The New IT Solution:
A Converged System of Hybrid Computing

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Abstract

- Information Technology is essential to the modern business. But is "IT"? Every business is faced with the challenge of advantaging information technology to remain competitive. But that does not mean that every business will self-service their information technology needs from their own IT shop. Information technology needs vary greatly from business to business so for some, outsourcing IT may be the right answer; for others the answer could be cloud-sourcing; for some the answer could be a traditional IT shop; and for others the answer could be some mixture of "all of the above". The challenge of running an efficient and effective IT shop is huge. However, the challenge of running a good IT shop is one shared between the suppliers of IT technology and products and those who deploy those IT technologies and products. It is time for the vendors to step up because all too many IT shops are "underwater".

  This presentation will take a look at the many "oars" that IBM has in the water to help IT shops address future challenges. This presentation will illustrate that when those many oars are synched and steered in the same direction a very plausible future datacenter takes shape that can be referred to as "The Inevitable IT Singularity that is Converged Hybrid Systems". The oars churning the information technology waters include the following:

  - The Cloud Paradigm and IT as a Service
  - Workload-centric requirements gradients
  - Edge systems
  - Systems of record
  - Enclosed clusters
  - Single system images
  - Heterogeneous compute platforms (multi-platform)
  - Hybrid compute capabilities (appliances)
  - Adaptive hypervisors
  - Workload-centric instrumentation
  - Business metrics instrumentation
  - IT Analytics
  - Real-time workload-based platform optimization

- **This presentation will examine** each "oar" in turn, expressing how when taken as a whole the "crew" that results is **a multi-platform heterogeneous and hybrid single system image enclosed cluster that is self-optimizing and dynamically adaptive based upon flexible business and technology policies**. In other words, it is just the tool a future IT shop needs to become and remain efficient and effective in delivering information technology capabilities to the business.
- Tracks: Application Development, Big Data - Big Analytics - Big Needs, Cloud in the Enterprise, Middleware, Mobile in the Enterprise, Software Architecture and User Experience

The Future of IT
The Future is Dismal… Unless its Bright

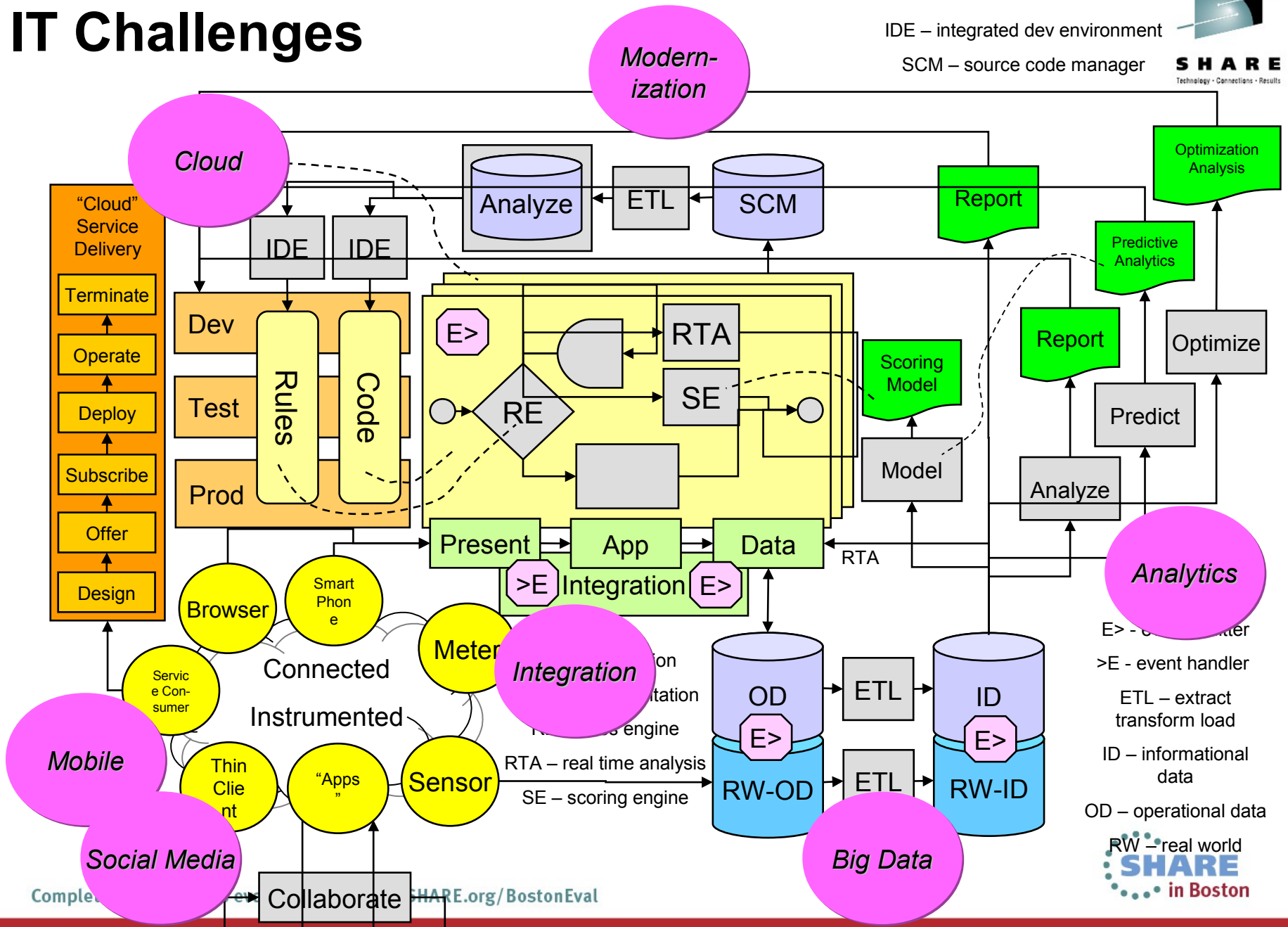
IT in the Cloud
(outsourced)

Traditional IT

Service-driven (service delivery)
Efficient (cheap)
Flexible (fast)

Traditional IT
… but
Converged
Integrated
Simplified

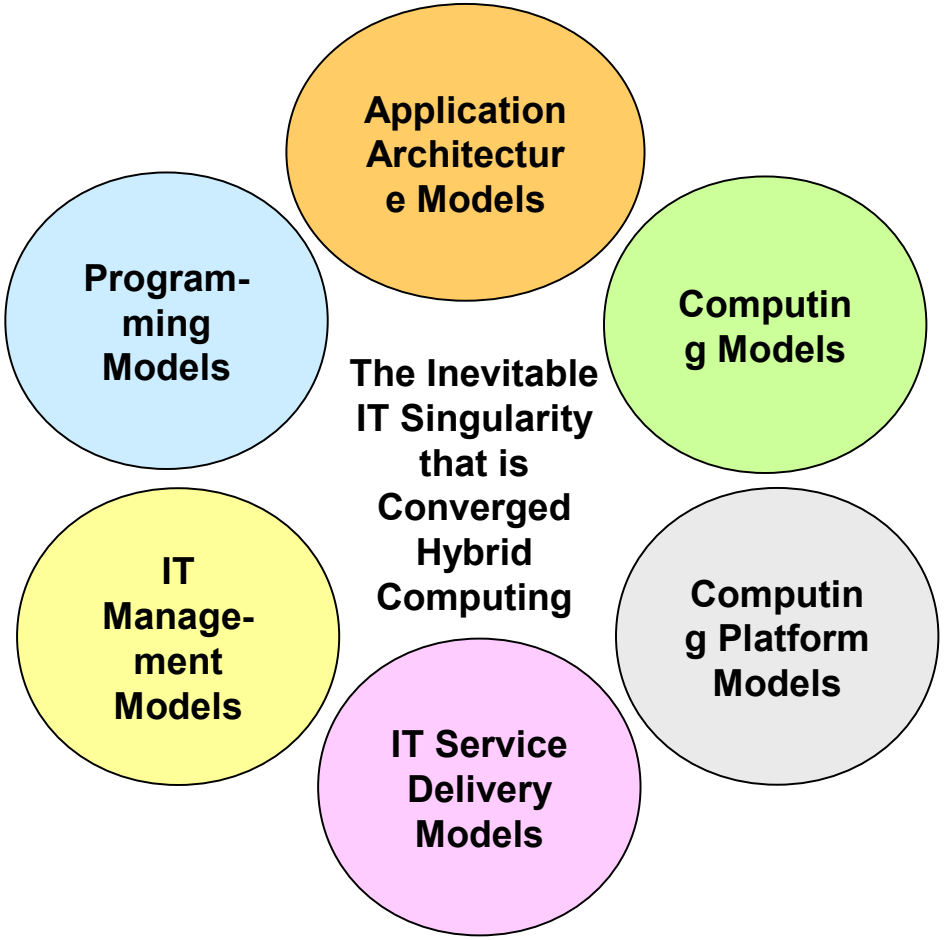
IT Challenges



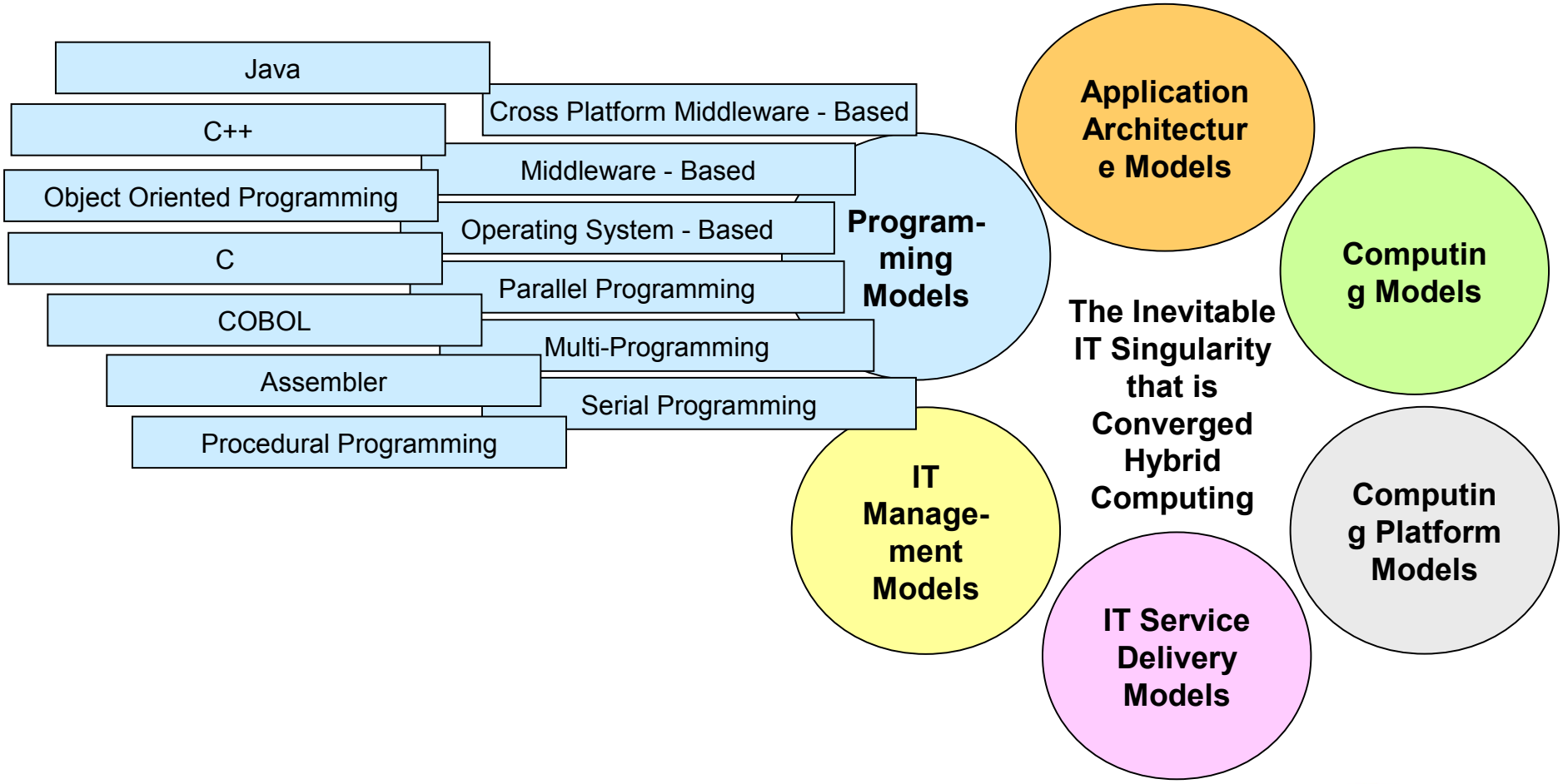
The Tides of Change in IT

- The Cloud Paradigm and IT as a Service
- Workload-centric Requirements Gradients
- Edge Systems and Systems of Record
- Enclosed clusters and Single system images
- Heterogeneous compute platforms (multi-platform)
- Hybrid compute capabilities (appliances)
- Adaptive hypervisors
- Workload-centric instrumentation
- Business metrics instrumentation
- IT Analytics
- Real-time workload-based platform optimization

IT Trends and Directions



IT Trends and Directions



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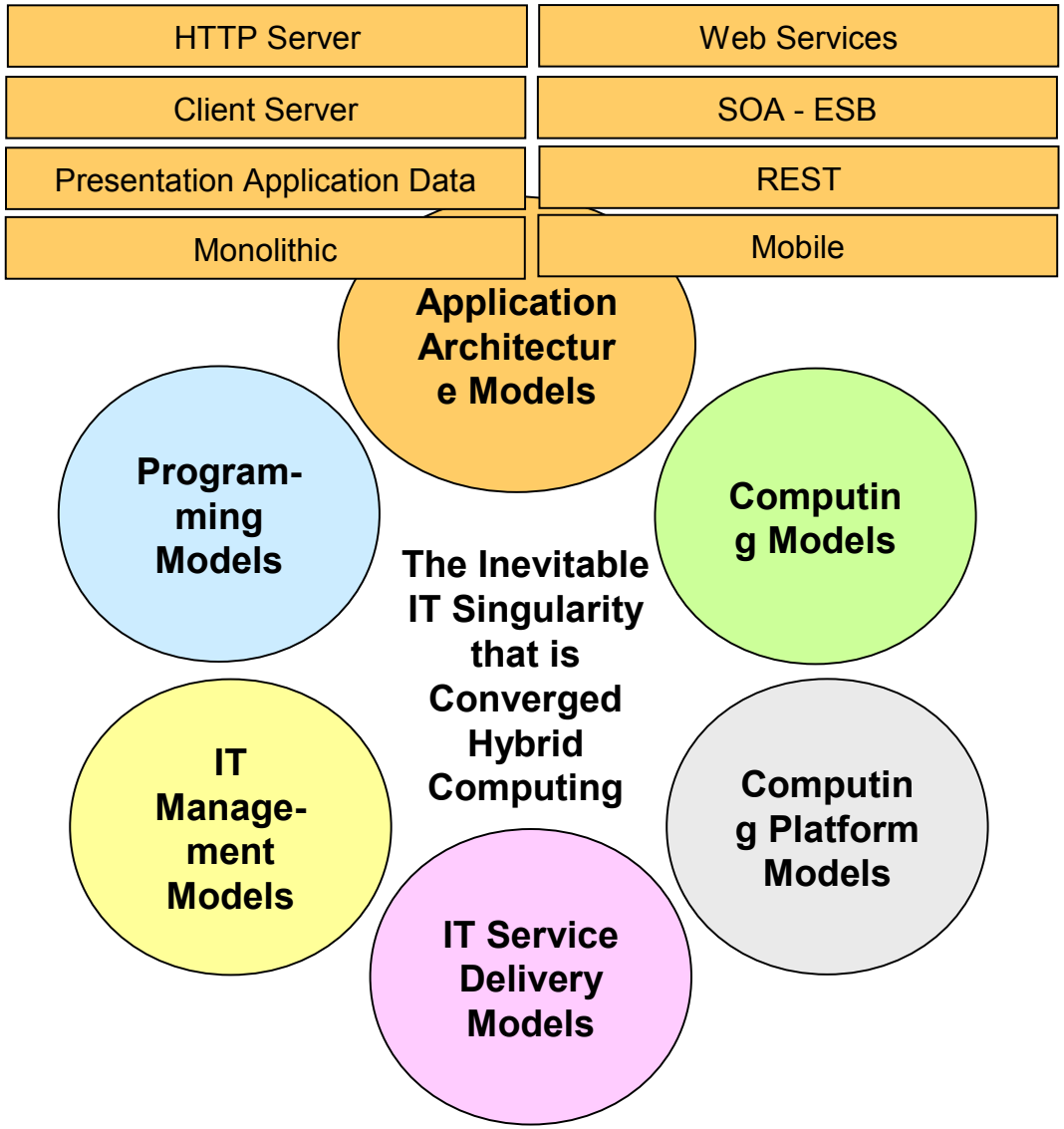

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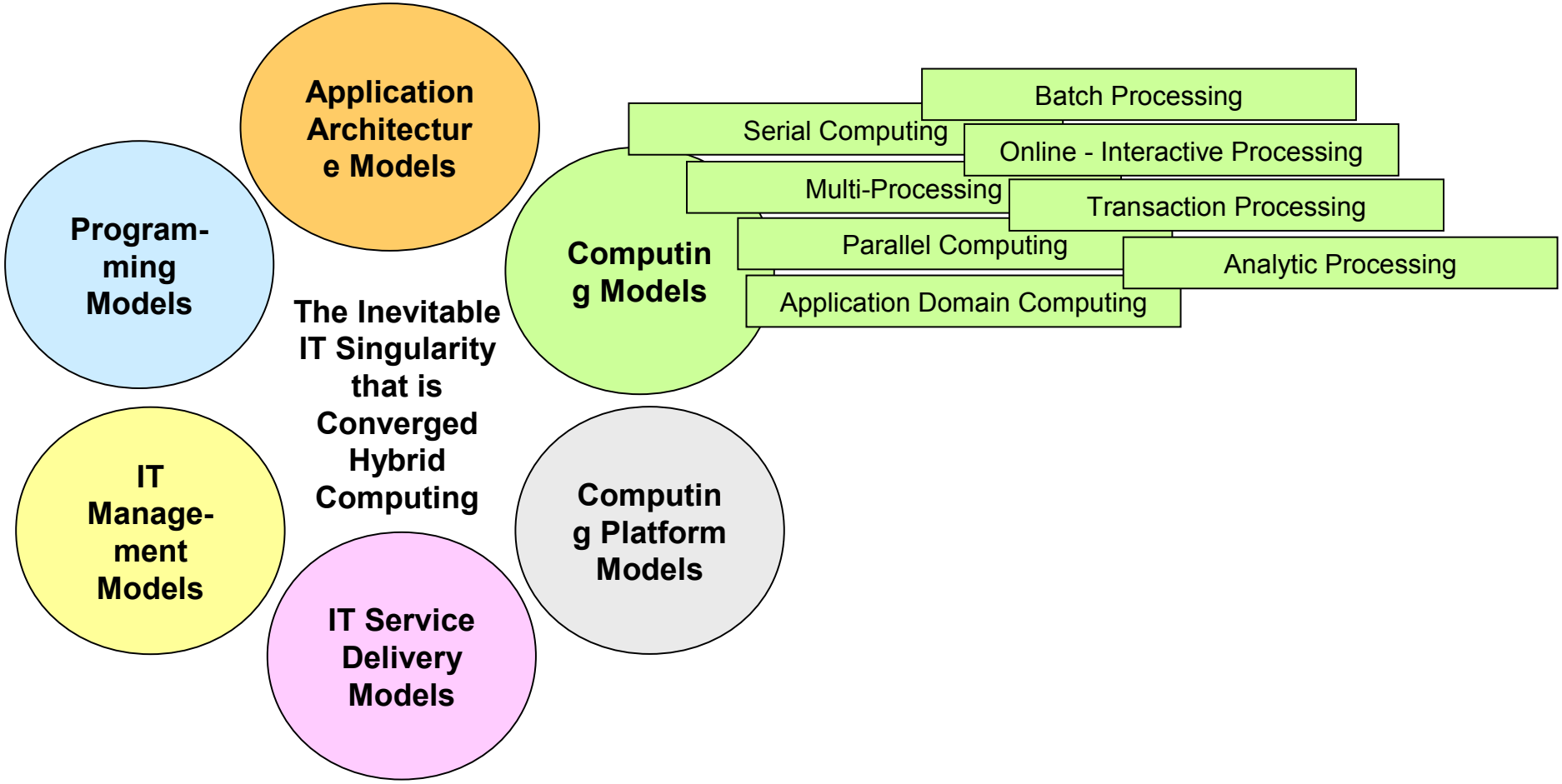

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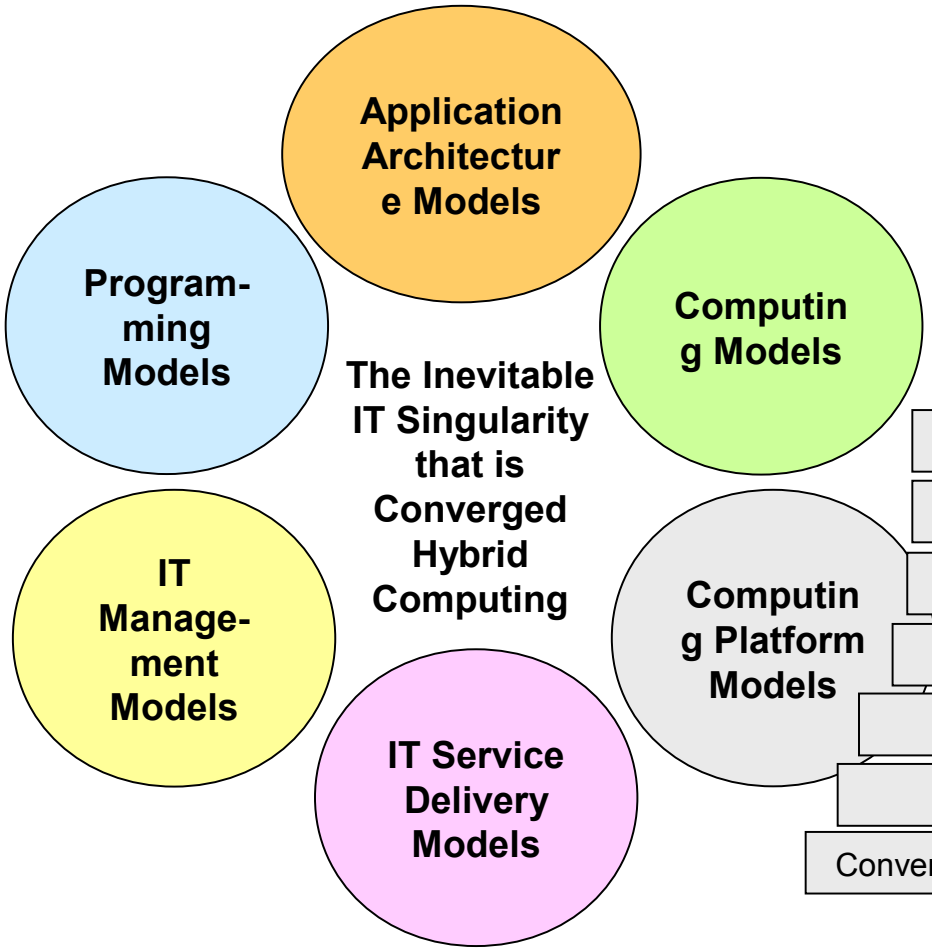
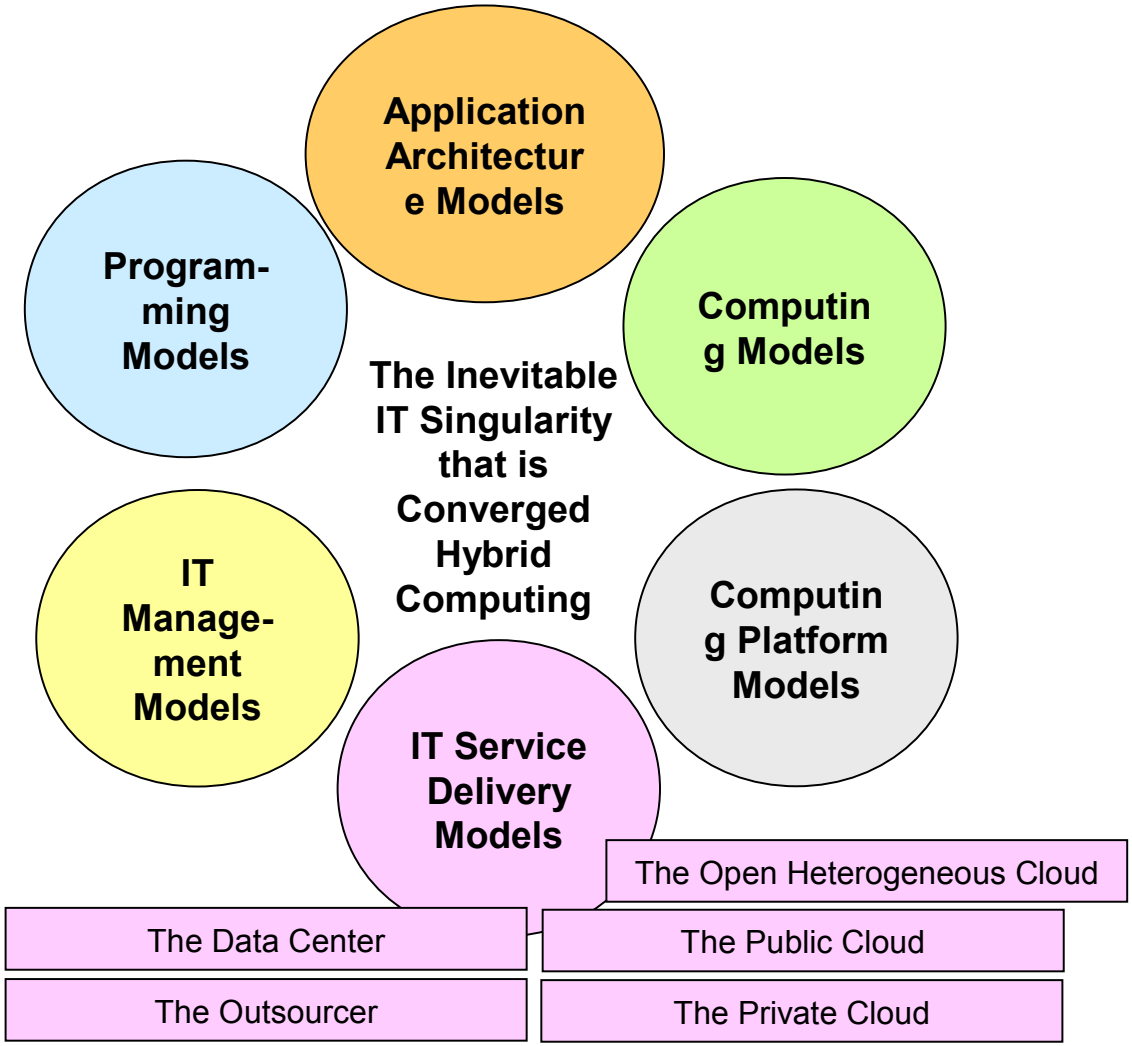


- General Purpose Systems — System z
- Special Purpose Systems — POWER
- Server Virtualization — x86
- Clusters — Sysplex
- Appliances — DataPower
- Adaptive Hypervisors — Data Analytics Accelerator
- Converged Engineered Systems — zEnterprise – zBX - zURM

IT Trends and Directions



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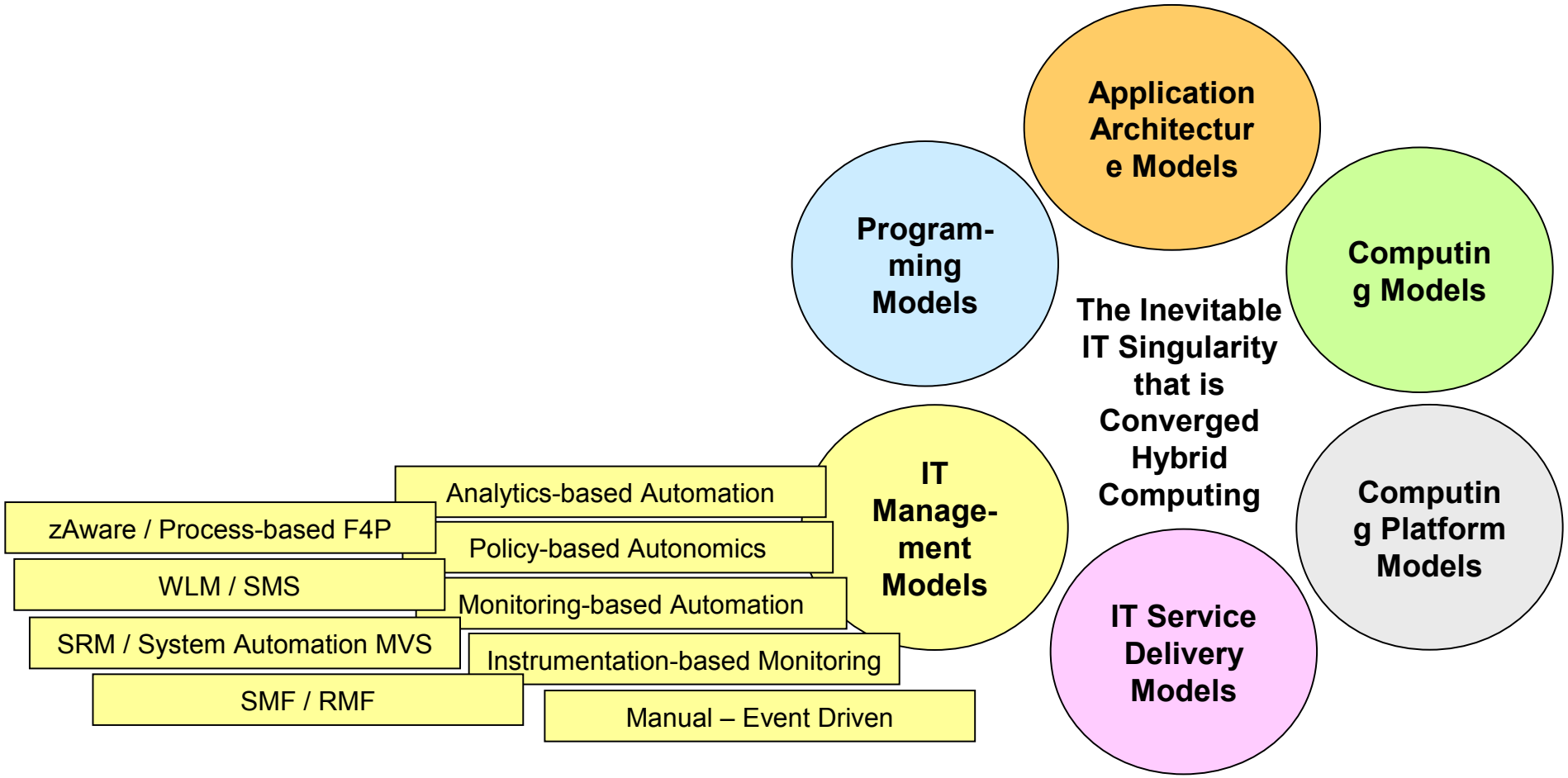

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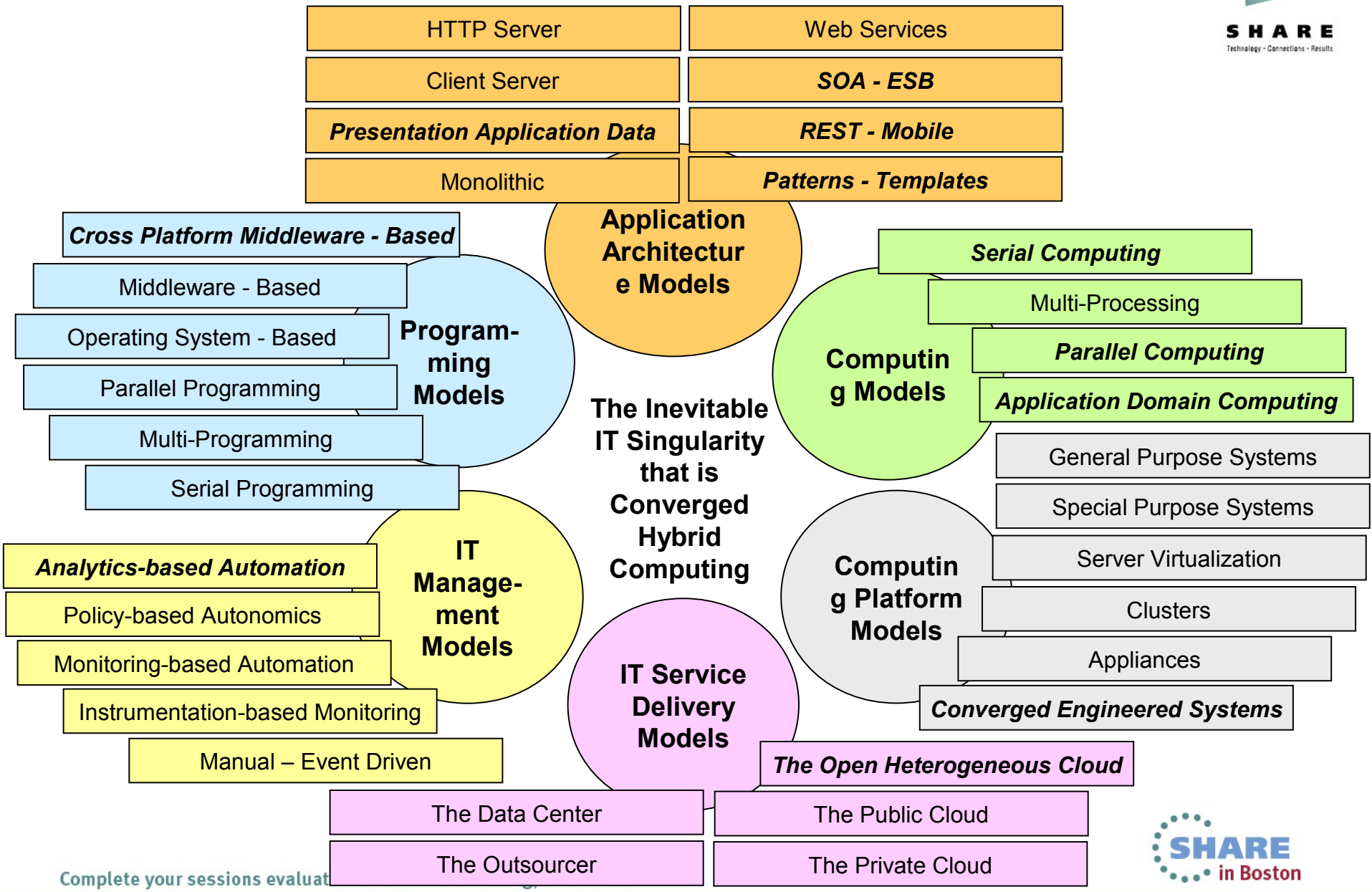
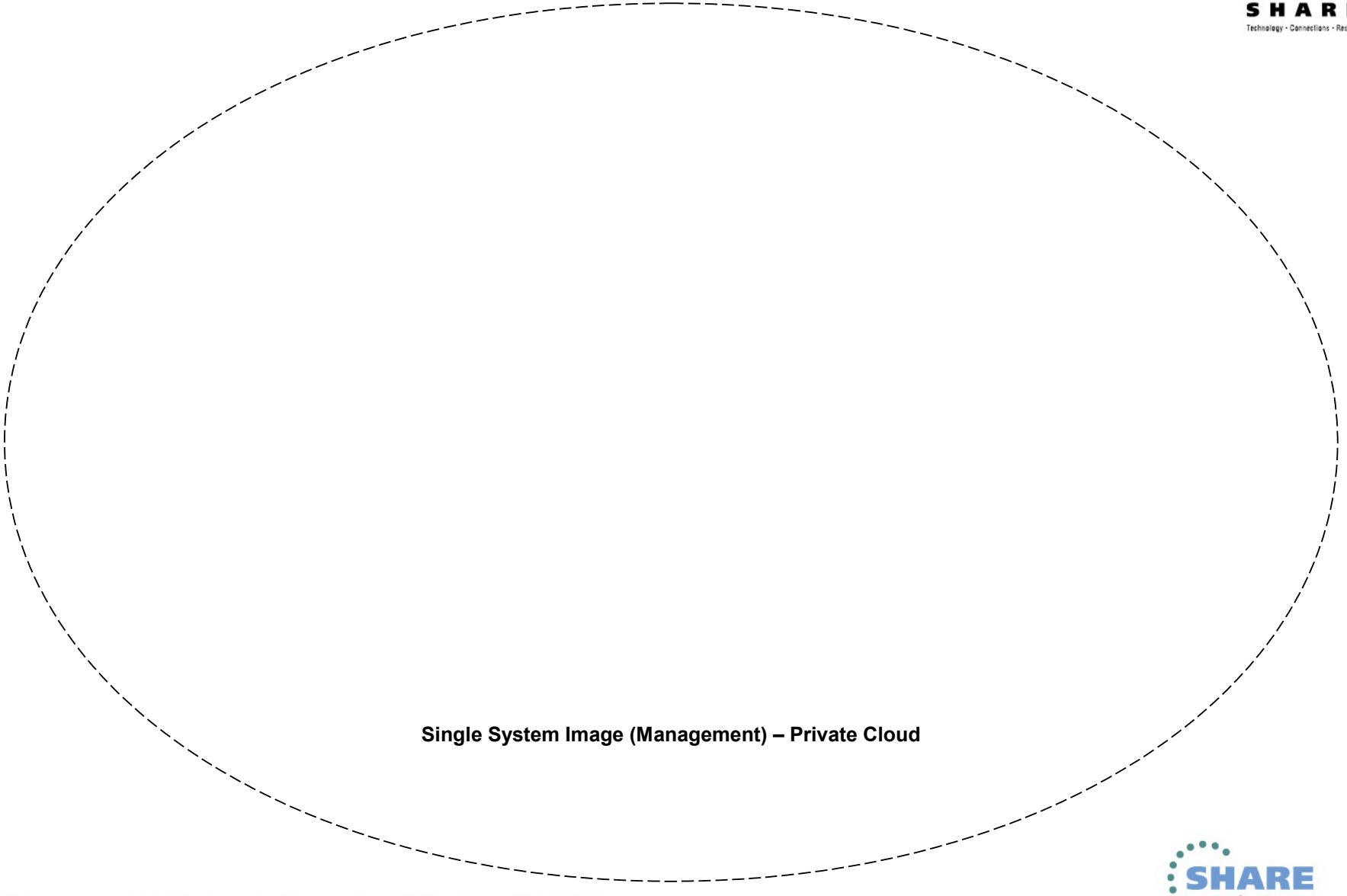


The Inevitable IT Singularity that is Converged Hybrid Systems



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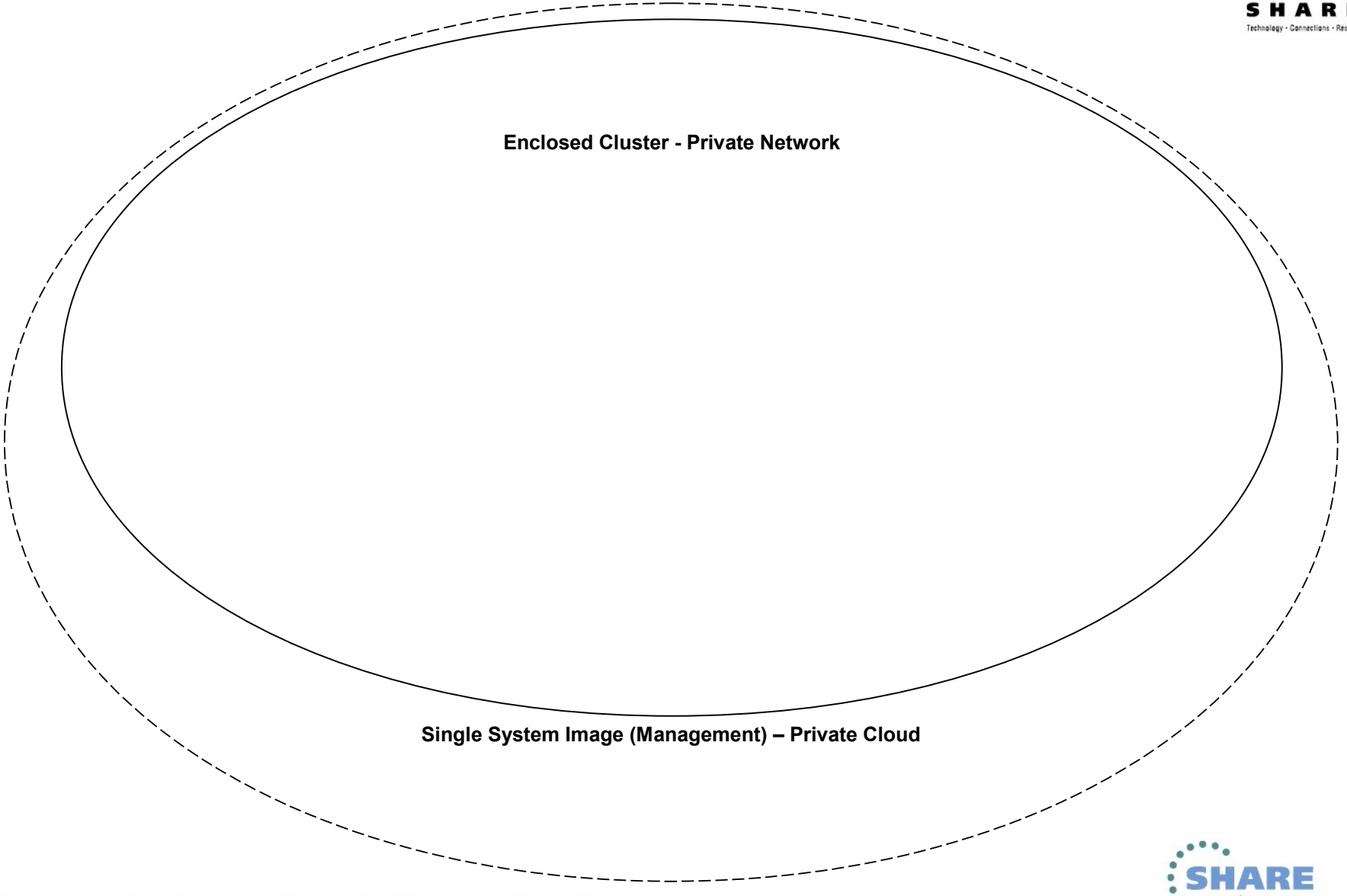

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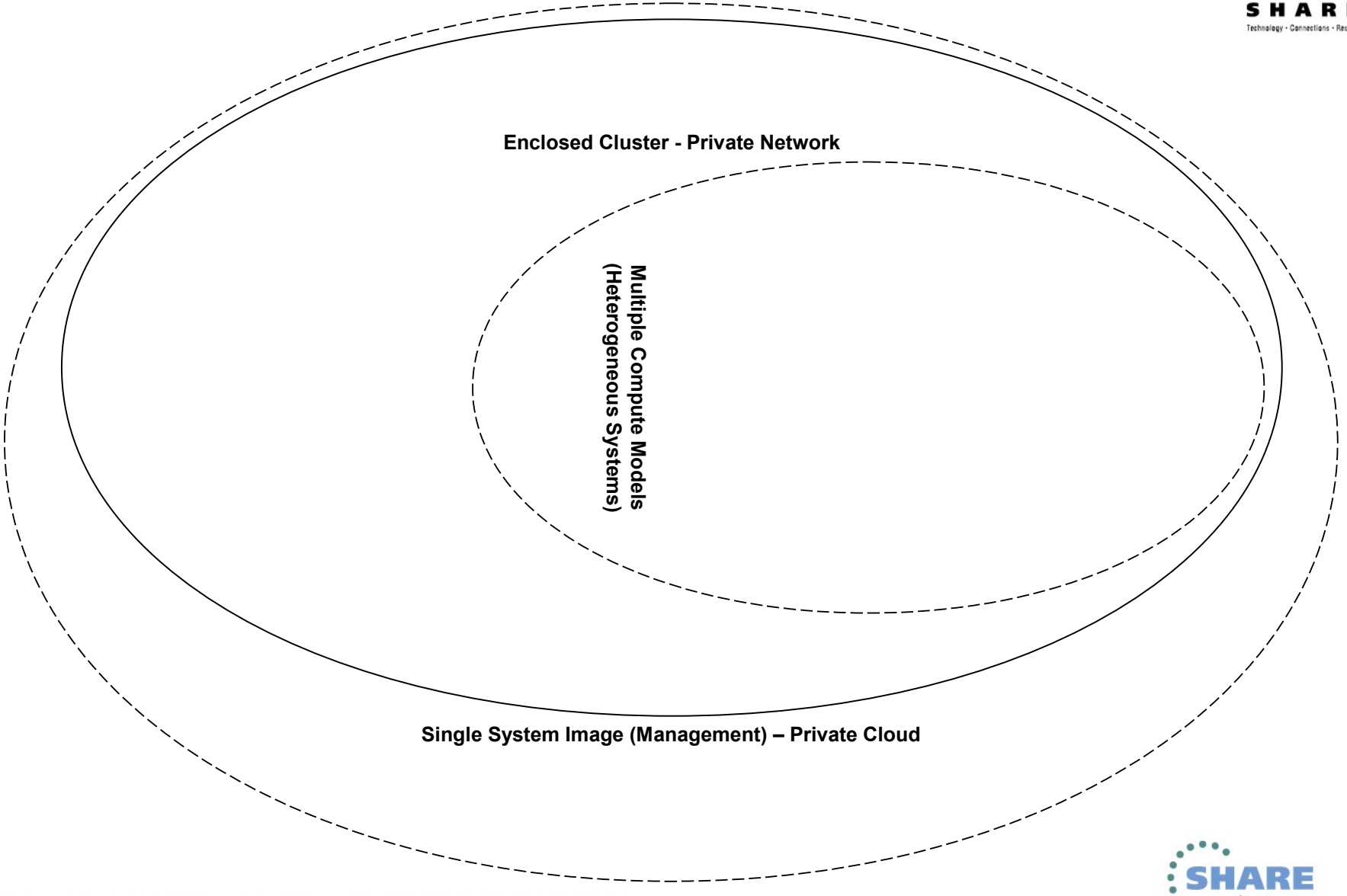

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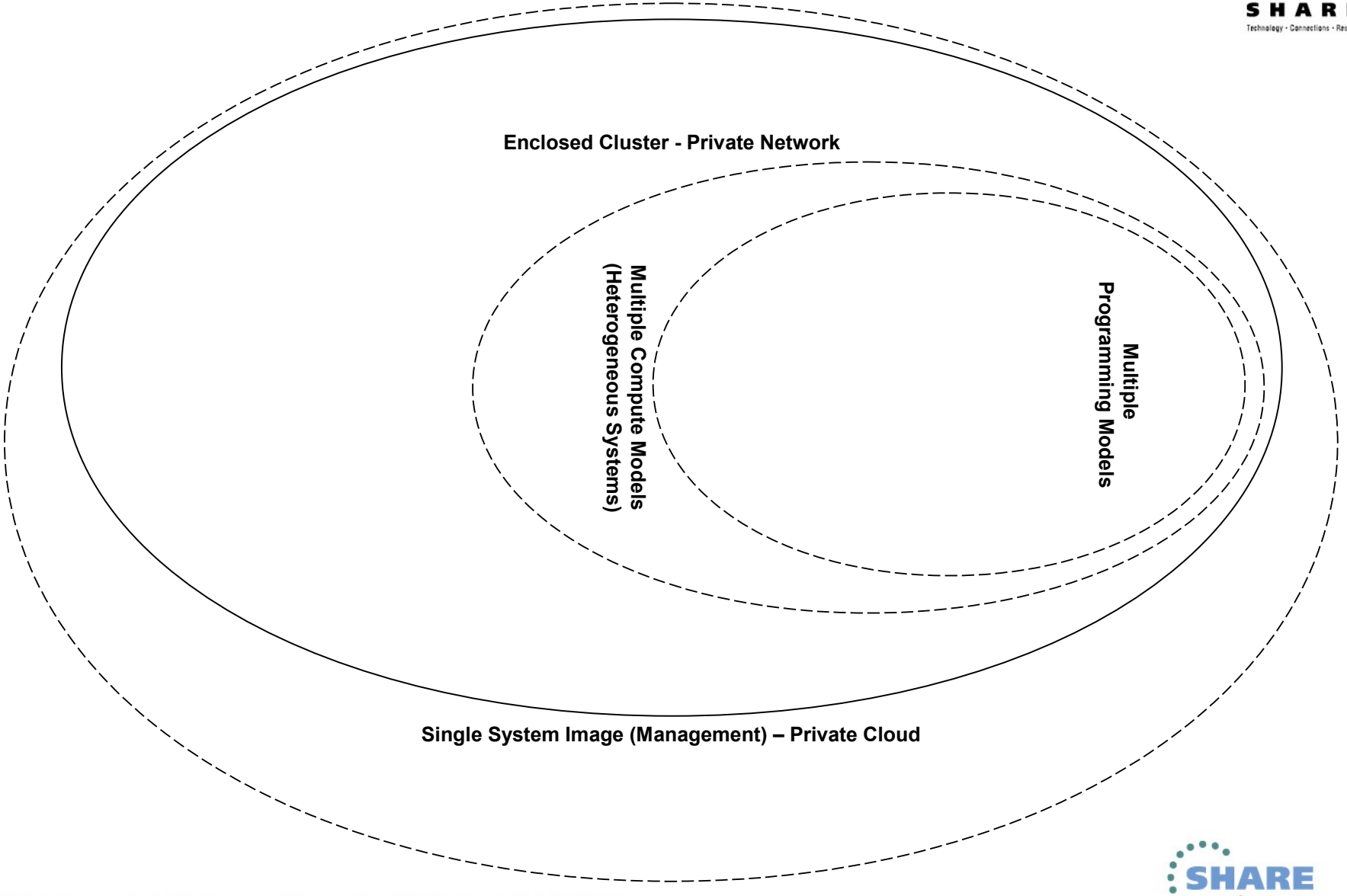

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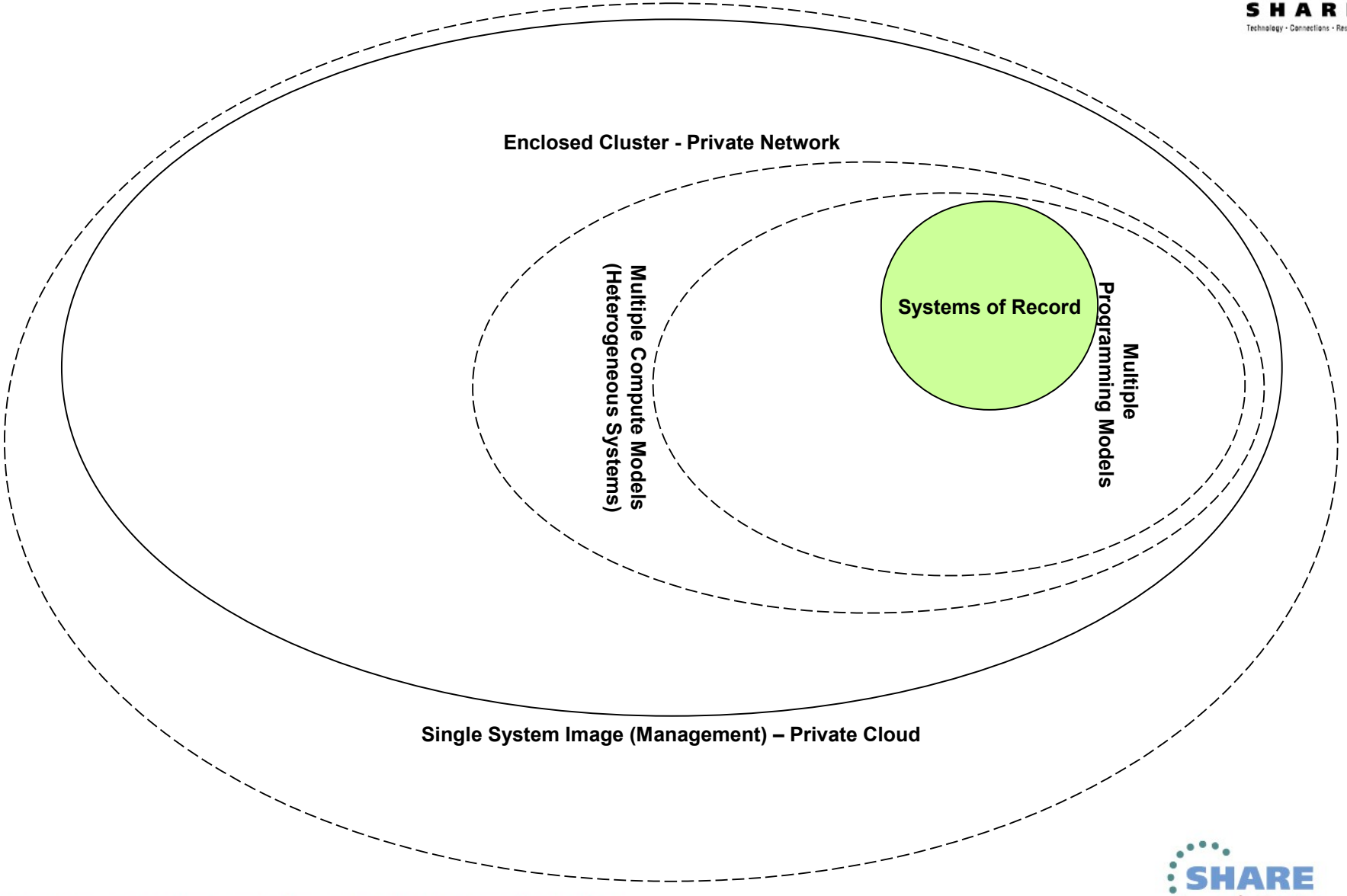

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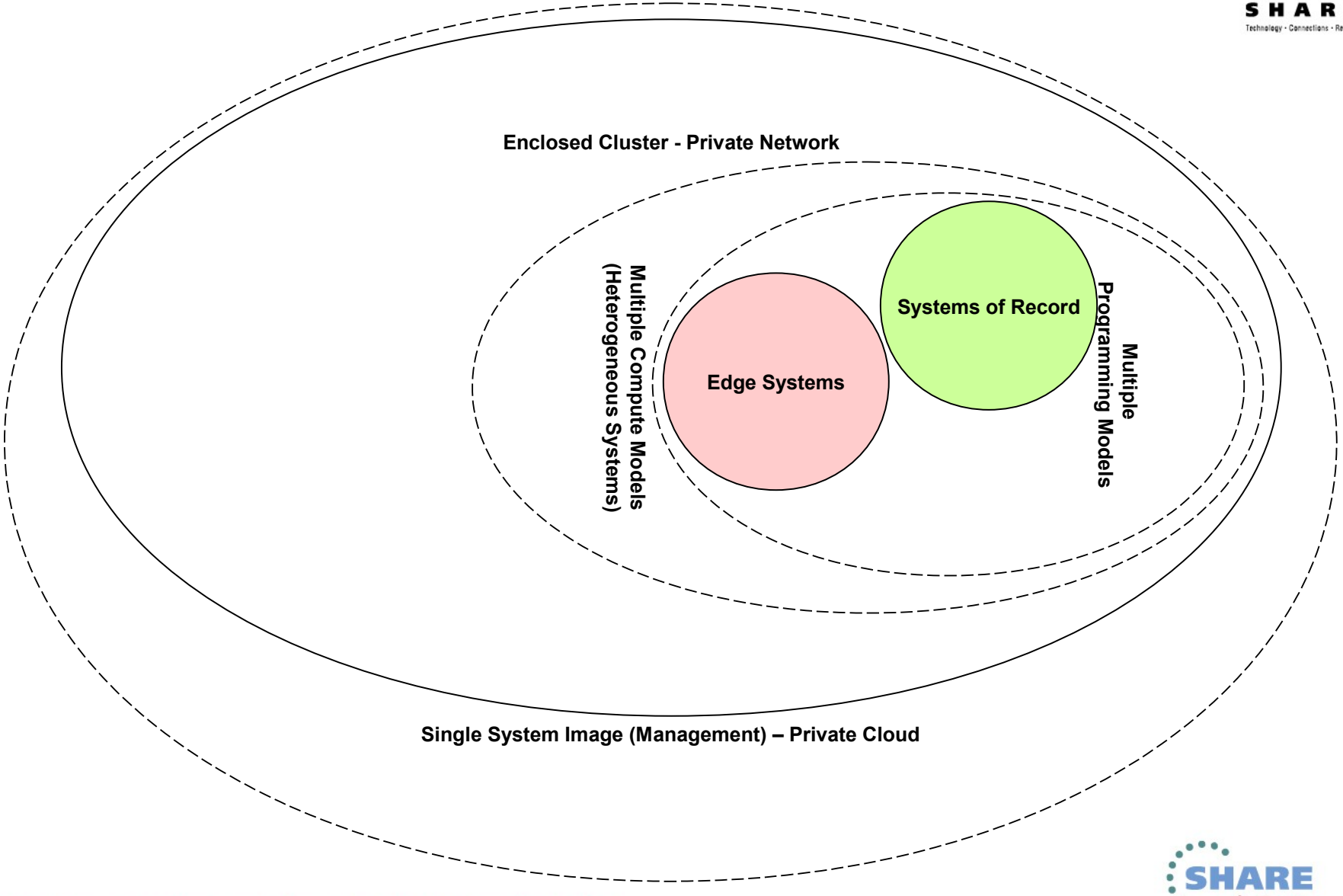

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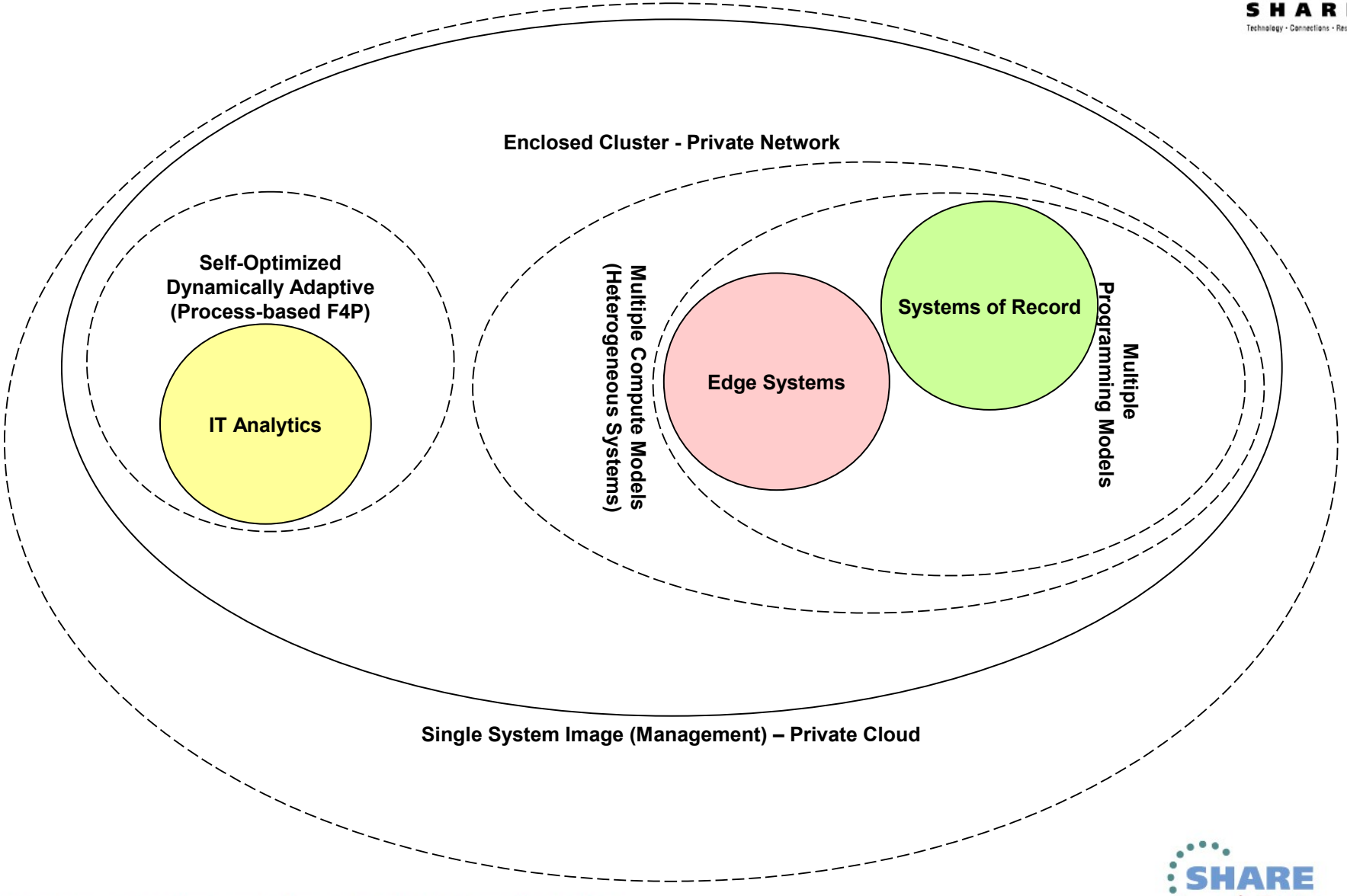

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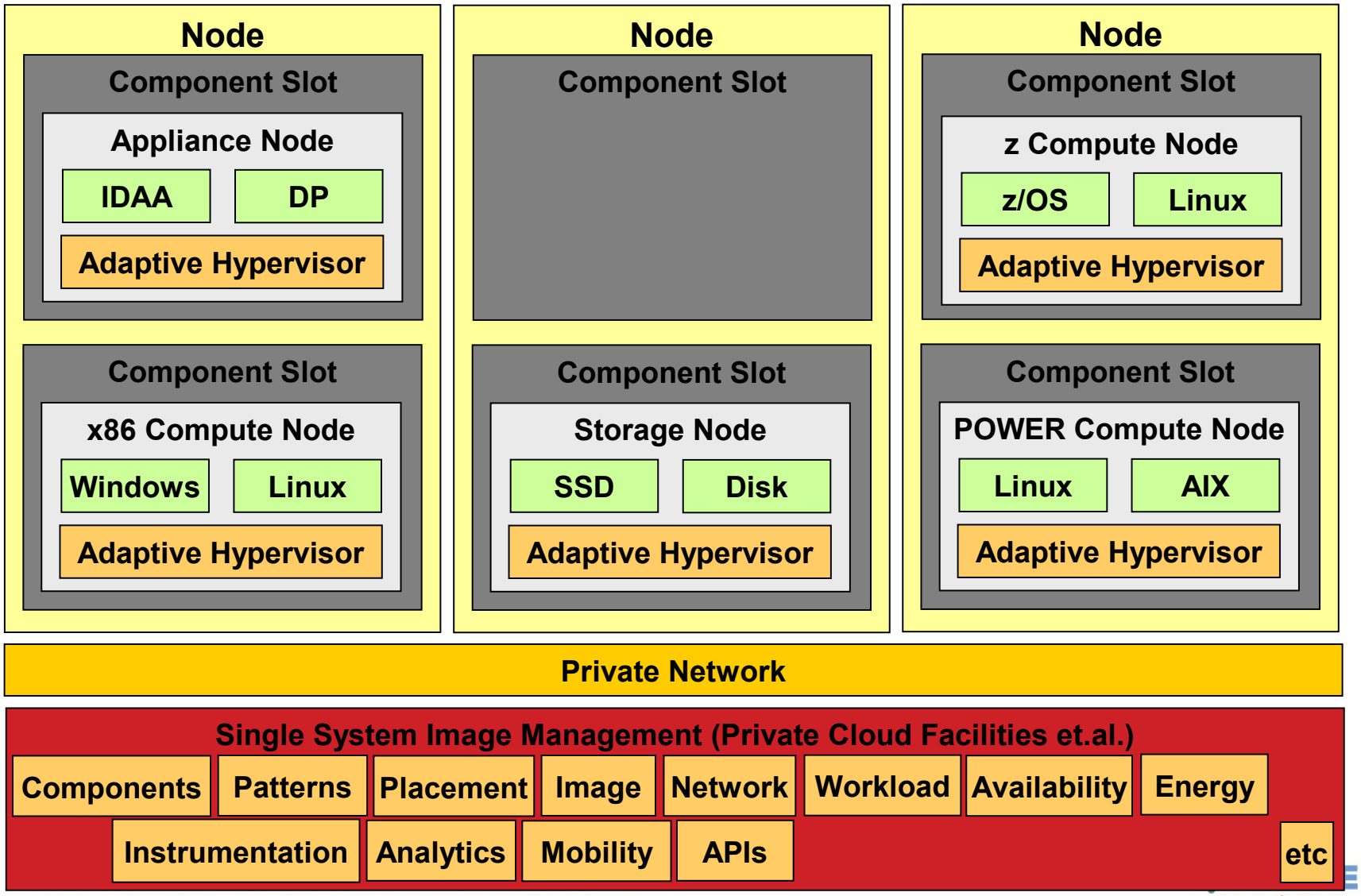
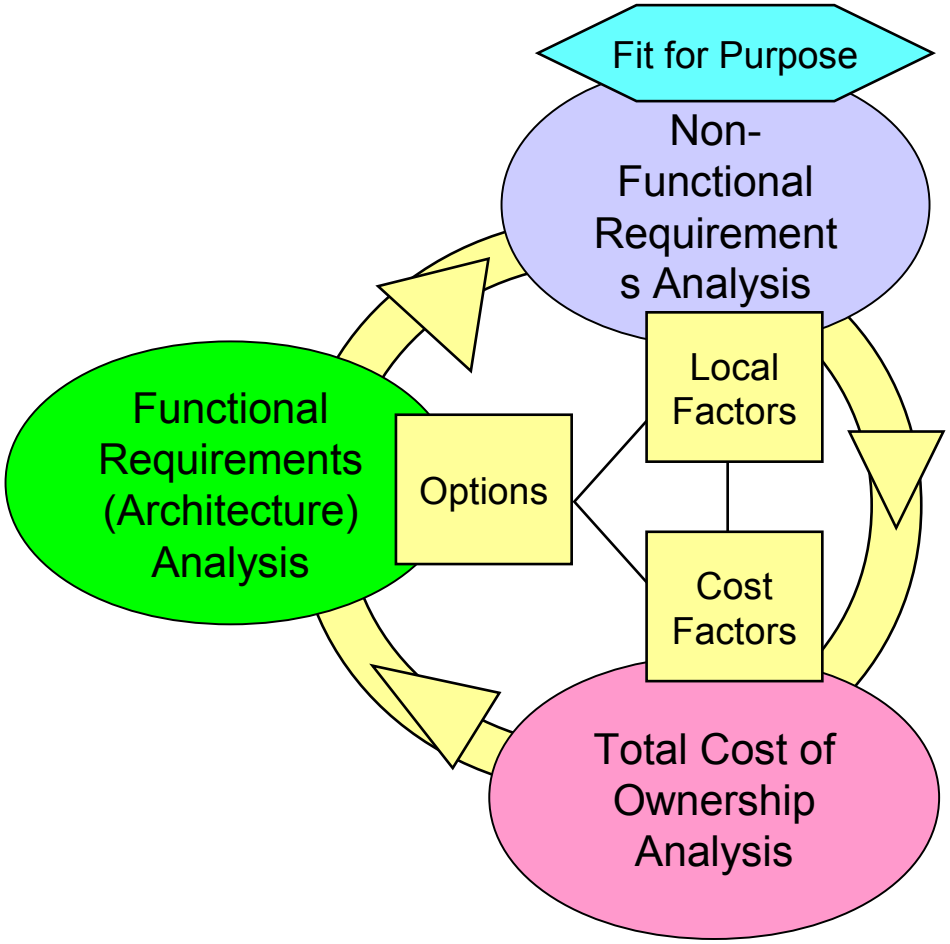
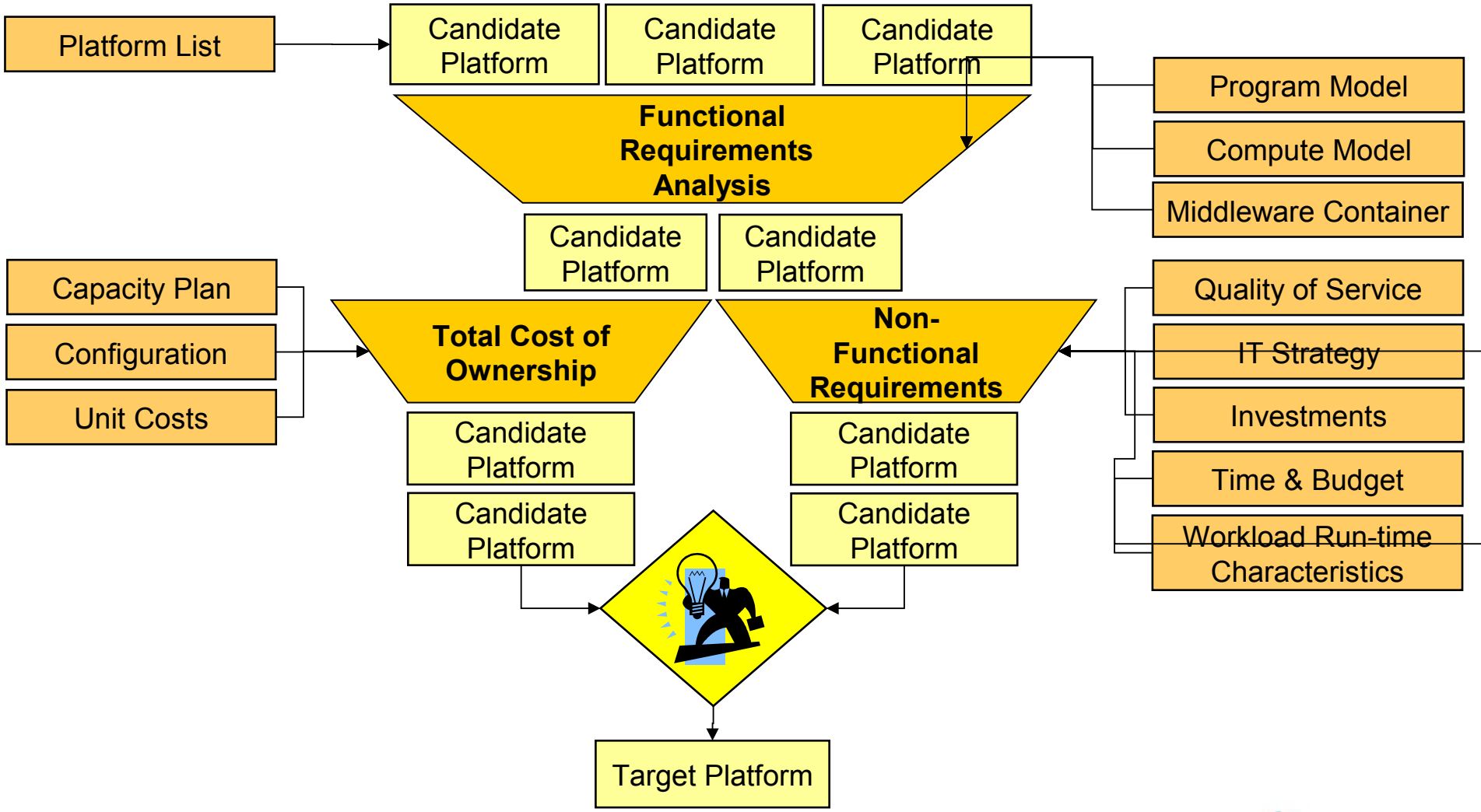


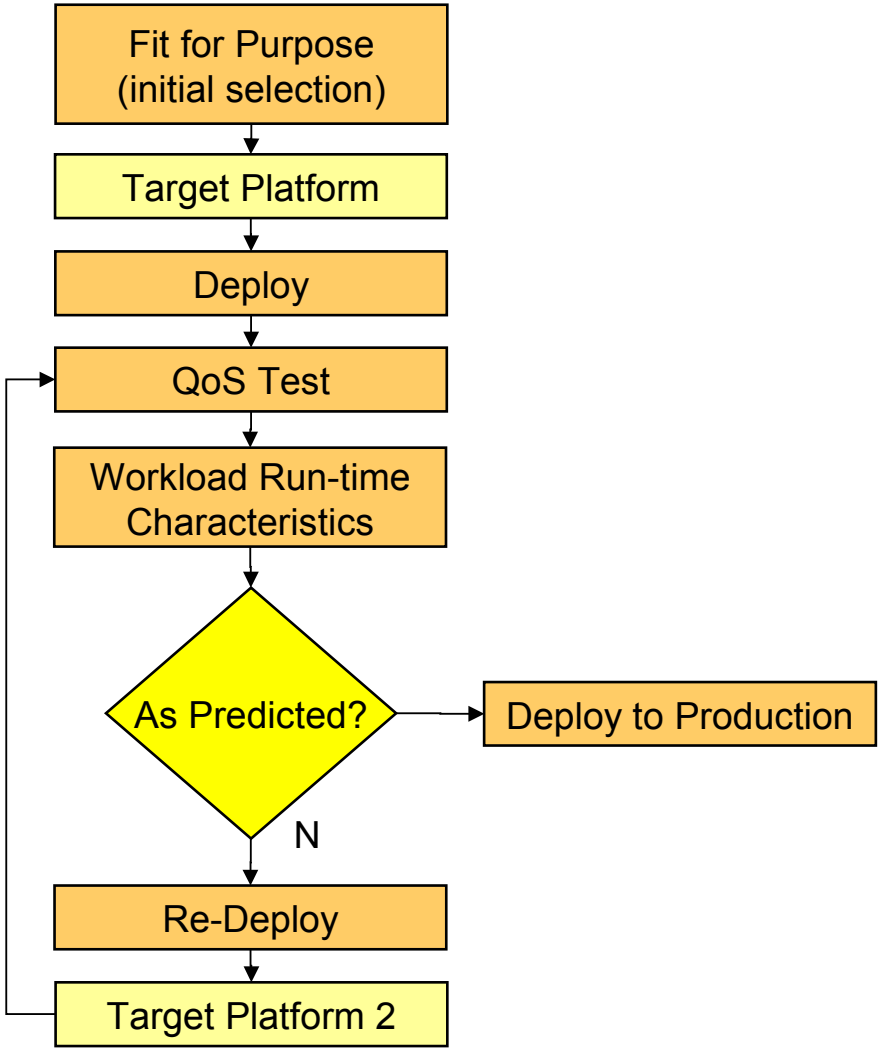
IT Decision Making (IBM Workshops)



Fit for Purpose – Platform Decision Making

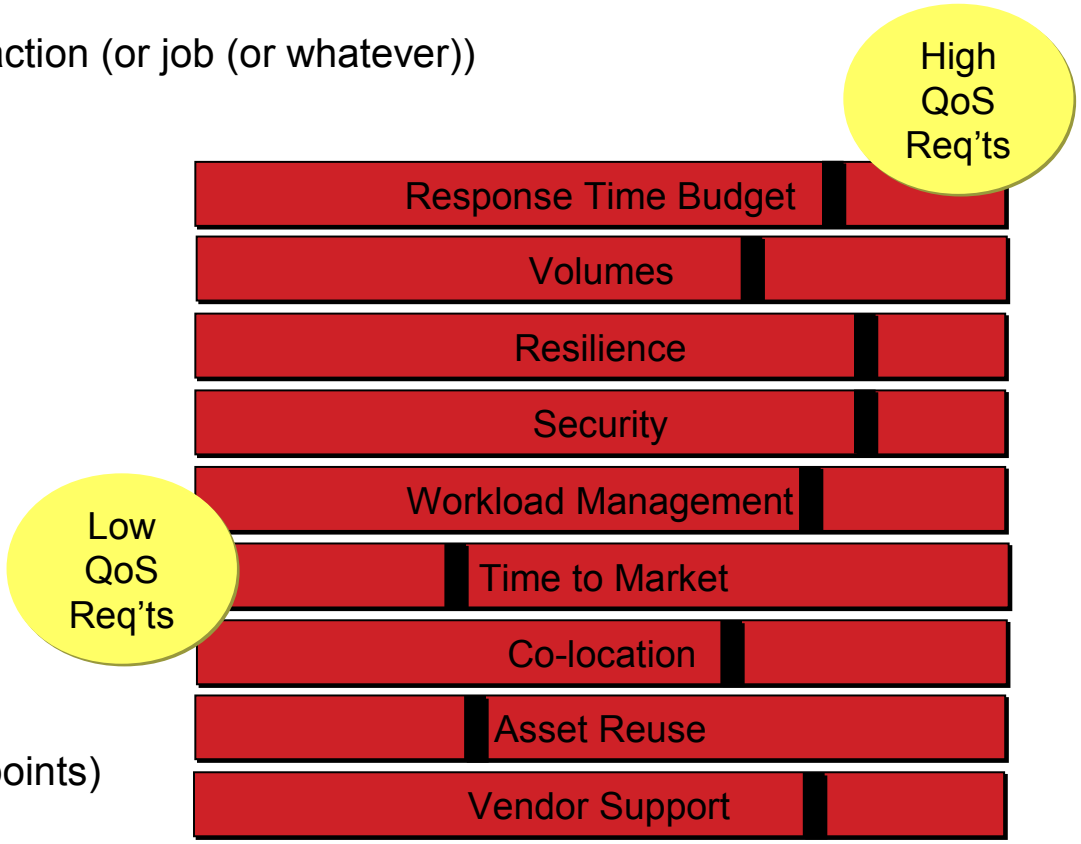


Process-based Fit for Purpose

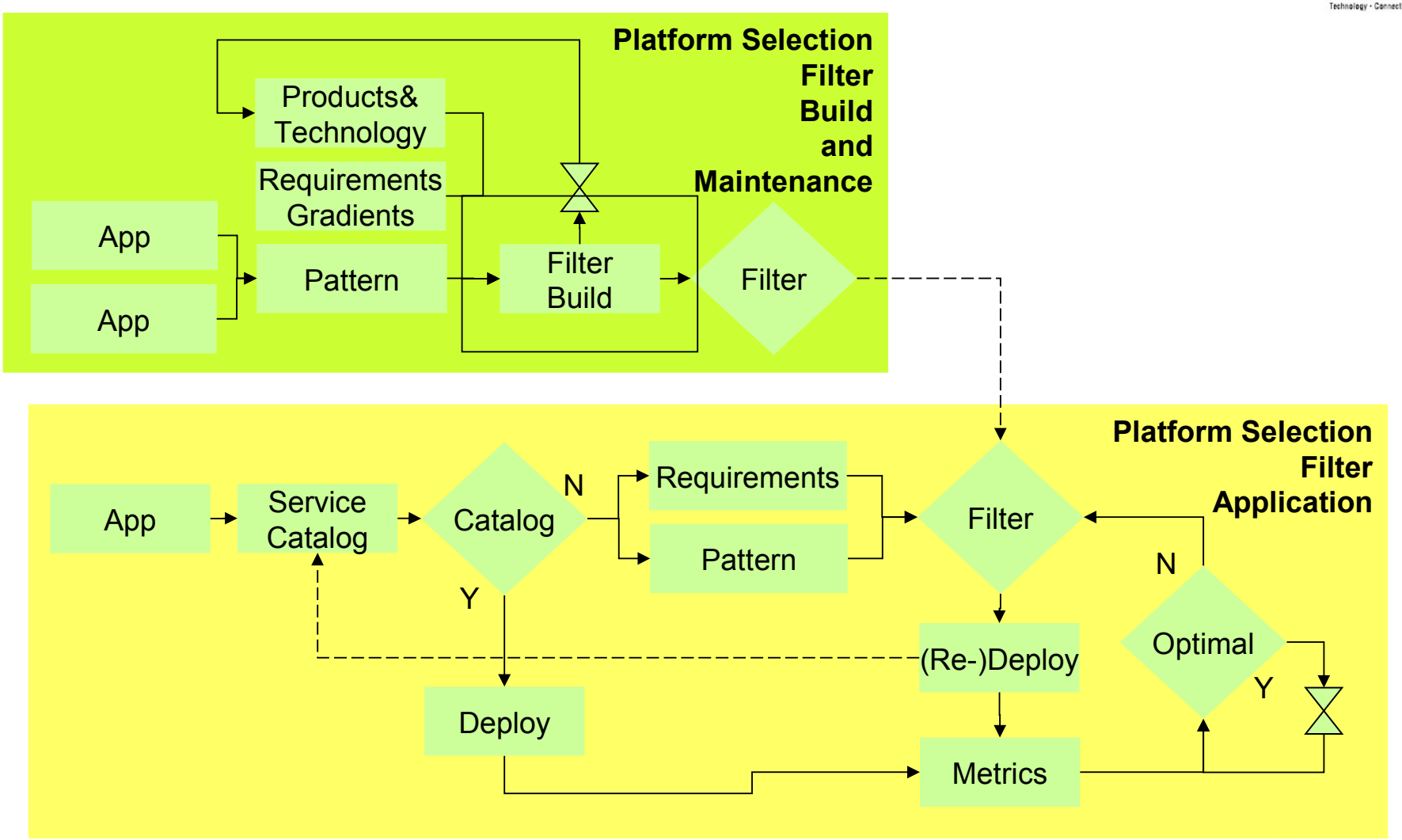


Quality of Service Criteria
Non-Functional Requirements

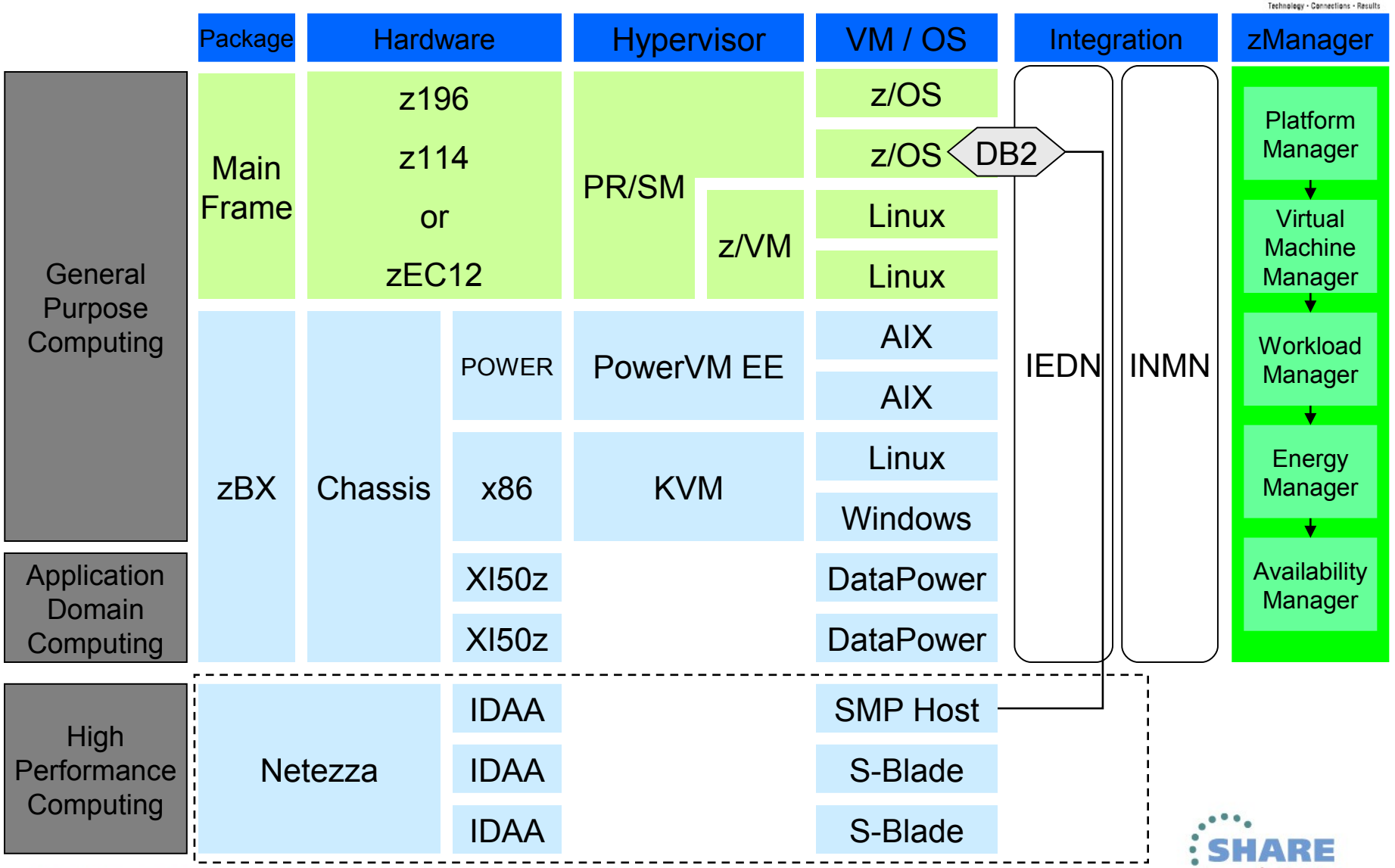
- Response-Time Budget
  - Performance (seconds per transaction (or job (or whatever))
- Volumes (Scalability)
  - Transactions per second
- Resilience
  - Availability (anti-fragile)
- Security
  - Audit and compliance
- Workload Management
  - Performance Consistency
- Time to Market
  - Lifetime (expected useful life)
- Co-location
  - Proximity to Data (to integration points)
- Asset re-use
  - Re-use and/or modernization vs. invention (re-build)

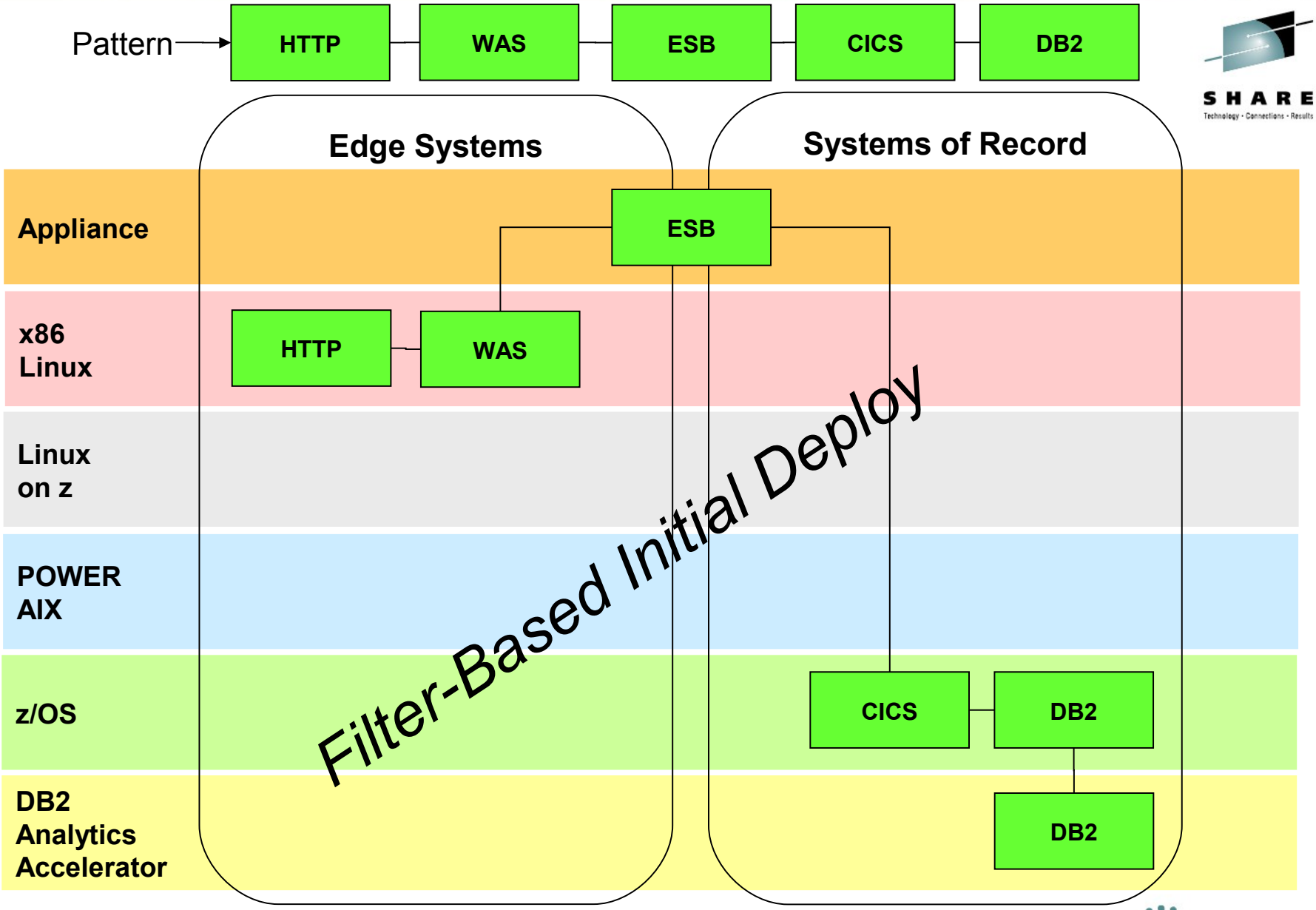


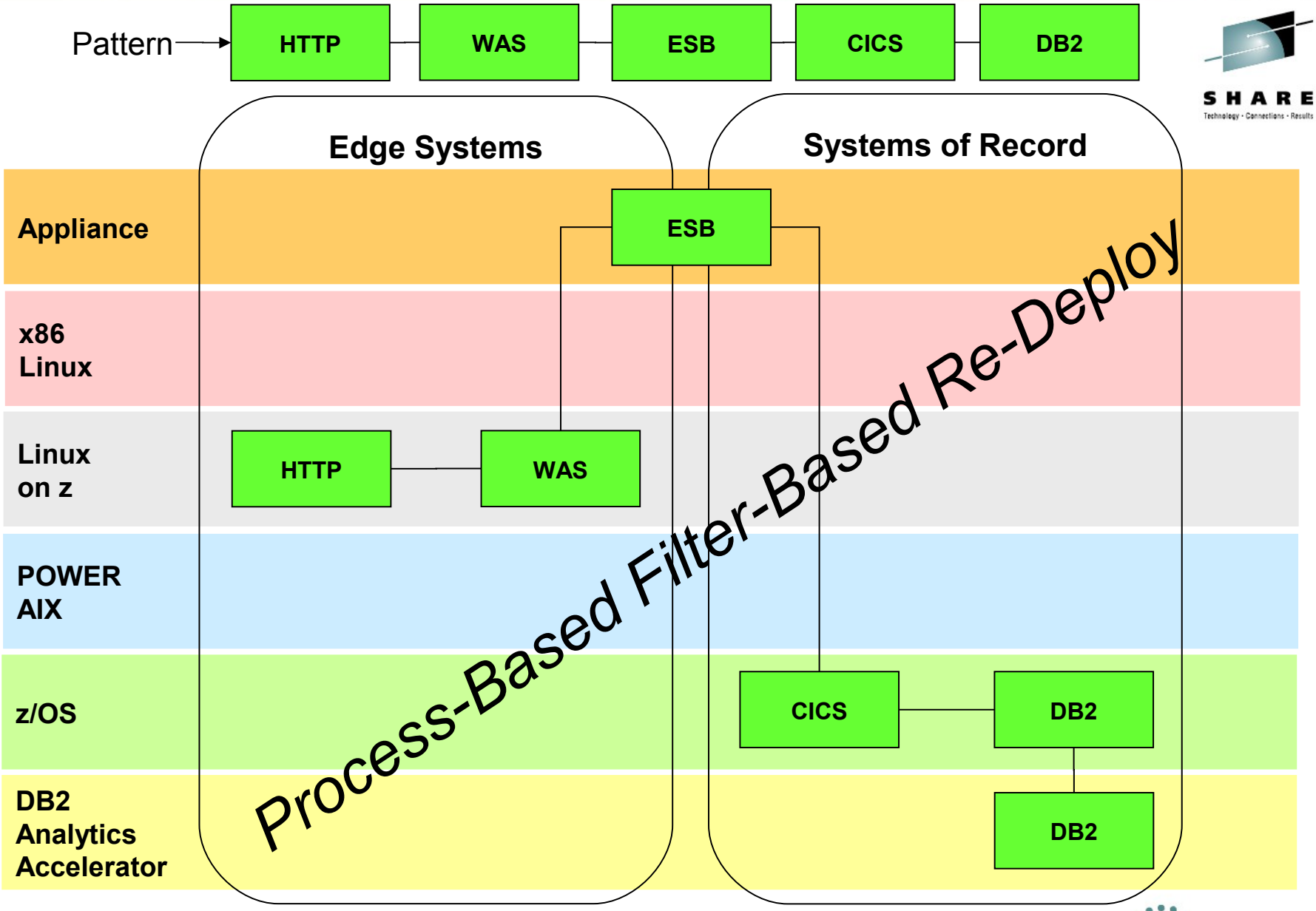
Pattern-Based Dynamic Fit for Purpose



The Foundation – The zEnterprise Converged System




Pattern
HTTP
WAS
ESB
CICS
DB2
Edge Systems
Systems of Record
Appliance
ESB
x86
Linux
HTTP
WAS
Linux
on z
POWER
AIX
z/OS
CICS
DB2
DB2
Analytics
Accelerator
DB2
Filter-Based Initial Deploy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on z
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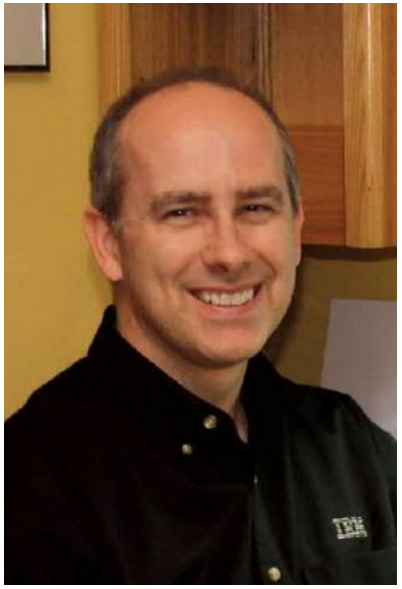
WAS
POWER
AIX
z/OS
CICS
DB2
DB2
Analytics
Accelerator
DB2
Process-Based Filter-Based Re-Deploy

The Premise – The Question

- The Premise
  - Future zEnterprise could be the “IT Singularity” required by traditional IT to sustain the value proposition of traditional IT.
- The Question
  - What’s missing in the zEnterprise product (or roadmap) preventing it becoming the future “IT Singularity”?
- I’d love your feedback … today … or …
  - mbauman@us.ibm.com

The End

Presenter Biography



- Montgomery (Monte) Bauman
- IBM Columbus
- mbauman@us.ibm.com
- 614-937-7076

- Title: IBM Certified Senior Consulting IT Specialist
- Role: System z Technical Support Specialist

- Monte Bauman began his work in the IT industry in 1983 with the IBM Company in Endicott NY Glendale Processor Development Laboratory. Monte graduated from The Ohio State University with a BSEE that same year. From 1983 through 1991 Monte supported development of the 4300 and 9370 and 9221 product lines writing System Test code (assembler and PLX) and Hardware Management Console code (C). In 1991 Monte moved to Columbus, Ohio, becoming an IBM Large Systems Systems Engineer (SE). Since 1991, Monte's title has changed numerous times, but his role as a mainframe technical support advocate for mainframe customers in Ohio (and now across the Midwest and east coast) remains the same. Monte now concentrates the bulk of his efforts in supporting "new workloads" on the mainframe, including eBusiness (web 2.0), business intelligence (analytics), server consolidation (IT optimization), and application modernization (SOA and AD). Monte has also developed tools and methods supporting efficient and thorough total cost of ownership (TCO) analysis.

- Monte resides in Columbus, Ohio, with wife and four children. Monte's hobbies include woodworking, skiing, ATVing, and traveling.