



**11th ICCRTS
Coalition Command and Control in the
Networked Era**

I-038

**Managing Virtual
Networks on Large
Scale Projects**

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Boeing Organization Effectiveness
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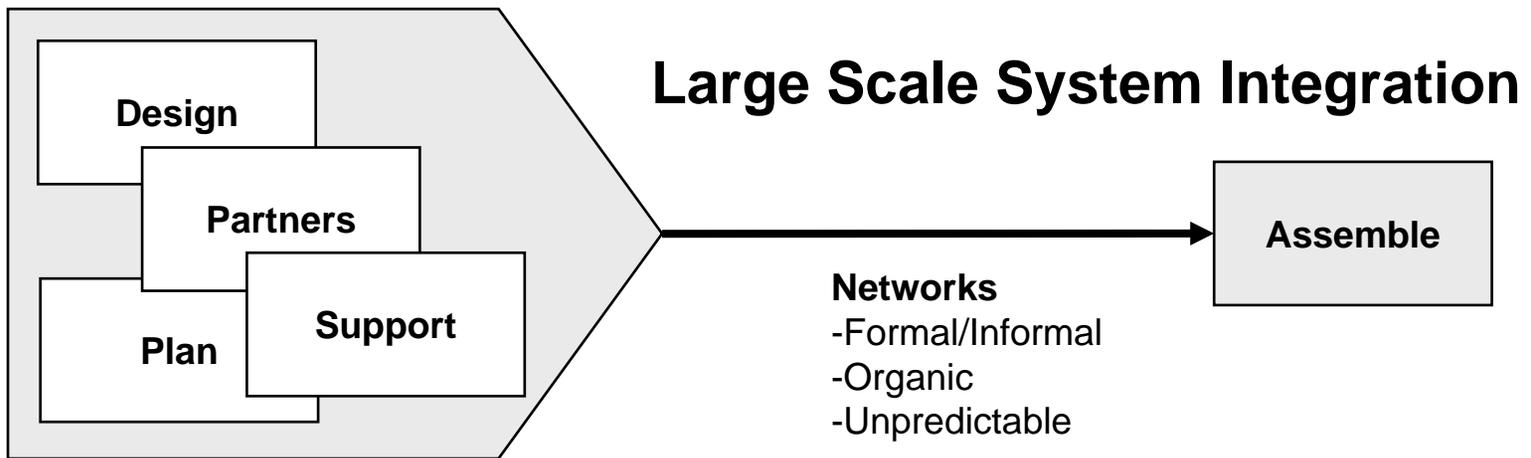
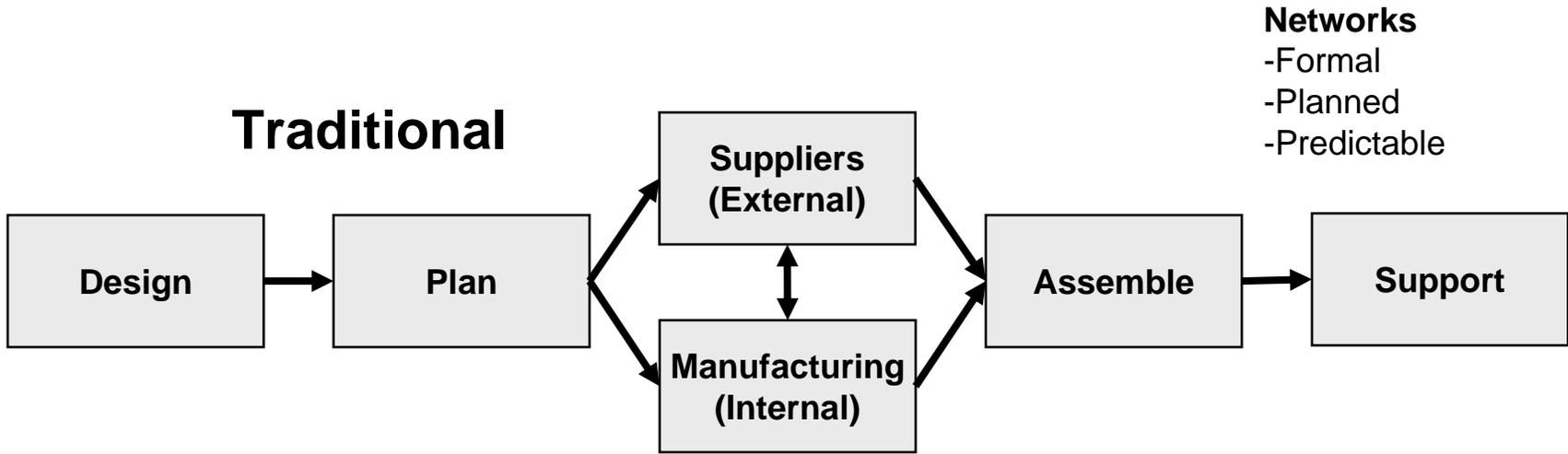
Agenda

- **Environment**
- **Keys to Success**
 - Vision
 - Technology
 - Collaboration
- **Organic Networks**
- **Conclusion**

Environment

- **Large Scale Distributed Program**
 - Multiple subsidiaries and partners in multiple locations
 - Designing and moving large sections
 - Cultural diversity
- **Large Scale Integrated Networks**
 - Just-in-time design tools and processes
 - Coordinated design and configuration control
 - One system interfacing with numerous legacy systems

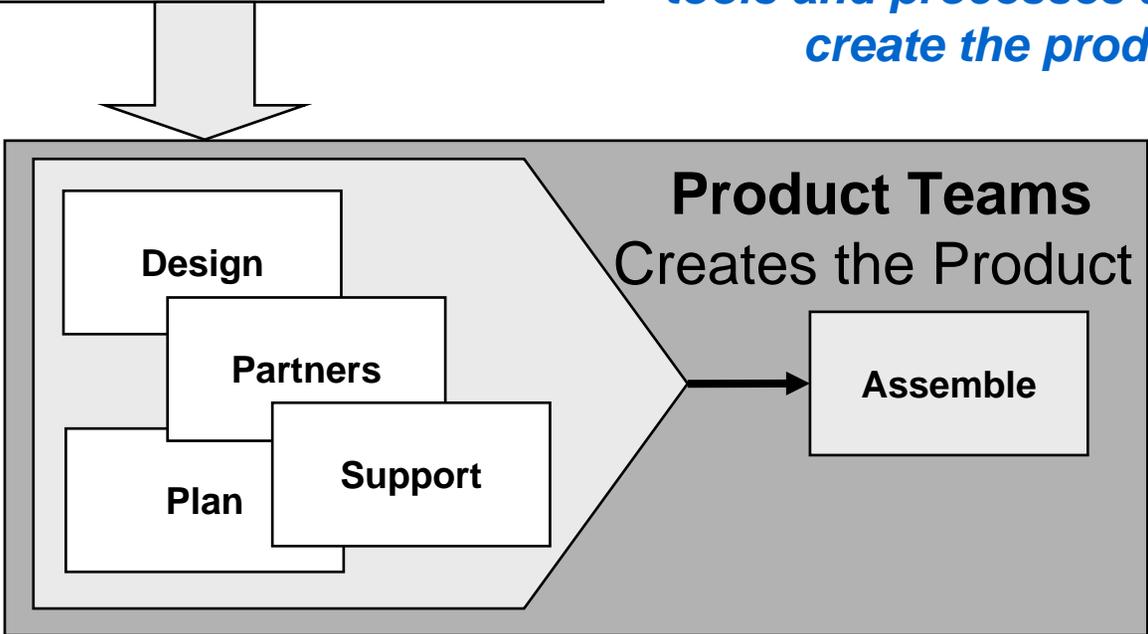
Environment - Program Design



Environment - Program Structure

**Systems Integration,
Processes & Technology**
Creates Tools and Processes

Planned networks are embedded in the formal meeting and reporting system of the program. 787 has additional complexity with the presence of two major organizations; one to create tools and processes another to create the product.



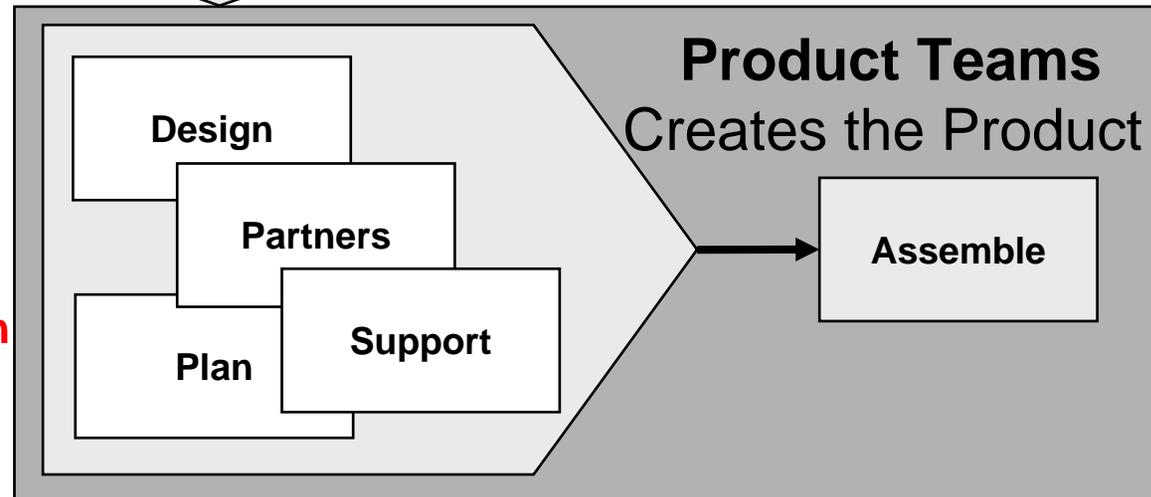
Environment - Observation

**Systems Integration,
Processes & Technology**
Creates Tools and Processes
- Coordination between systems

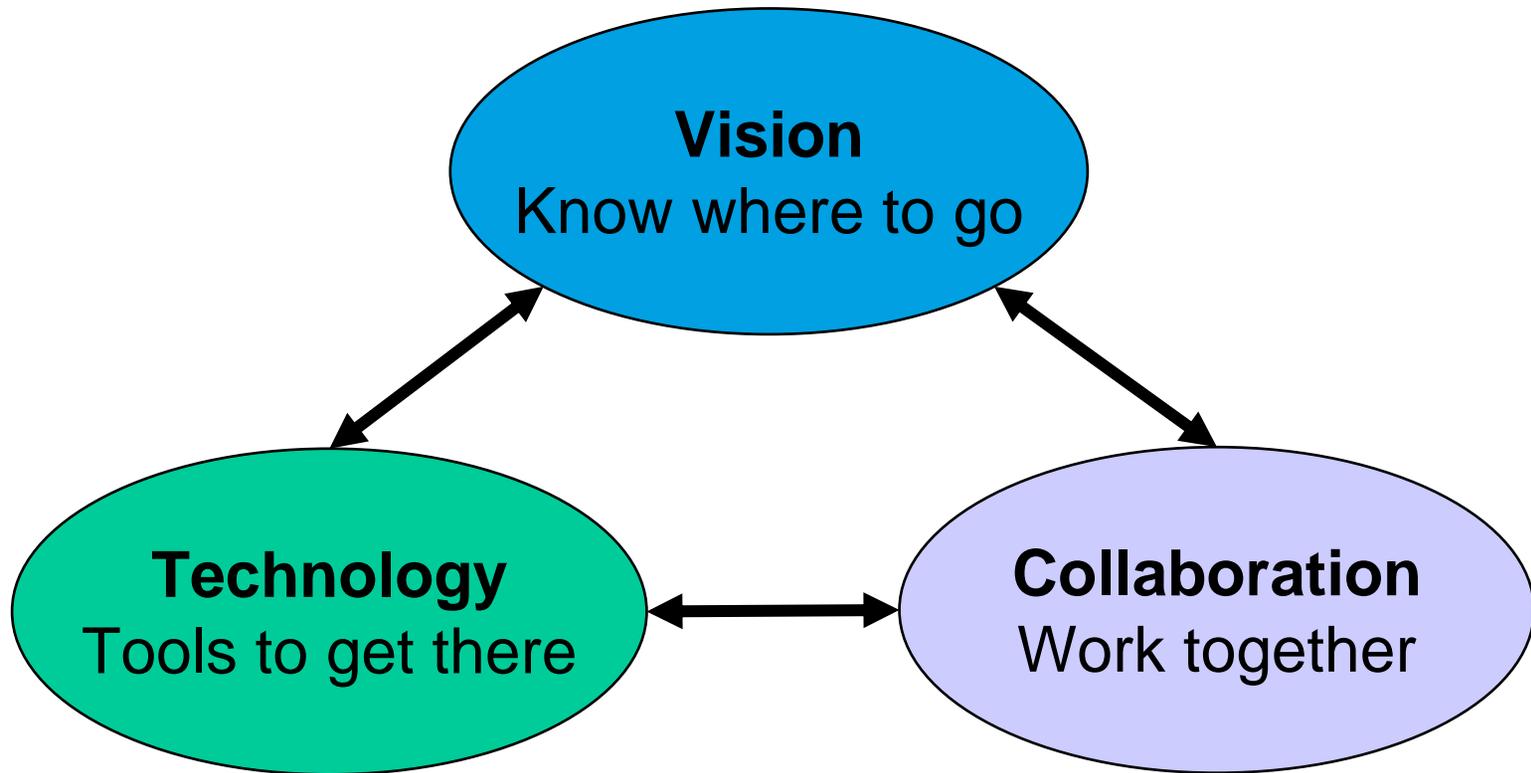
The planned network structure to support a complex program will not cover all of the communication and information needs of the program. This creates “network gaps” that will need to be filled by organic networks.

- Introduction of systems

- Cross Platforms**
- Cross Partners**
- Partner Orientation**



Keys to Success



Vision

Vision

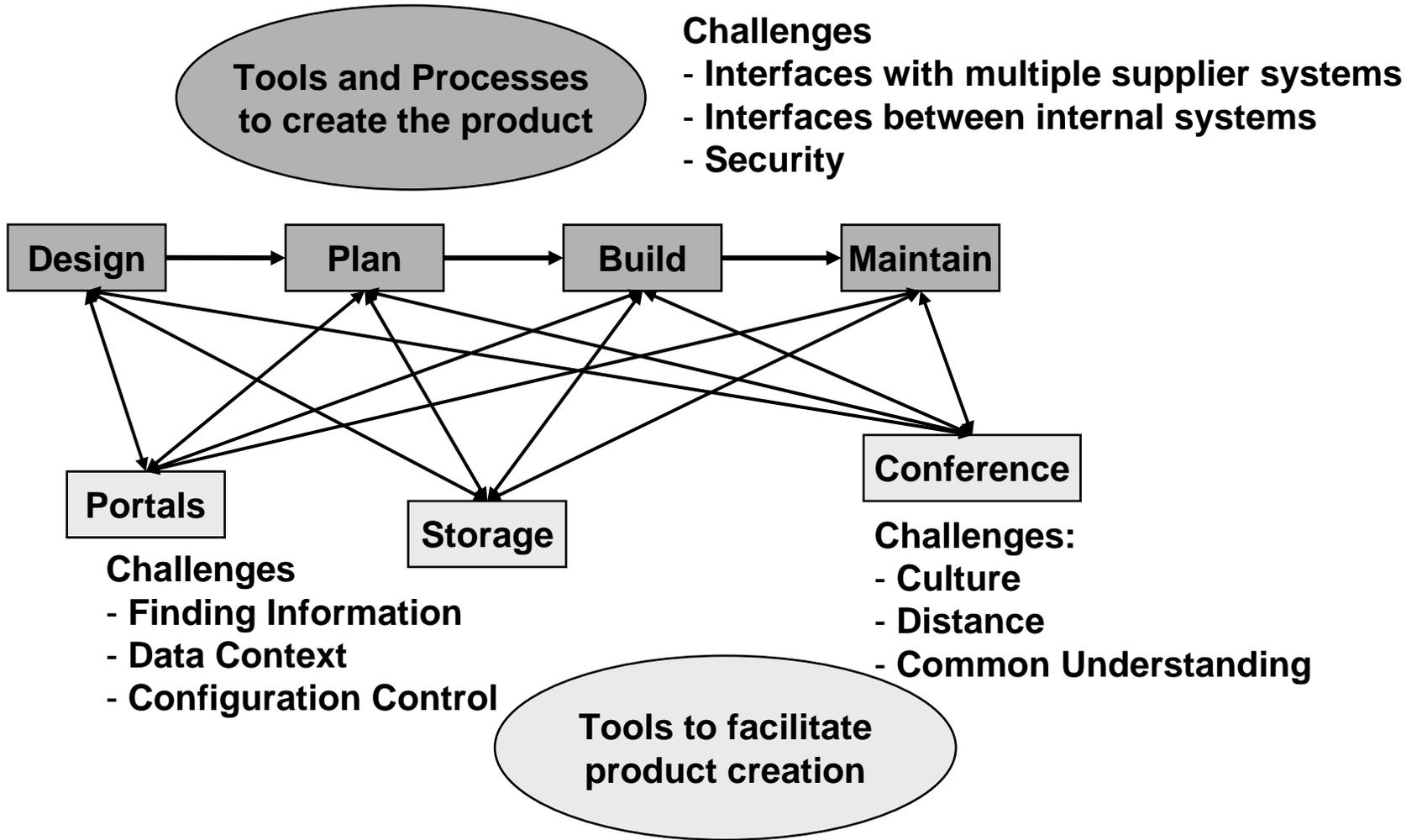
- **Guides what to do**
- **Guides what not to do**
- **Define non-negotiable items**

Management Role

- **Communicate the Vision**
- **Vision Police**



Technology



Collaboration

“To work jointly with others” requiring the integration and knowledge management of unique business and worldwide cultures

Structure

Life Cycle Product Teams
(LCPTs)

Technology

For virtual collaboration and
information storage

Commitment

To cooperate and ensure that
everyone truly understands each other

Two Types

Management Driven – Management identifies gaps in the formal plan and designs networks to fill them.

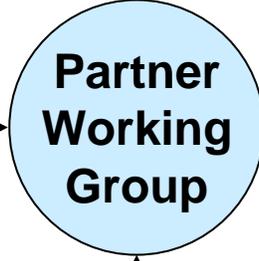
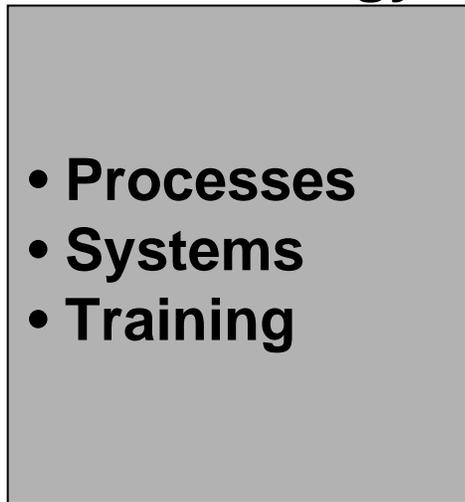
Employee Driven – Employees identify gaps and create informal networks to fill them.

Organic Network Examples

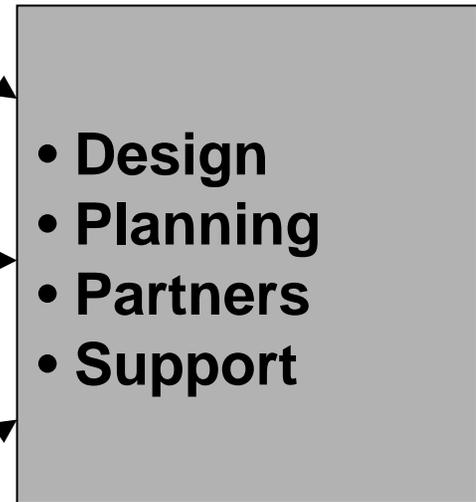
Type	Name	Purpose	Management Role
Management Driven	Partner Integration Teams	Ensure partners have and know how to use the processes, tools, systems that are required to support the program. Provide cultural orientation and integration into the program.	<ul style="list-style-type: none"> • Identify gaps and create networks • Assess if network is still relevant • Change or shut down obsolete networks • Identify new gaps and create new networks
	Partner Working Group	Provide common communication platform for SIP&T the Program, and Partners. Encourage collaboration across boundaries	
Employee Driven	User Groups	Provide knowledge sharing for employees from the program and partners who use a common system	<ul style="list-style-type: none"> • Determine if value added • Support and nurture

7E7 Program Interrelationships

Systems Integration, Processes & Technology



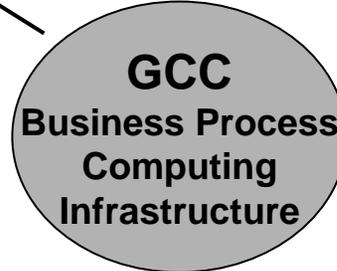
Life Cycle Product Teams



Global Collaboration Environment Team Roles

Role:

- Responsible for collaborative culture
- Final arbiter for GCE issues
- Guidance to PWG
- Set strategy and vision for GCE
- Business decisions



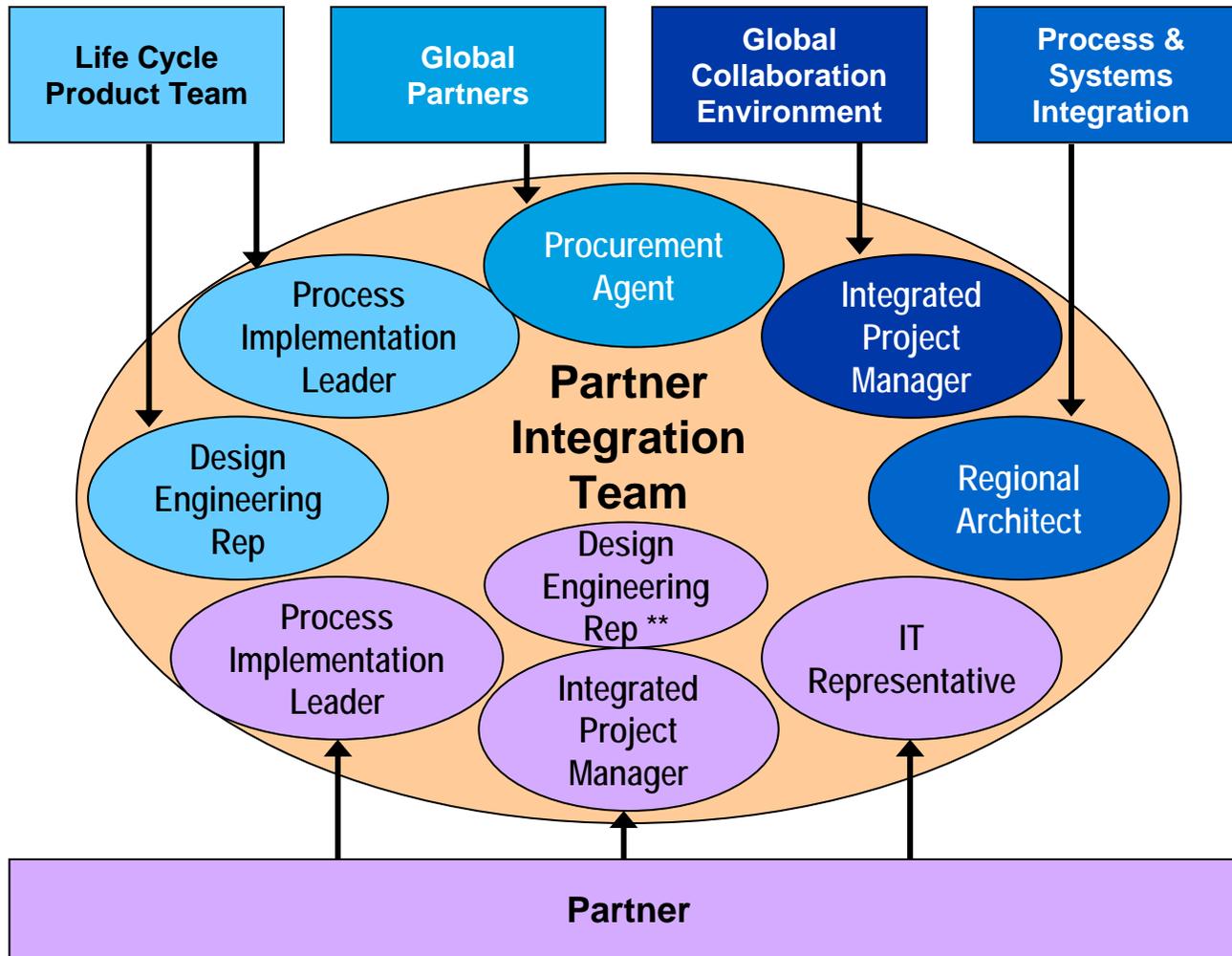
Role:

- Implement GCE
 - Culture/collaboration
 - Technology
 - Infrastructure
 - Contracting
 - Communication
- Establish tactics to implement strategy and vision
- Resolve Issues
- Elevate as needed
- Provide status and visibility
- Business case/issues

Role:

- Implement enabling technology
- Improving and updating technology
- Supporting PWG
- Providing detail plans to implement tactics

Management Driven Network – Partner Integration Team



Management Driven Network – Partner Integration Team

Organization	Roles (Focus)
787 Systems Integration Processes and Technology (SIP&T)	Computing Architecture Expert (Technology) Integrated Project Manager (Relationship Management and Planning)
787 Design and Build Program	Process Implementation Leader (Business Process)
Boeing Global Partners	Procurement Agent (Business Expectations)
Partner Company	Process Implementation Leader Information Technology Representative Integrated Project Management
Other	Boeing Learning, Training, and Development (Business Process and Systems Alignment)

Employee Driven Network - User Groups

- **User Groups on 787**

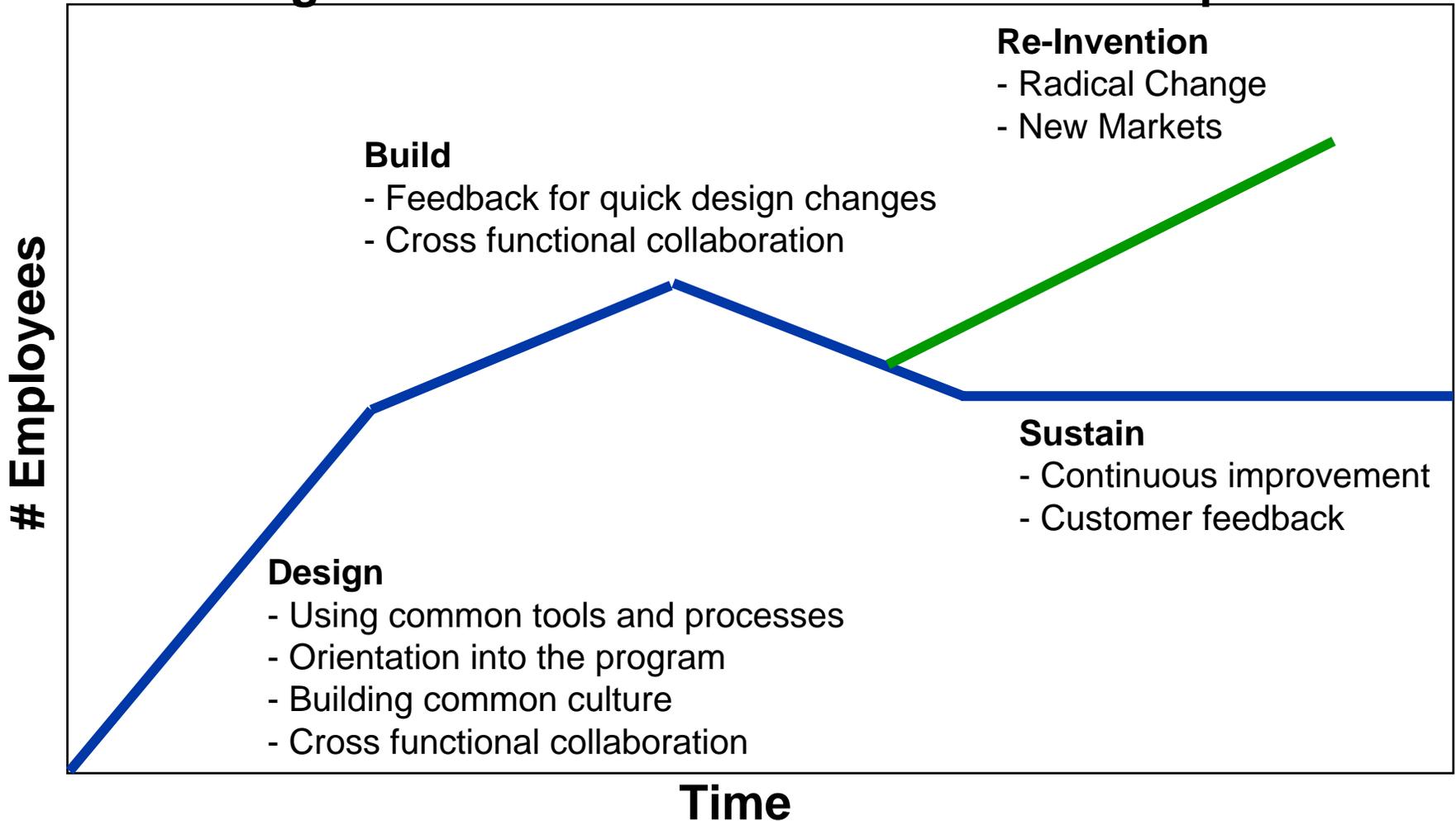
- 16 groups with meetings attended by 15-115 people
- Each group is centered around a specific application
- Members include Boeing and Partner employees
- Led by subject matter experts
- Goal is knowledge sharing

- **Management role**

- Assess if the group supports the program vision and goals
- Support and encourage participation
- Count progress and provide overall status but don't set targets
- Don't impose your agenda on the group
- Offer appropriate help if asked

Program Phases – Organic Network Evolution

Program Phases and Potential Network Emphasis



Conclusions

- The formal program network structure will have network gaps (the more complex it is the more gaps there will be)
- Nature of the gaps will change over the life cycle of the program
- Management needs to identify gaps and develop appropriate responses
- Employees will also create informal networks to fill gaps which managers need to support if they add value

More Questions

- How do we encourage managers to look for opportunities to develop gap filling networks without them creating numerous non-value added activities?
- How do we assess when networks have outlived their usefulness and need to be reinvented or disbanded?
- How do we react if an employee driven network is disruptive to the project?

If you would like to continue the discussion on this or other questions you may have please contact me at

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