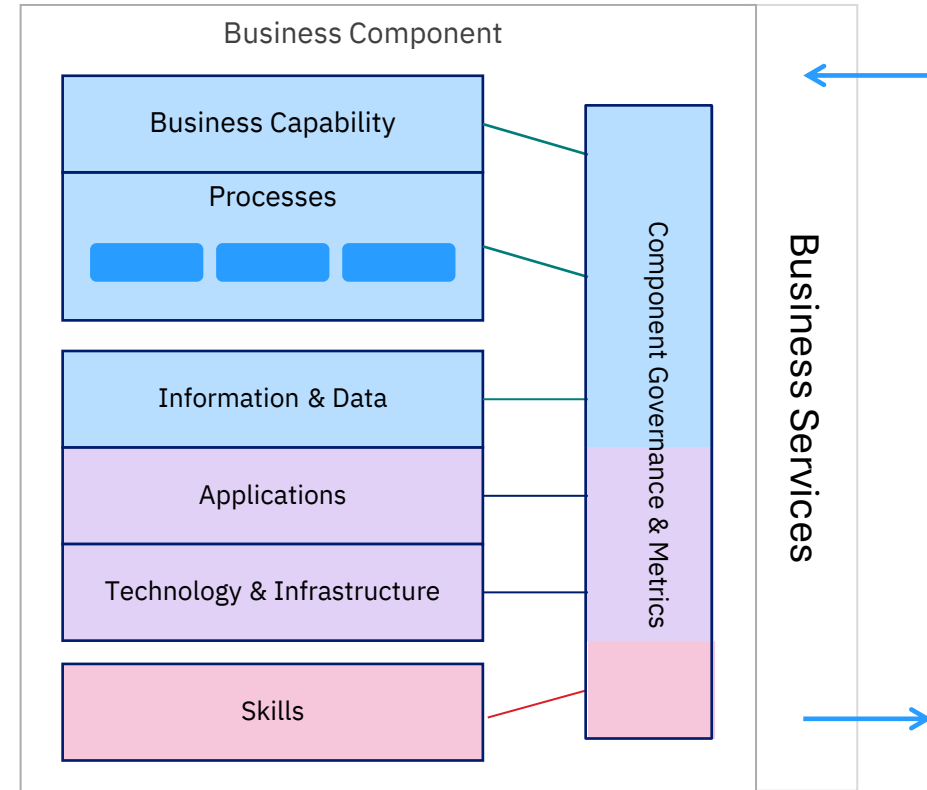
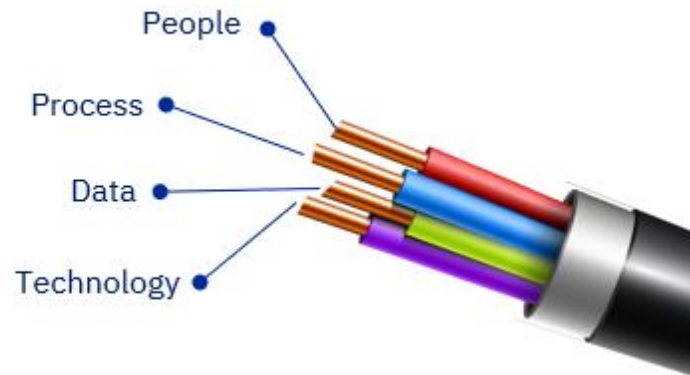
At the heart of any PLM related business, is cost associated with one of your most valuable assets, your data. The need to prevent duplication of data, guarantee the provenance of your data, allow data to be created with minimal effort and maximum control, and, over time, the need to be able to navigate data across the entire lifecycle of a products development. This navigation is not just a time saving activity for your employees or regulators but can also be the deciding factor in your ability to keep a product line in operation.



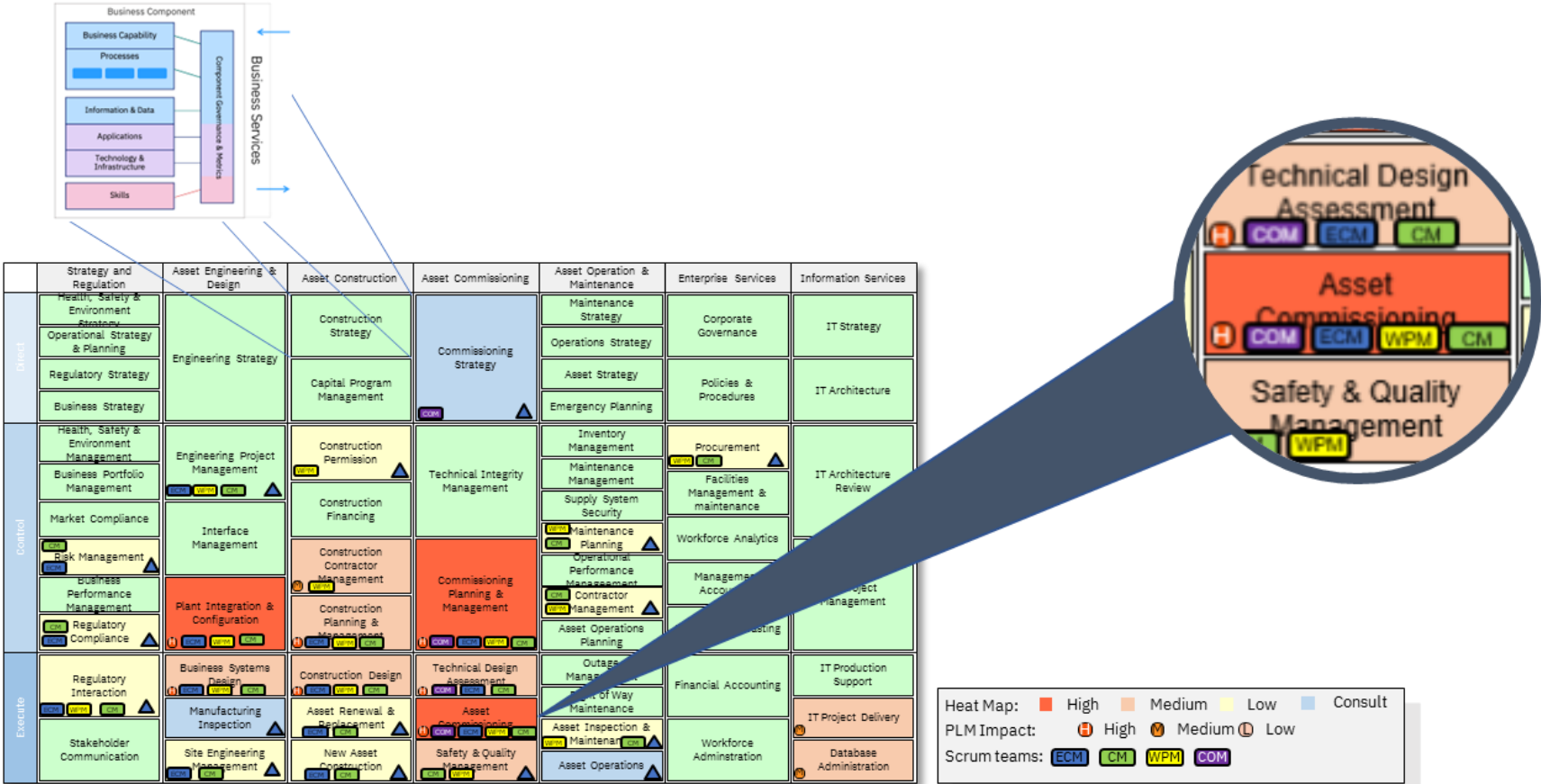
We break the digital thread problem into business related chunks called Business Components

What has worked well In Digital Engineering implementation projects, regardless of the chosen modelling standard, is the use of Component Business Modelling (**CBM**) to assess the impact of the implementation across multiple factors.

The CBM model is made up of Business Components, each made up of multiple dimensions (People, Process, Data ,Tools) which allows for combined attribute heat maps to truly understand the hot spots. This can be used for prioritisation to identify where improvements are needed to achieve the Target State of the programme scope.



The components fit into a Component Business Model (CBM) that allows for prioritisation based on many dynamic heatmap perspectives.



A critical part of the CBM model, and ability to successfully implement technology, is the Business Process.

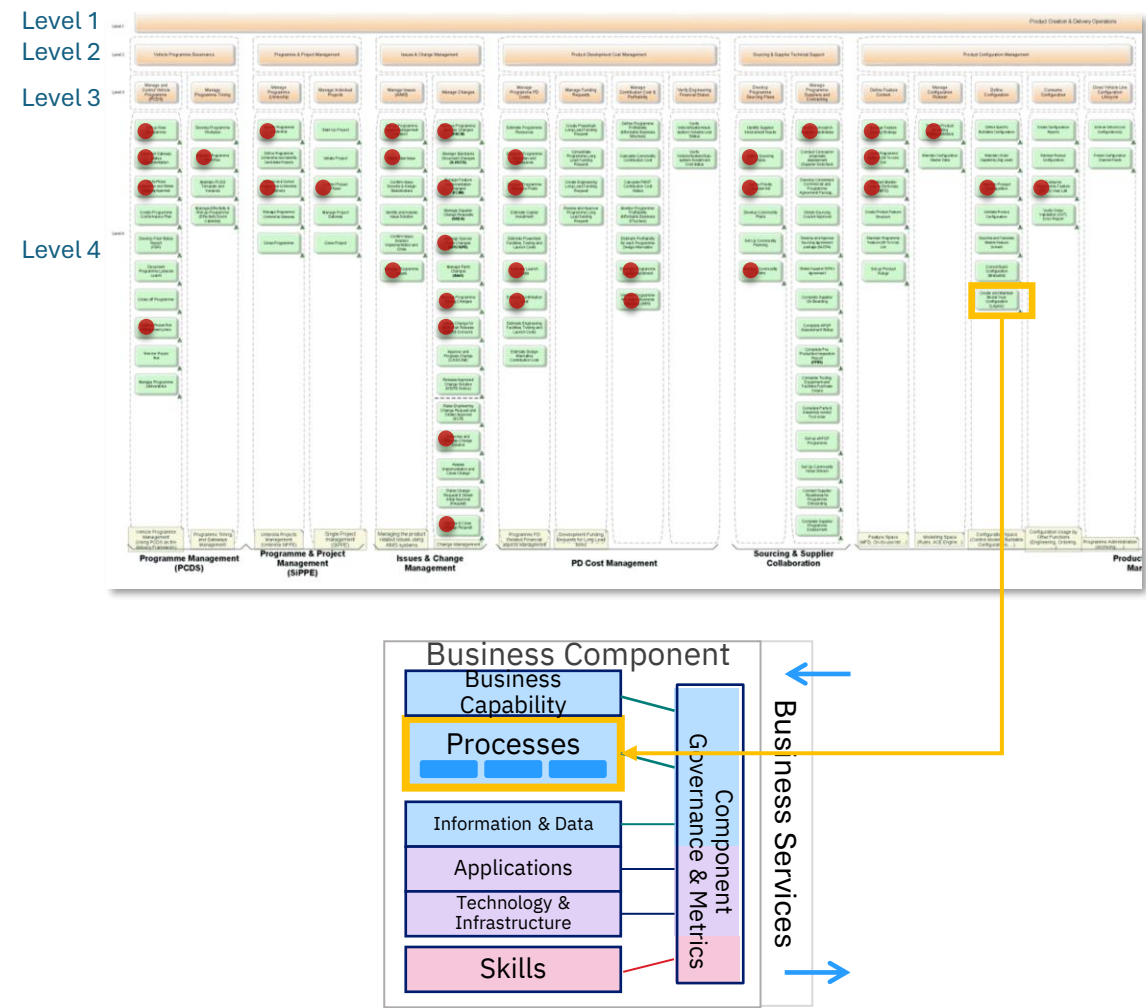
With any engagement, we typically model business processes in a way that supports connectivity between the Business Process and:

- The Requirements and or Epics and User Stories
- Deliverable Scope and Releases
- Technical Solutions
- Training Material
- Methods/How to Guides

Additionally, the process landscape or catalogue is strong aid to mapping out the impact of deployable scope- i.e. which processes, scale of change.

This is done as part of our standard approach, but is a strong aid when combined with CBM in identifying through heat mapping the direct and indirect impacts during and SAP / Teamcenter implementation, and are a key input to the People Change and training needed to support the ‘Go Live’

Process catalogue or Process Classification Framework (PCF)

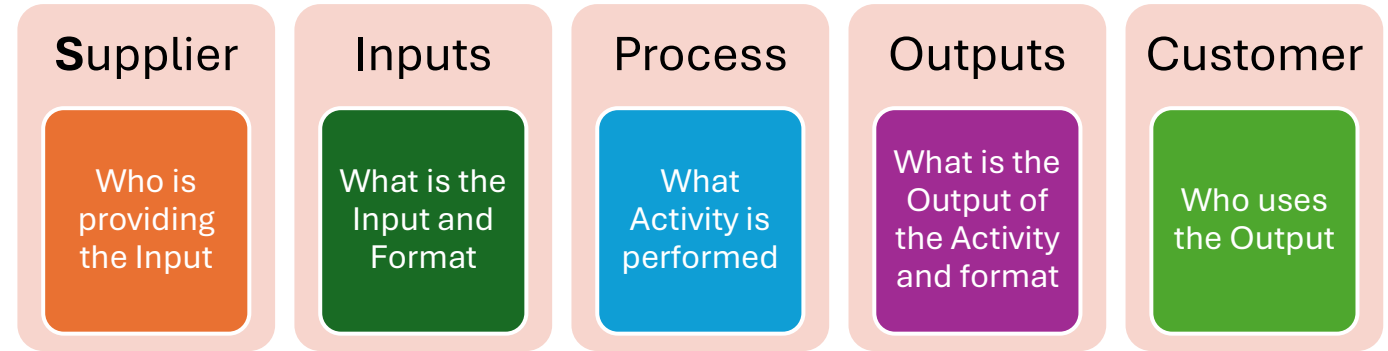


Each process and activity is analysed based on SIPOC

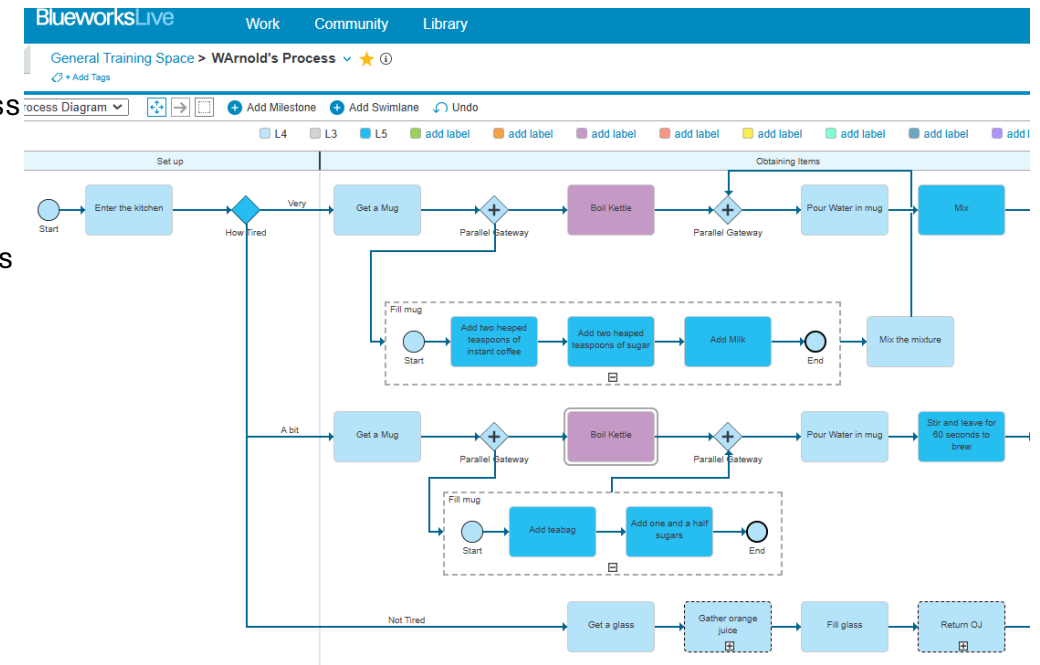
When we are developing new processes, we follow a SIPOC method for developing the base processes.

Some level of Process improvement can be done during the elicitation stage, often driven from business requirements / needs statements generated through our Design Thinking workshops.

When the processes are interfaced (to other processes) and tool specific methodologies developed (APQC Level 5) we apply Lean principles to the Business Processes (APQC Levels 1-4) to apply improvements offered by the Solution (ie PLM).



IBM typically uses BlueWorks Live to perform the Process modelling but can also utilise the clients own modelling solutions if preferred.



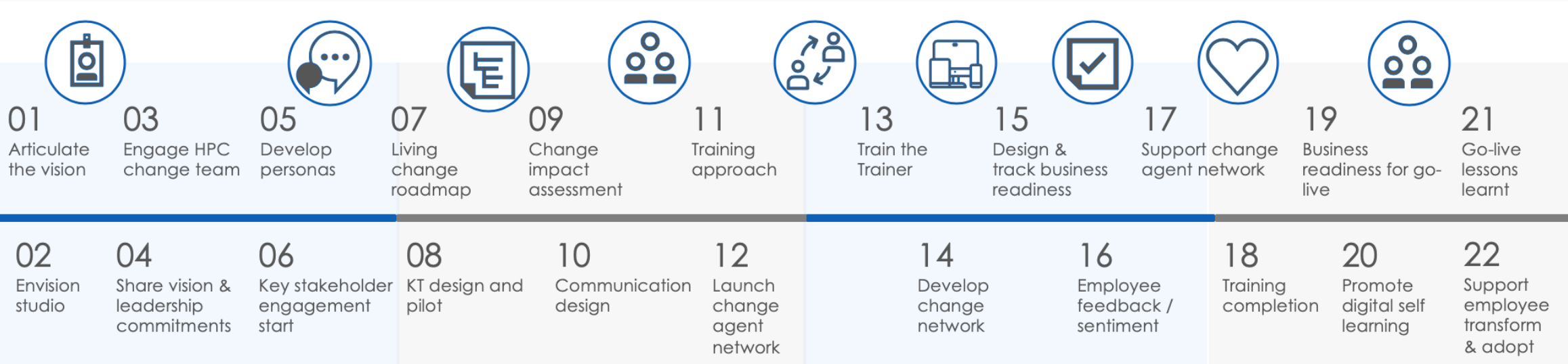
A big facet for success is in how the people can adapt and adopt to any change in the status quo.

Success will be high long-term user adoption of the system, deep user understanding of the new and enhanced Digital Engineering end to end processes and system and evidence of collaboration and support across the user groups to ensure high data quality, process compliance that will stand the test of time.

The Digital Change Roadmap (right) depicts the different change management interventions we can undertake during the entire programme to ensure we cater for the different people's needs.

The change management activities and business interventions are tightly mapped and aligned to each Working Group.

The change team will work closely and collaboratively with each Working Group to ensure it has a deep understanding of the new processes and system, so that they can articulate what these new processes mean for the different users of the system and how those users will have to work, behave and interact differently



With AI, we create personas that allow us address change on a personal level

Development of personas allows us tailor the future user experience with empathy

By combining inputs from interviews, process, Job specifications, industry trends, we can quickly produce persona packs, as well as generate ‘movies’ to see the before and aftereffects of new technology / process deployment

MEET
EMILY



Age: 30
Gender: Female
Address: UK
Occupation: Document Controller

RESPONSIBILITIES

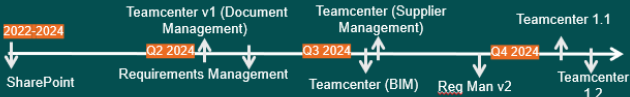
Emily has over 10 years of experience in document control across various industries. She has a strong background in quality management and has worked in several start-ups, navigating the challenges of implementing new processes and technologies. Emily is well-versed in industry standards and regulations, her responsibilities include:

- i. Creating and managing document templates
- ii. Manually controlling changes to mastered meta-data (e.g. reference codes, IDs) and ensure compliance with industry standards
- iii. Managing the document review and release processes ensuring the release process is adhered to in line with quality needs
- iv. Coordinating with suppliers and stakeholders to ensure timely and accurate document delivery
- v. Monitoring and reporting on document status and quality

ABOUT EMILY:

- Emily is a detail-oriented and organized individual with a passion for ensuring compliance and accuracy.
- She is a strong communicator and enjoys working with cross-functional teams to implement process improvements.
- Emily is also a quick learner and is comfortable with new technologies and tools

TIMELINE OF CURRENT IMPLEMENTATIONS



Quotes

- "I can't currently see where errors are being made in a process and how to intervene. I do not have the reporting capability to spot these issues which are causing many downstream issues for me"
- "Engineers are producing deliverable content which are in different formats and difficult for me to work with. There is no set template for them to use which ensures the consistency needed"
- "My goal is to ensure quality processes and procedures are adhered to resulting in properly formatted documents that are accurate marked to the standards and regulations. I believe that automation and process improvement are key to achieving this goal."

CHALLENGES	PAIN POINTS	REQUIREMENTS
1. Ensuring compliance with industry standards and regulations	➤ Data has not been mastered which leads to manual processes which are not suitable for industry & volumes	✓ To master meta-data for automated document management
2. Implementing process improvements and automation	➤ Manual errors and inaccuracies in document metadata	✓ Standardized naming conventions and formatting
3. Managing multiple stakeholders and suppliers	➤ Inconsistent naming conventions and formatting	✓ Real-time visibility into document status and quality
4. Maintaining accurate and up-to-date documentation	➤ Delays in document review and release processes	✓ Efficient document review and release processes
5. Coordinating with cross-functional team	➤ Limited visibility into document status and quality	✓ Ability to track and manage changes to metadata and documents

(play video)



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21



3. Program Governance

Building with the right team and structure



IBM's “7 Keys to Success” method has been proven across countless enterprise transformations

At IBM we recognise that the success of every transformational programme depends heavily on a Project Governance Model that is well-defined, well-understood, and well-executed across every level of the organisation.

Your programme needs commitment from IBM leadership to bring expertise from an industry and technical perspective make the programme a success.

The governance model forms the foundation of a great partnership and a disciplined approach to solution delivery that meets the goals of the initiative and of the organisation.

The approach is underpinned by our 7 Keys to Delivery Success:

1. Work and schedule are predictable
2. Business benefits are being realized
3. Stakeholders are committed
4. Scope is realistic and managed
5. Team is high performing
6. Risks are being mitigated
7. Delivery organization benefits are being realized



We recommend the establishment of a “Design Authority” to create alignment of technical best practices with client’s Enterprise Architecture standards

The **Design Authority** is typically made up of the client Enterprise Architect(s), Head of Data, and relevant members of other in-flight projects.

This is a forum that facilitates the reviewing of High-Level Designs and Solutions, to authorise that they are simultaneously following any client rules, adopting Out of the box (or controlled config and minimal customisation) and impacts to or received from other parallel programs of work.

Typically, these take the form of EARB (Enterprise Architecture Review Board) meetings and regular Design Decision session, as well as more traditional RAID reviews

Typical Roles of the Design Authority

Typical Technical Roles

- Enterprise architect: Guides technical decisions
- Solution architect: Provides guidance on technical design
- Security expert: Provides guidance on security
- Infrastructure specialist: Provides guidance on infrastructure
- Application specialist: Provides guidance on applications

Other Roles

- PMO Lead, Business Representation (e.g. Product Owner) , Vendor representative,

Typical Business Roles

- Business architect: Covers business aspects
- Data architect: Covers data aspects
- Service manager: Covers service aspects
- Benefits manager: Covers benefits aspects
- Business implementation manager: Covers business implementation aspects
- Business analysis manager: Covers business analysis aspects
- Test manager: Covers testing aspects



4. Implementation Approach & Schedule

Each of the work groups in scope will follow the IBM Ascend process with common phases and agile elements

IBM Ascend Phases



Sprint Plan



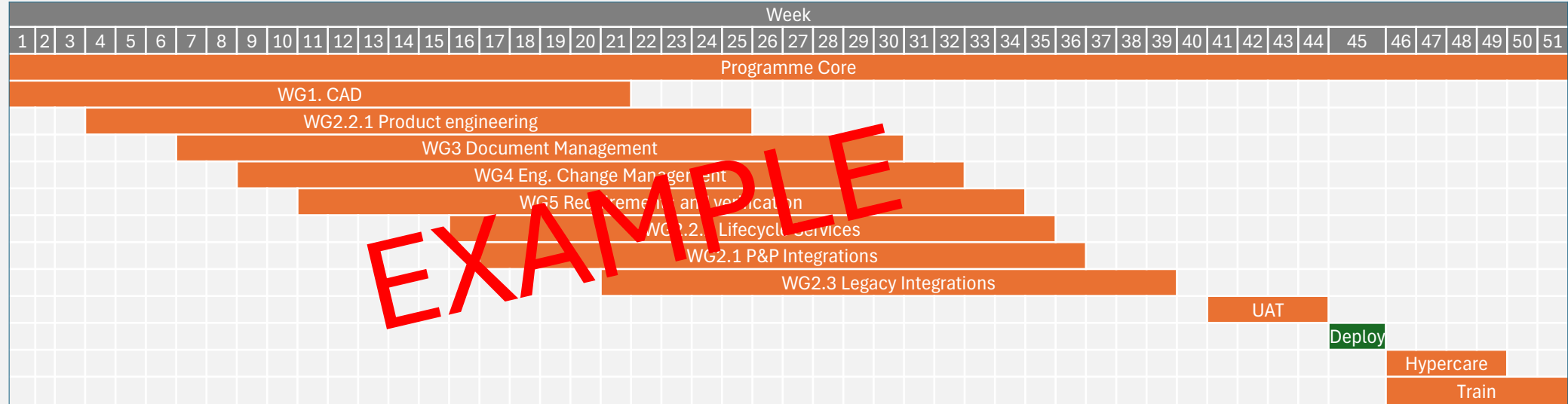
Agile Ceremonies

- | | | |
|--|--|--|
| Daily | Weekly | Bi-Weekly |
| <ul style="list-style-type: none">• Daily Scrum• User Story Updates | <ul style="list-style-type: none">• Backlog Grooming• RAID Management | <ul style="list-style-type: none">• Sprint Planning• Sprint Retrospective |

Project plan

Option A (Base Case)

- Delivers the full scope
- Is aligned to a release with SAP
- Core Teamcenter Installation
- All workgroups (8)



5. Deliverables

Deliverables across workstreams in alignment to the Ascend Phases

	Deliverable	Workstreams Impacted			
		Solution	P&P	IT & Security	Data Quality
Discover	Project Initiation Document	X	X	X	X
	Integrated Project Plan	X			
	Requirements	X	X		
Prepare	Data Model				X
	Teamcenter Deployment Architecture and Infrastructure Design	X		X	
	Overall Solution Architecture	X		X	X
Explore	Process Definitions	X	X	X	X
	Solution Configuration	X			
	Fully configured and accepted solution	X			
	Solution Integrations	X		X	
	Customer Document Portal	X	X	X	
Realise	Unit Test Plan	X			
	SIT Test Plan & SIT signoff	X			
	UAT Test plan & UAT signoff	X	X	X	
	Documentation (ie. user guide, admin guide)	X	X		
	Go Live Plan	X		X	
Deploy	Training Material / Superuser Training	X	X	X	
	Communications	X	X		
	Hypercare	X		X	

