



EXCELERATE '22

NO LIMITS

Genba Voices from the Shop Floor select iBASEt at GE Edison Works



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Today's Agenda

- Drivers for Change
- Researching the Landscape
- Defining the Need
- Selecting the Solution
- Structuring the Delivery



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0:02

Every 2 seconds an aircraft with GE engine technology* is taking off somewhere in the world

2,200+

of these aircraft are in-flight, carrying between 50 and 500 passengers

300,000+

people in the air right now depending on our engines



*Includes joint venture engines built by CFM and EA
CFM International is a 50/50 JV between GE and Safran Engines
EA is a 50/50 JV between GE and PW

2/3

fighters in the U.S. fleet are powered by GE Aviation

2/3

helicopters in the US fleet are powered by GE

1/2

of the bombers in the Air Force fleet are powered by GE Aviation

3/4

gas turbine powered combat surface vessels within global Navy fleet



*Includes joint venture engines built by CFM
CFM International is a 50/50 JV between GE and Safran Engines

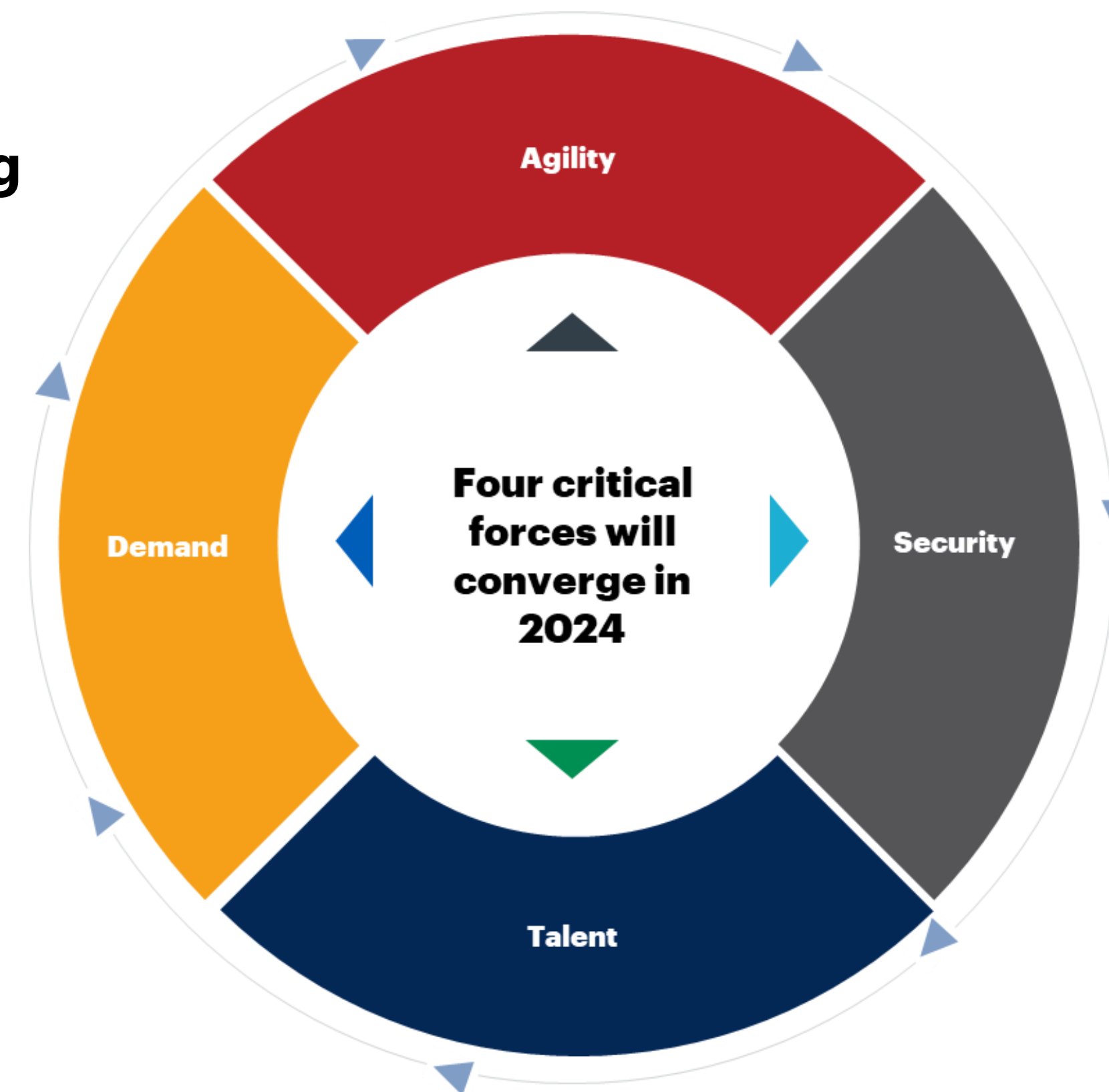
We were driven to change by our Market

Production **demand** is rapidly increasing

The authorization of \$782 billion in defense funding on March 15, 2022, signals the start of significant production demands on our business.

Competition for **talent** is tight

14% of active engineering openings in the US are in A&D. To attract and upskill the best talent, we must equip them with the tools to be successful.



The DoD requires us to be **faster & smarter**

The DoD Software Modernization Strategy released on February 2, 2022, lays out expectations of mission partners, including in harnessing the Cloud.

Corporate Cyber Security **is** National Security

Our customer has renewed their risk focus, current events are driving more cyber attacks, and our supply chain is now being asked to do more than ever before.

NO LIMITS

More importantly...
...we were driven to
change by our Genba

“Go to Where the Work is Done”

In Japanese, Genba means “the actual place”

In business, Genba is where value is created

In manufacturing, the Genba is the shop floor

Meet Bryan – our first Genba who helped shape our requirements, selection, and solution



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Working with Gartner, we researched the landscape

- Better defined Manufacturing Operations Management (MOM)
- Learned about the top solutions and capabilities
- Connected with A&D industry peers
- Short-listed suitable options to consider
- **Listened to our Genba throughout the process**

STIMULONS

Working with
Accenture, we
articulated what
the Genba needs

It's not What you Say – It's How you Say It

Key to successfully aligning our Genba's needs with our potential solution options was a willingness **to change how we present the needs**

Accenture's perspectives and formats were easier to digest for RFP respondents, driving a more robust discussion **with fewer "gotchas" buried in paragraphs**

Simplicity and clarity were key to our RFP. And to our Genba.

To break down our needs, **Archetypes were defined** at the cross-sections of Product Type and manufacturing Lifecycle Stage

These helped prioritize our MOM journey - through capability definition, business architecture, template definition, and deployment planning

Type of Product

| | Lifecycle Phase | | |
|-------------------------|-----------------|---------------------------|--------------|
| | Development | Flight Class / Production | MRO / Spares |
| Special Processes | 2 | 2 | 3 |
| Component Manufacturing | 1 | 2 | 3 |
| System | 3 | 3 | 3 |
| Assembly | 1 | 0 | 3 |
| Test | 3 | 3 | 3 |

Key:
 0 – Immediate
 1 – Horizon 1
 2 – Horizon 2
 3 – Horizon 3



Simplicity and clarity were key to our RFP. And to our Genba.

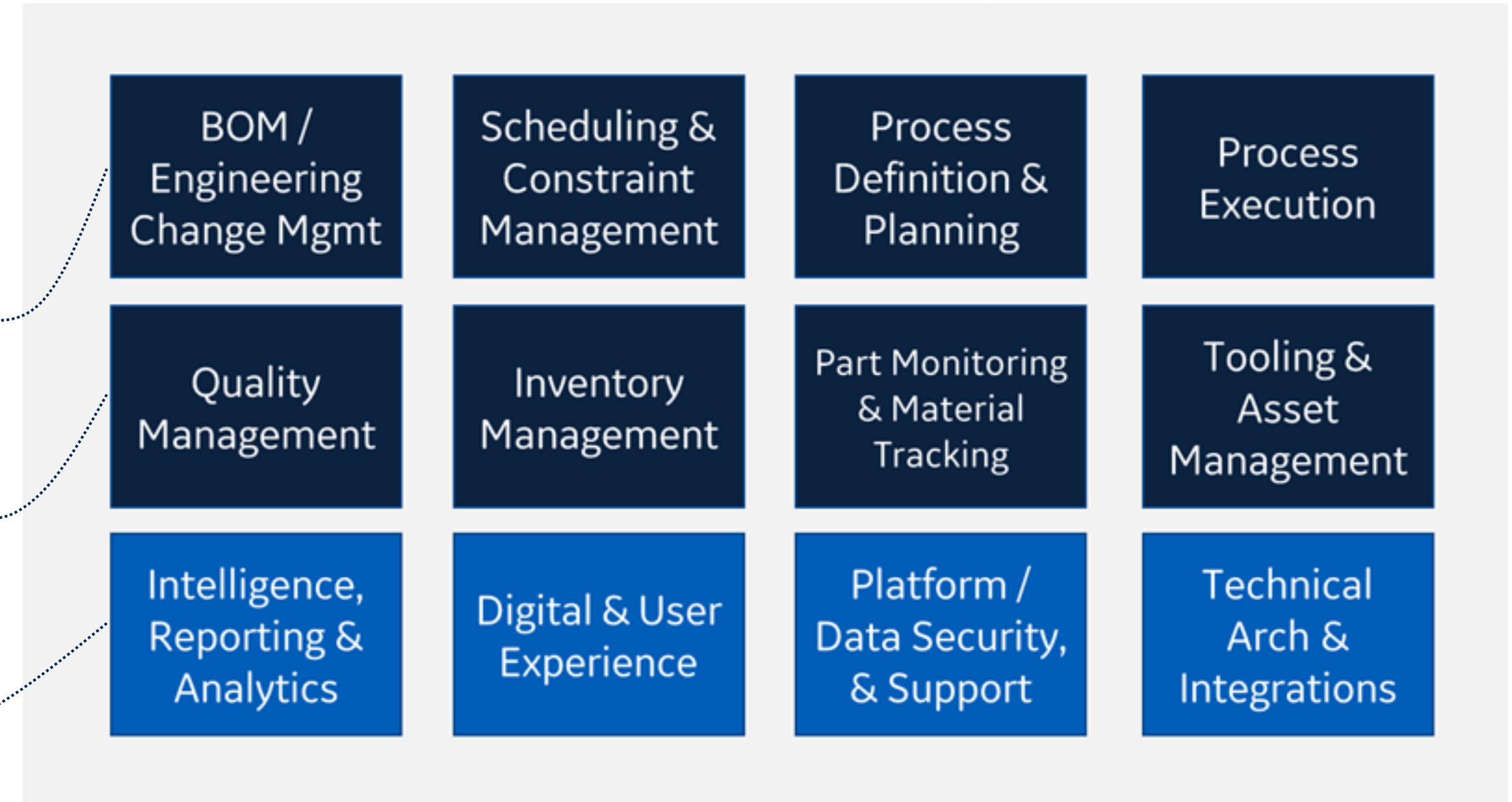
The RFP was broken up into 12 distinct capabilities, **both functional and non-functional**

From these, story boards outlined **critical functions and “stretch” goals** for a potential partner

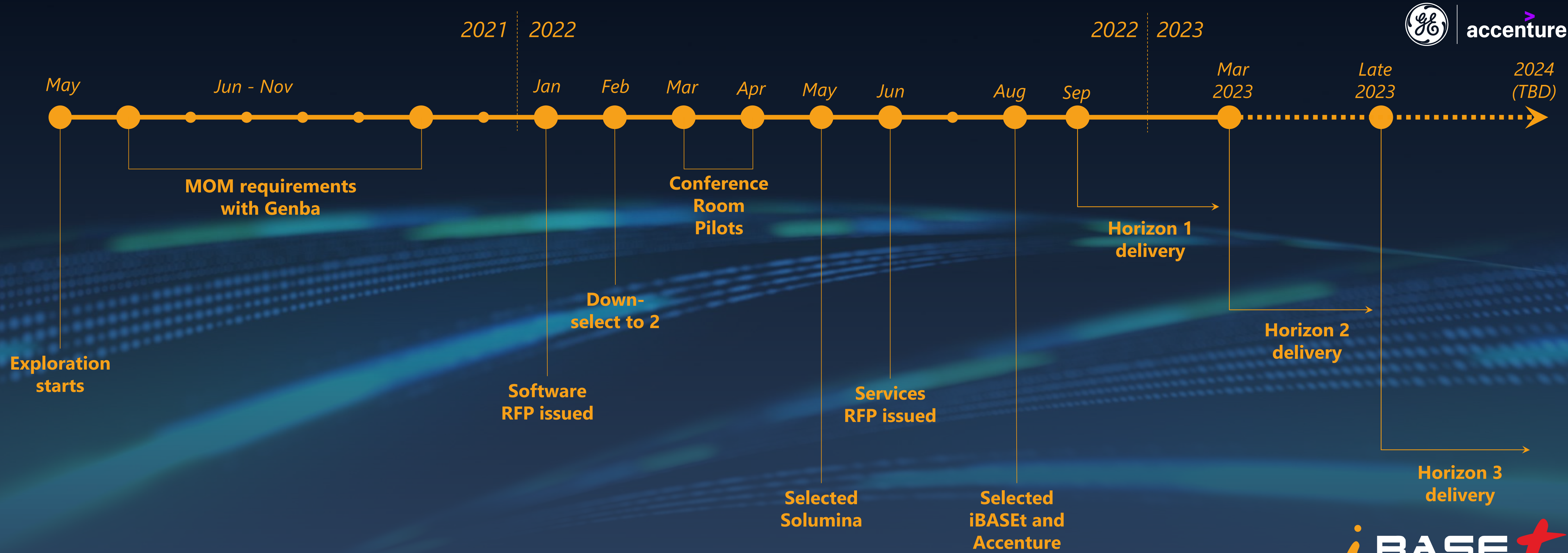
| Capability 1: BOM / Engineering Change Management | |
|---|---|
| Critical Requirements | Advantages in Scope by Horizon |
| <ol style="list-style-type: none"> Ability to integrate with Siemens Teamcenter and Rapid Start for BOMs and 3D models, in order to visualize the part BOM in the BOM to build against it while receiving the order Ability to integrate with ERP Oracle in order to send the BOM Ability to support alternative/substitute parts, cross-references (as required), and non-validated build parts Ability to support data and serial efficiency Ability to demonstrate relationship between engineering BOM, material BOM and consuming the material BOM against the work instructions Ability to support multi-speed: Ability to manage engineering changes for development type parts in an agile way while having strong controls around production parts, configurable by life cycle stage and program Ability to support phantom parts in the bill of material Ability to define and consume alternate and variable quantities Ability to support manufacturing related engineering changes Ability to do bill of material reconciliation to production (BOM, MBOA, OROA, PBOA, PBOA) Ability to support recipe management (special processes and heat) Ability to manage MES/IIoT data engine build up tool, similar to pre-release BOM Ability to coordinate data modifications for development assembly | <ul style="list-style-type: none"> Horizon 2: Production/Flight Class Assembly, Development Assembly, Development Component Manufacturing Horizon 3: Development Special Processes, Production/Flight Class Special Processes Horizon 3: Production/Flight Class Component Manufacturing, etc. |
| Required Integrations (and key data entities needed) | |
| <ul style="list-style-type: none"> PLM - Siemens Teamcenter/Rapid Start (BOM, Characteristics, 3D model) ERP - Oracle (MBOA) | |
| Demo Use Case | |
| Integration with PLM to pass BOM, 3D model, and characteristics to the BOM | |

| Capability 2: Quality Management | |
|---|---|
| Critical Requirements | Advantages in Scope by Horizon |
| <ol style="list-style-type: none"> Ability to integrate with Siemens Teamcenter and Rapid Start for BOMs and 3D models, in order to visualize the part BOM in the BOM to build against it while receiving the order Ability to integrate with ERP Oracle in order to send the BOM Ability to support alternative/substitute parts, cross-references (as required), and non-validated build parts Ability to support data and serial efficiency Ability to demonstrate relationship between engineering BOM, material BOM and consuming the material BOM against the work instructions Ability to support multi-speed: Ability to manage engineering changes for development type parts in an agile way while having strong controls around production parts, configurable by life cycle stage and program Ability to support phantom parts in the bill of material Ability to define and consume alternate and variable quantities Ability to support manufacturing related engineering changes Ability to do bill of material reconciliation to production (BOM, MBOA, OROA, PBOA, PBOA) Ability to support recipe management (special processes and heat) Ability to manage MES/IIoT data engine build up tool, similar to pre-release BOM Ability to coordinate data modifications for development assembly | <ul style="list-style-type: none"> Horizon 2: Production/Flight Class Assembly, Development Assembly, Development Component Manufacturing Horizon 3: Development Special Processes, Production/Flight Class Special Processes Horizon 3: Production/Flight Class Component Manufacturing, etc. |
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| Capability 3: Intelligence, Reporting & Analytics | |
|---|---|
| Critical Requirements | Advantages in Scope by Horizon |
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NO FLIGHTS STARTS



NO LIMITS

Our Solumina MOM implementation snaps together four major building blocks...

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Process

Our Genba knows their process and requirements

Product

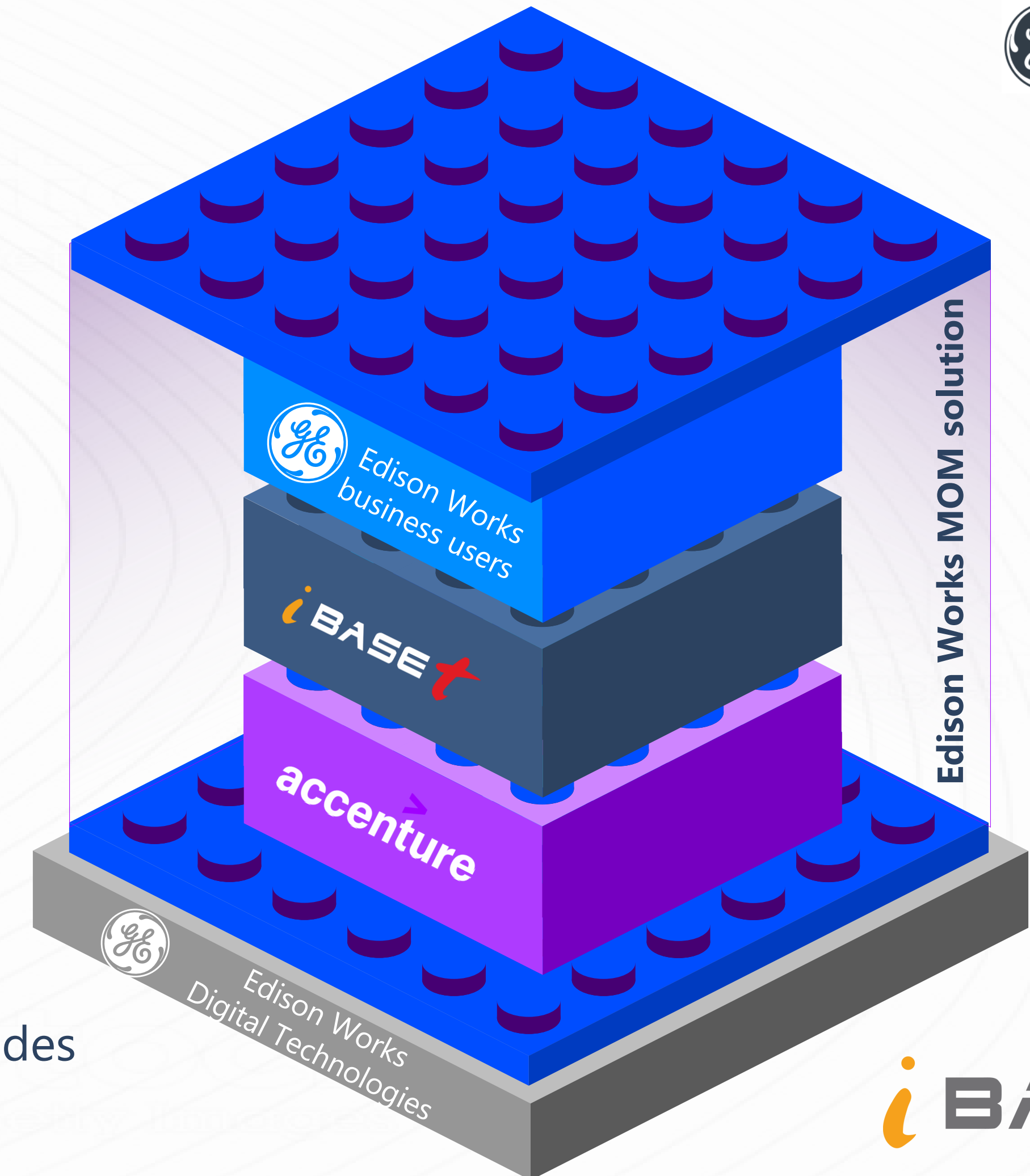
iBASEt brings industry best practice capabilities

People

Accenture enables change across the organization

Platform

EW Digital Technologies provides the technical foundation



accenture



...Strengthened by what each partner does best



+



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- Navigation of market forces
- Classified product development
- Emphasis/knowledge of Lean

- A&D best practices, user stories
- Complex, discrete specialization
- Comprehensive product, OOtB

- Broad A&D process expertise
- Change enablement practices
- Systems integration architecture

NO LIMITS



Key Takeaways

- Focus on your Genba. They have all the answers. Go listen.
- Be humble. Respect that you can't DIY all of it.
- The right formula combines user stories and change enablement.
- Solid product management wins over fancy customizations.
- The worst state of your process is the current state.



THANK YOU

QUESTIONS?