SE in a Cloud: Retiree Knowledge Capture and Consumption Optimization

By

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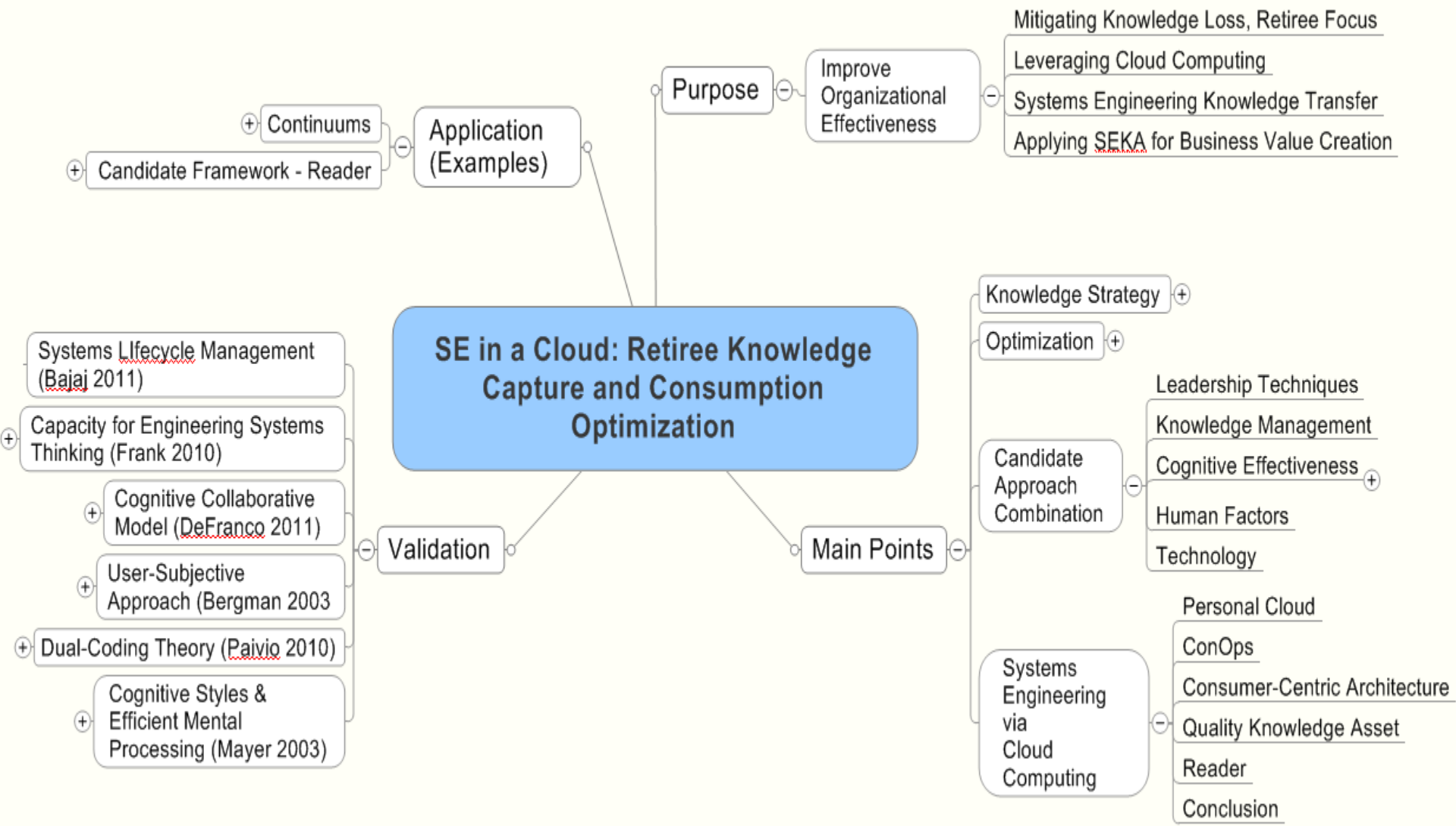
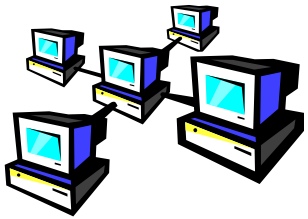
Agenda Map



(Covey 2004)

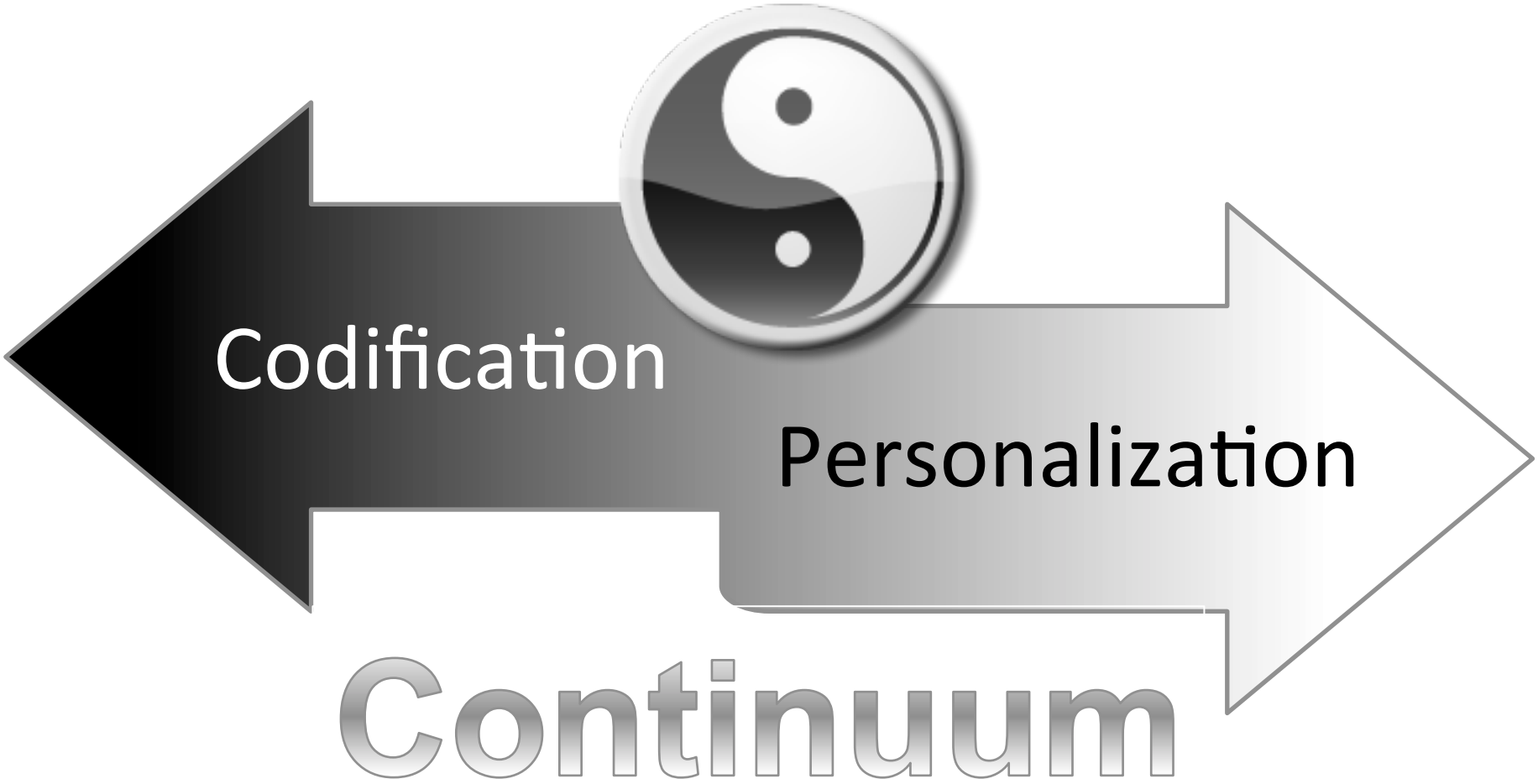
Retiree Knowledge Loss

Value Walks Out The Door



Systems & People Left Empty

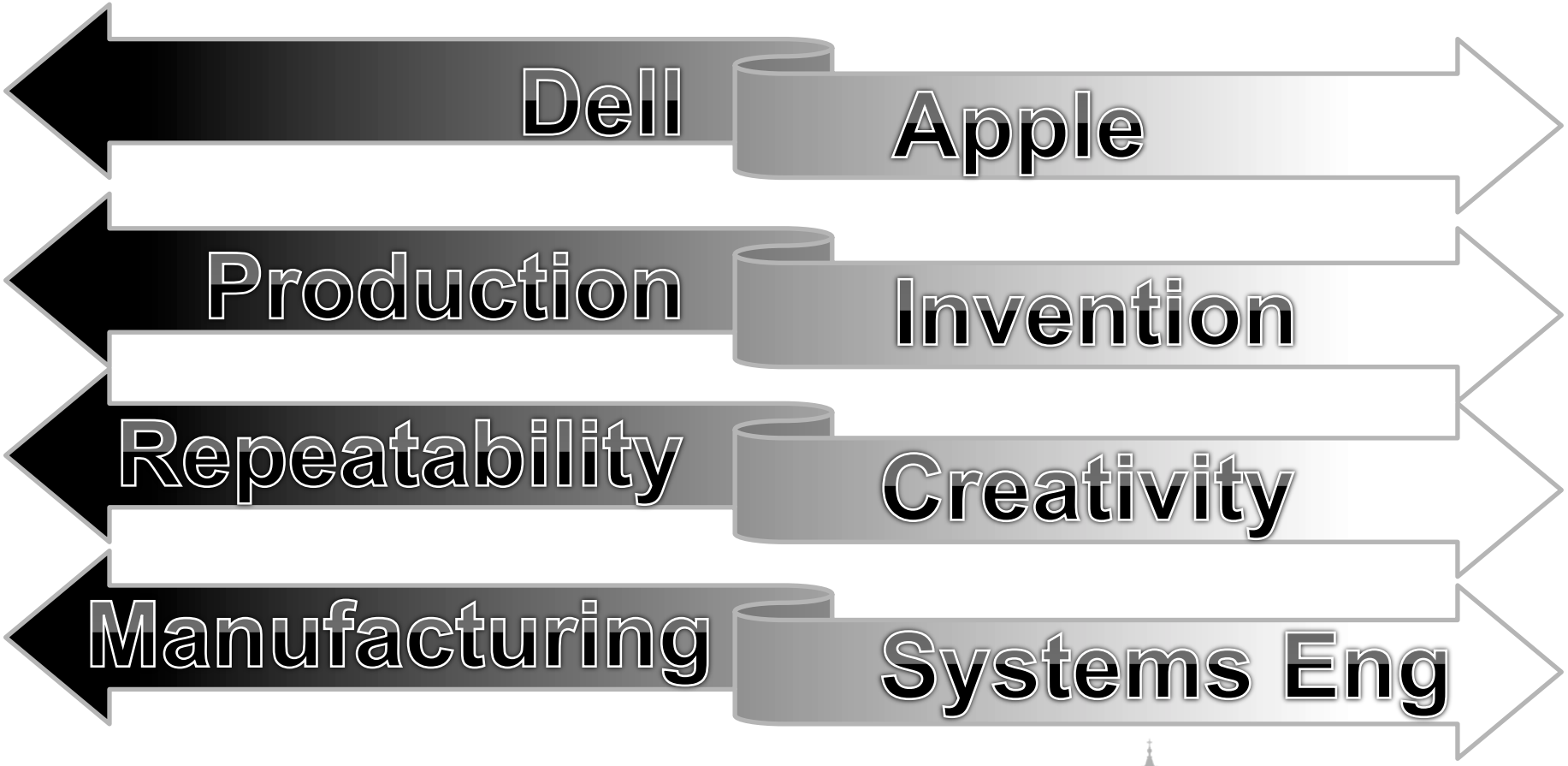
Knowledge Strategy Yin-Yang



(Kumar and Ganesh 2011)

Continuum Examples

Codification ← Bias → Personalization



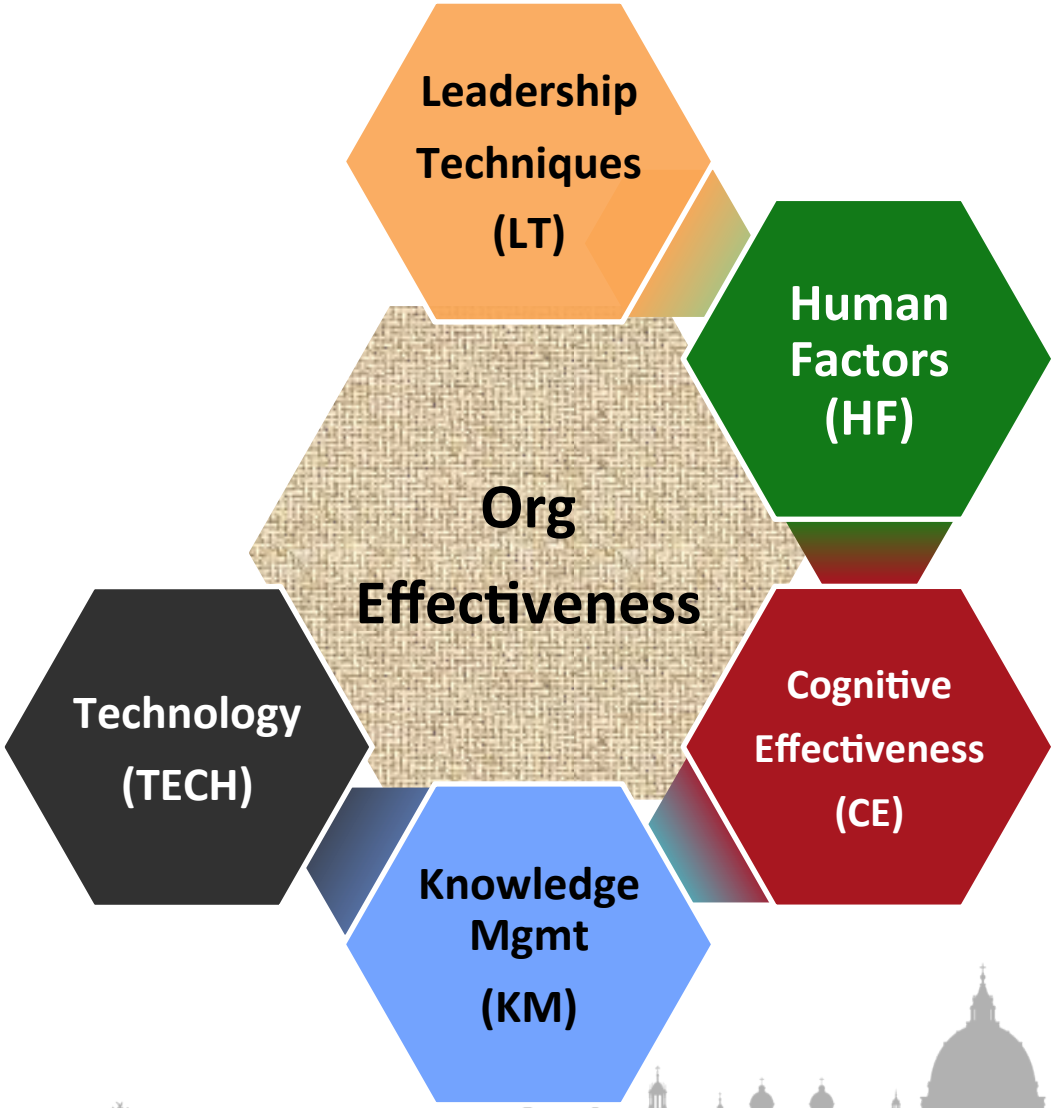
Optimization

- Retiree Knowledge Capture
  - Bias Toward Personalization (SE Knowledge)
  - Mentorships (Build Effective Relationships)
  - Mentee Authors QKA

- Knowledge Consumption
  - Need To Share (NTS) Paradigm
  - Multiple levels (Bullets, Synopsis, Full Paper)
  - Importance, Context, Categorization

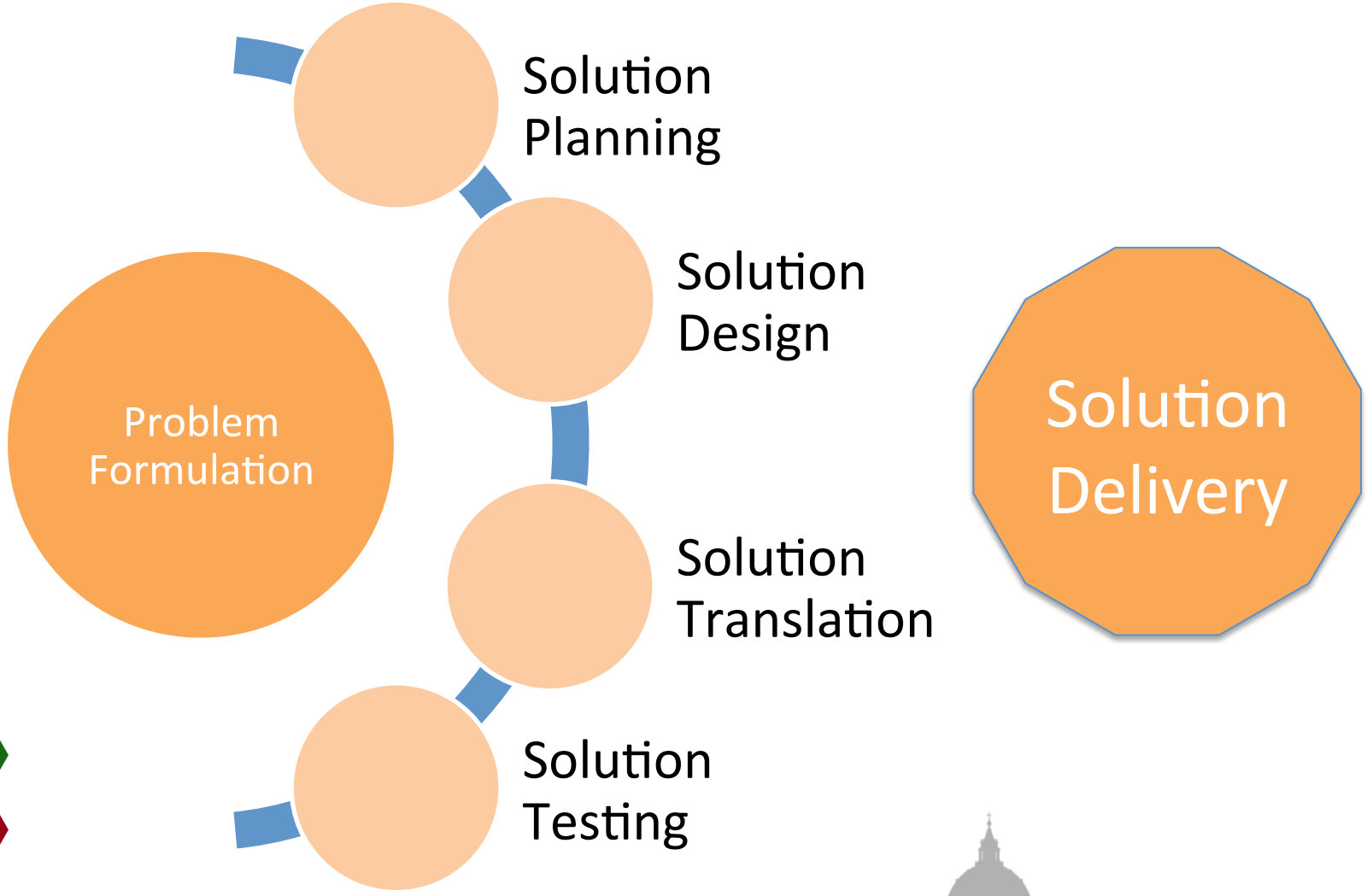
SEKA(s) become firm's IP

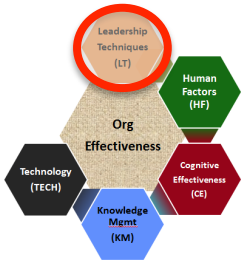
Candidate Approach



Weaving Supporting Research

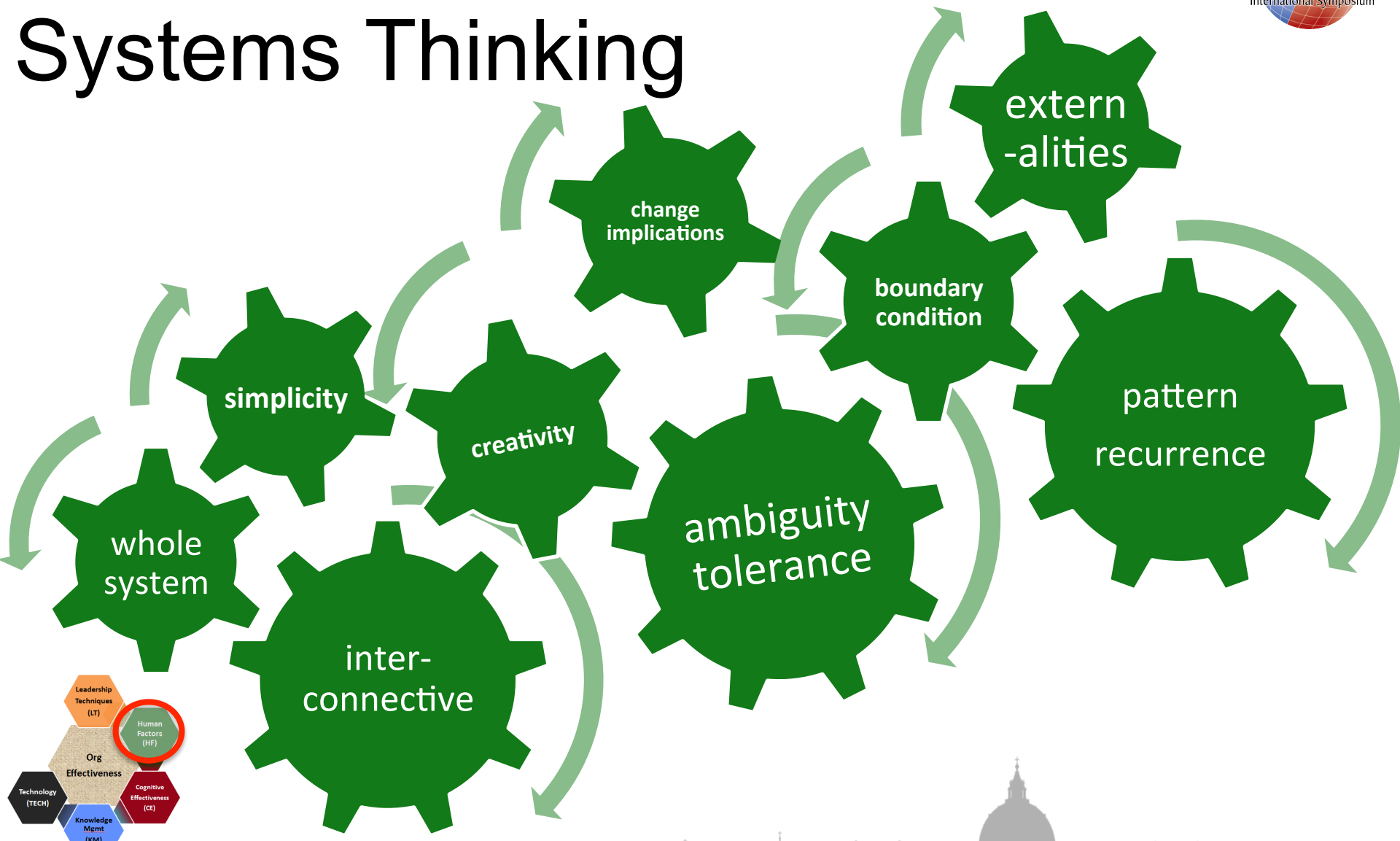
LT: Cognitive Collaborative Model





(DeFranco, Collin and Clariana 2011)

HF: Capacity for Engineering Systems Thinking



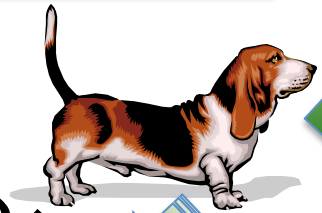
(Frank 2010), (Covey 2004)

HF: Dual-Coding Theory

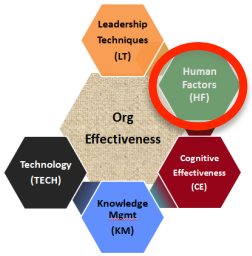
Knowledge and / or Know-how

Dog

Text/Verbal
Left Brain



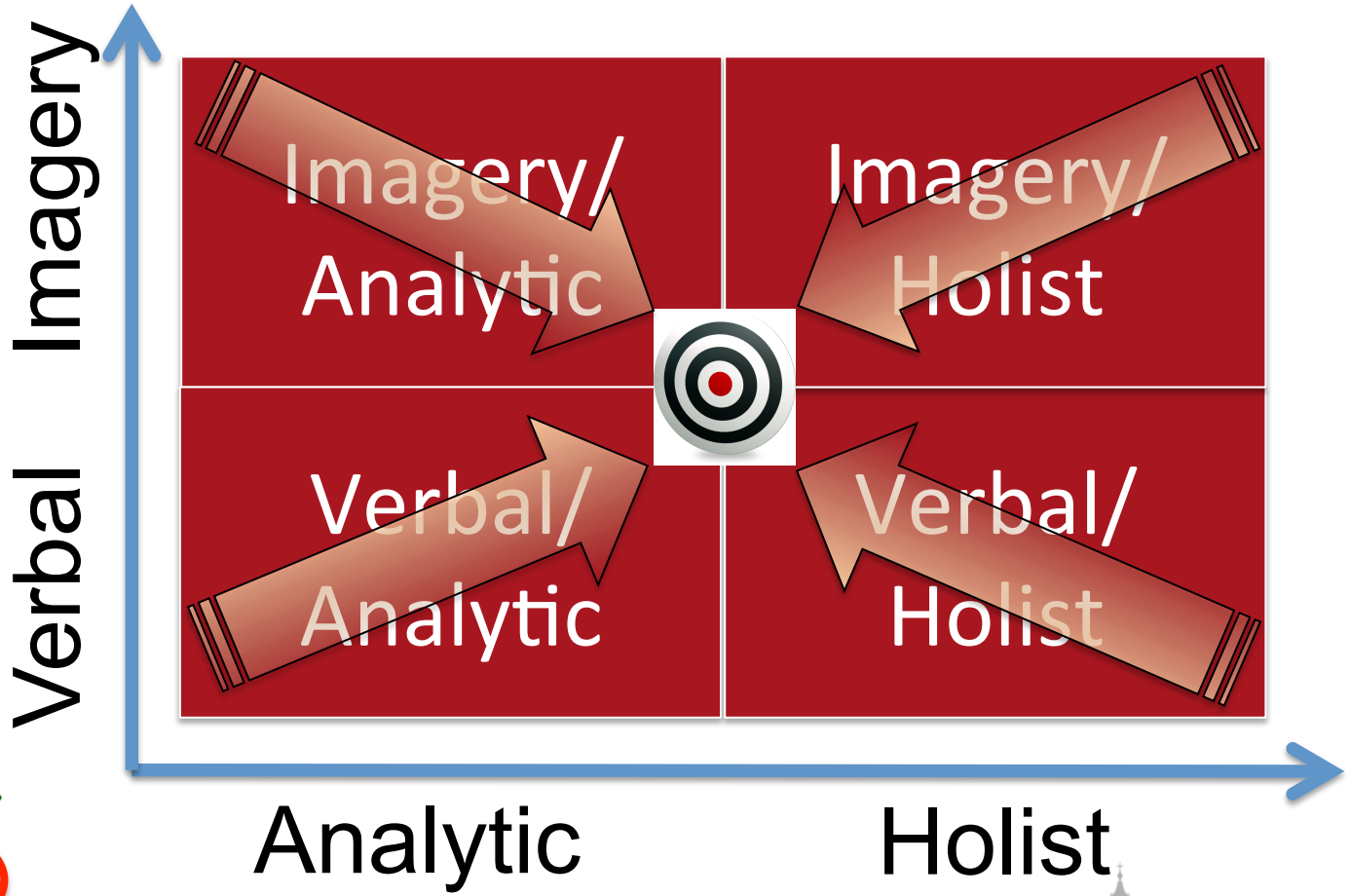
Visual/Image
Right Brain

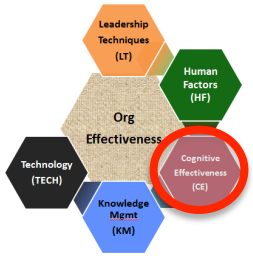


(Paivio 2010) (Mayer and Moreno 2003)

CE: Cognitive Style

Efficient Mental Processing





(Nguyen, Santos, Jr. and Russell 2011) (Mayer and Moreno 2003).

KM: User-Subjective Approach

Context

Bread crumb top
:
1st level above
Current location

Importance →

Importance

Global:

Personal:

← Context

Category →

Category

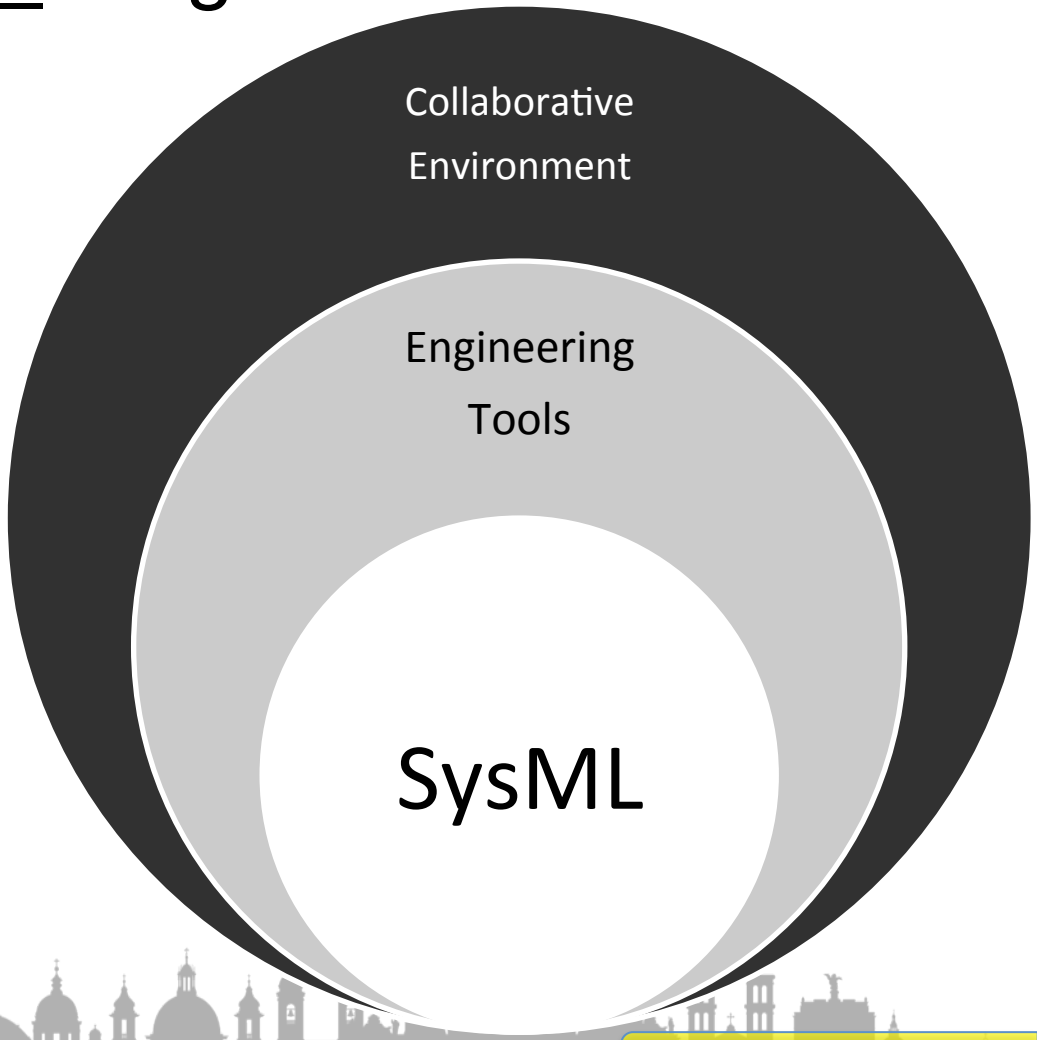
Author's: Requirements Traceability and Verification

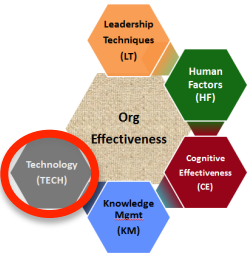
Personal: RTVM

(Bergman, Beyth-Marom and Nachmias 2003)

TECH: SLIM

- Systems LIfecyle Management
  - SysML Core
  - SLIM Coordinates
    - Engineering Tools
    - Repositories
    - Sharing/Reuse
    - Integration

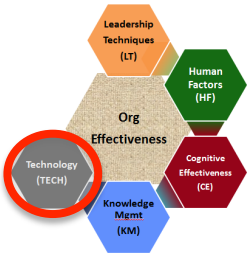




(Bajaj, et al. 2011)

TECH: Personal Cloud

- Personal Cloud (Gartner-2014,replaces PC)
  - Thin client devices
  - Storage stays in the Cloud
  - Processing Power
  - Client-side Apps
  - Personal Email

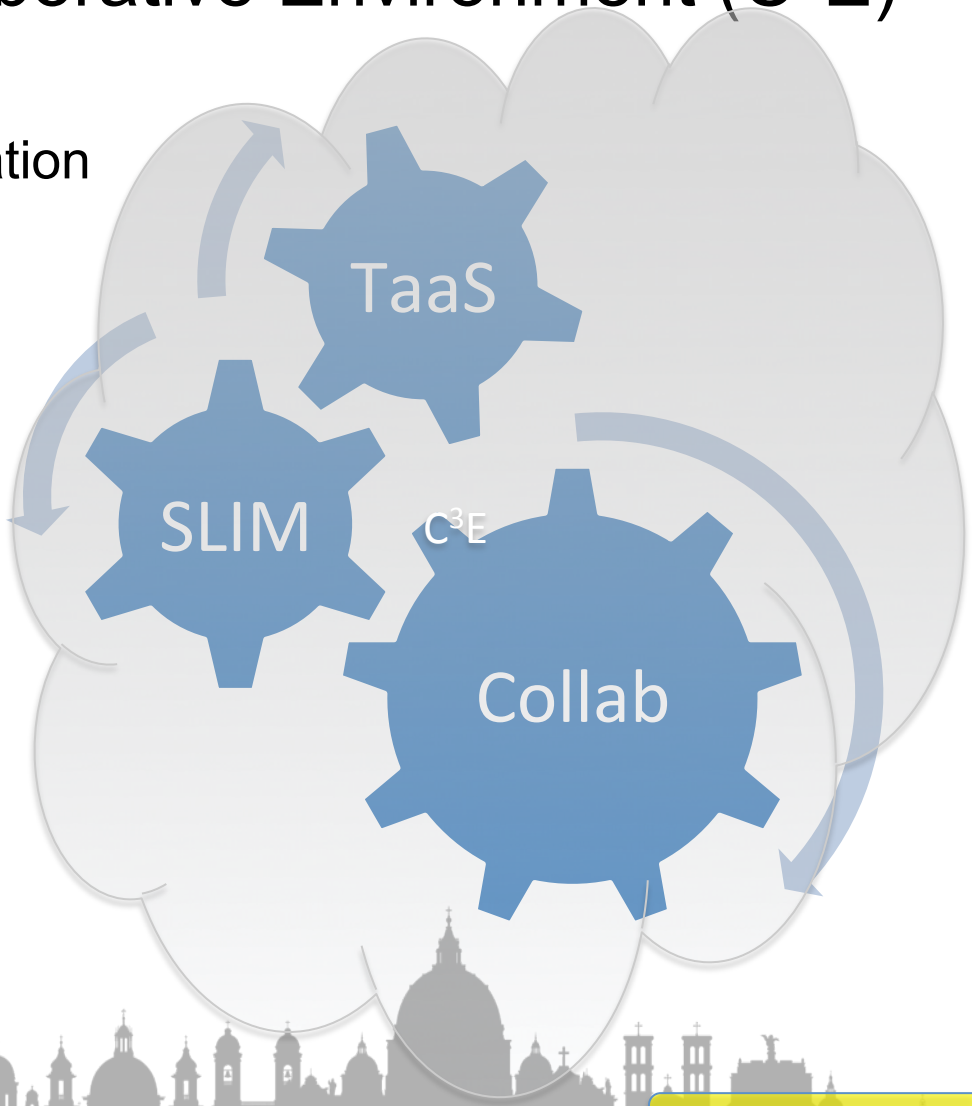


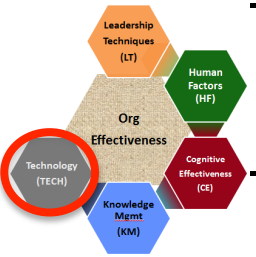
(NewsRx 2012)

TECH: SE in a Cloud

Cloud Computing Collaborative Environment (C^3E)

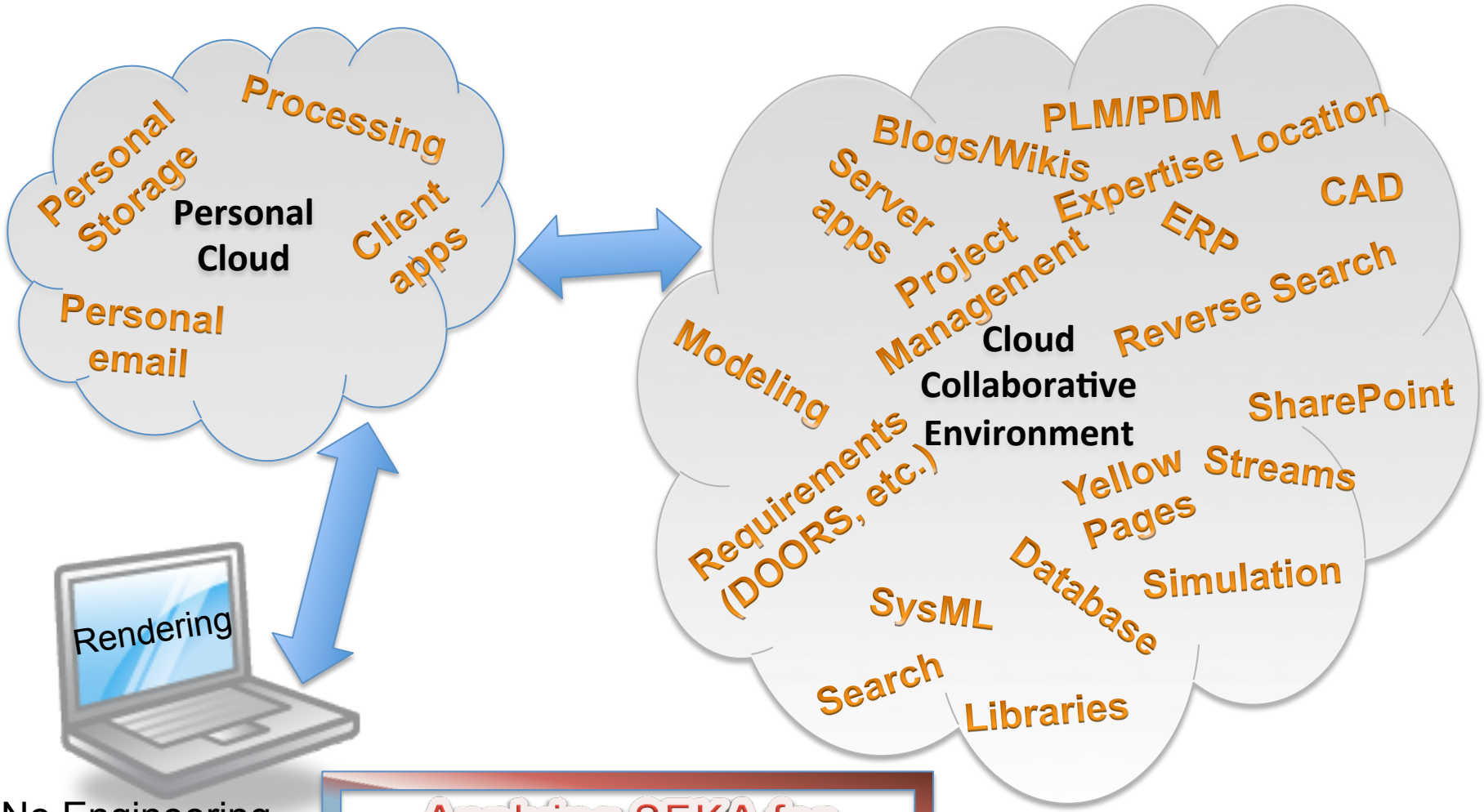
- Capabilities
  - TaaS / SLIM / Collaboration
- Capacity
  - on-demand self-service
- Performance
  - Broad network access
- Reliability
  - Resource pooling
- Availability
  - Measured service
- Serviceability
  - Rapid elasticity





(Mell, 2011)

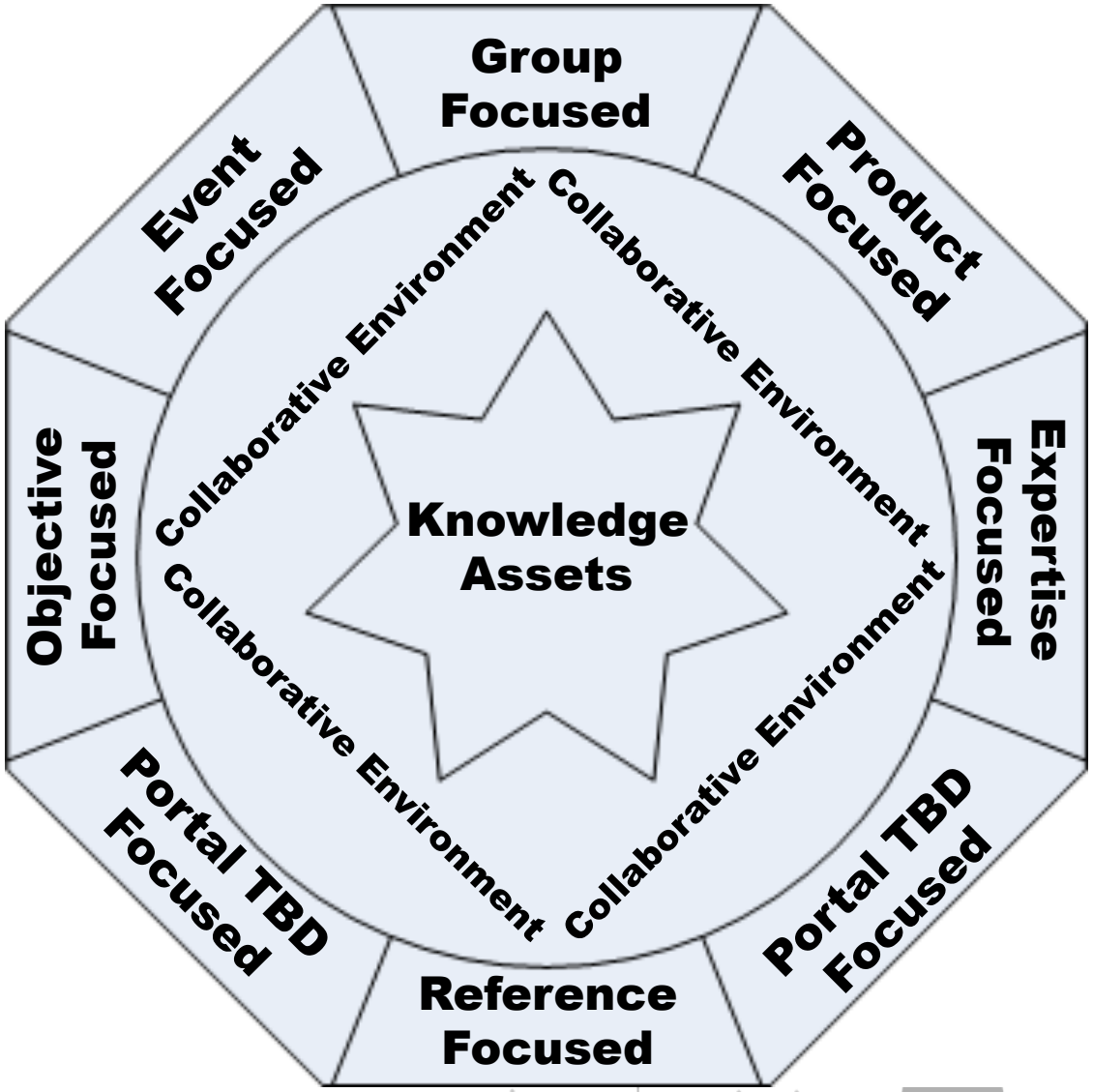
Cloud ConOps



No Engineering data stored locally

Applying SEKA for Business Value Creation

Consumer-Centric Architecture



QKA Anatomy

Quality Knowledge Asset – represented 3 Ways

Presentation Style – Bullets

Synopsis Style – Summary

White Paper – Expository

What might a reader look like?

Importance

Global:

Personal:

Category

Author's: Requirements Traceability and Verification

Personal: RTVM

Access %tile:

Most 90% - 100% Black
80% - 90% Brown
70% - 80% Red
60% - 70% Orange
50% - 60% Yellow
40% - 50% Green
30% - 40% Blue
20% - 30% Violet
10% - 20% Gray
Least 0%-10% White

Context

Bread crumb top
:
1st level above
Current location

Six words or less, no sentences

- MS PowerPoint Style
- Well Targeted Content
- Supporting Content
- Not the Presenters Script
- Six bullets or less

Personal Notes about the content (like writing in the margin of your book)

Navigation

Less Detail

Previous QKA

Next QKA

Page

More Detail

Reference

INCOSE. (2004). *Systems Engineering Handbook* (2a, June 2004 ed.). (T. Board, Ed.) Seattle, WA: International Council On Systems Engineering.

Portal View

Reference Focused

Importance

Global:

Personal:

Category

Author's: Requirements Allocation and Traceability

Personal: RTVM

Access %tile:

Most 90% - 100%Black
80% - 90% Brown
70% - 80% Red
60% - 70% Orange
50% - 60% Yellow
40% - 50% Green
30% - 40% Blue
20% - 30% Violet
10% - 20% Gray
Least 0%-10% White

Synopsis of the topic, written in abbreviated form but using full sentences with punctuation to summarize the scope of the bullets from the top level.

Think of cliff notes, abstracts, executive summaries and other text summarizations techniques to provide the essence of the topic, Knowledge Asset, in about a rich paragraph of information. The opening sentence should provide the reader with and overview, familiarizing them with the topic at hand. The following three to five sentences should elaborate and flesh out the information to be conveyed about the topic. The last sentence should wrap up the topic in a summary, recap or conclusion manner.

Personal Notes about the content (like writing in the margin of your book)

Context

Bread crumb top
:
1st level above
Current location

Navigation

Previous QKA

Next QKA

Page

Less Detail

More Detail

Reference

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Portal View

Reference Focused

Importance

Global:

Personal:

Context

Bread crumb top :

1st level above

Current location

Category

Author's: Requirements Allocation and Traceability

Personal: RTVM

Access %tile:

Most 90% - 100%Black
80% - 90% Brown
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60% - 70% Orange
50% - 60% Yellow
40% - 50% Green
30% - 40% Blue
20% - 30% Violet
10% - 20% Gray
Least 0%-10% White

White paper style representation of this Knowledge Asset and the third, the deepest, layer of content in this Quality Knowledge Asset (QKA). The detailed information would be the content from the body of knowledge and would typically cover about two to seven pages of material with the same scope as the top level bullets and the second level synopsis.

The detail accounting can provide expanded purpose content which could be articulated at a level understandable by a reader who has less education or experience with the topic.

The main points of the topic would typically be expanded upon in turn with significant supporting detail.

Each of the main points can, and usually should, have validation support showing reasons or background for the statements of fact.

Some readers find it easier to understand concepts based on application of the material, examples, case study explanations, etc. As such, this level of the QKA could provide historical applications of the material.

Personal Notes about the content (like writing in the margin of your book)

Navigation

Previous QKA

Next QKA

Less Detail

More Detail

Page

Reference

INCOSE. (2004). *Systems Engineering Handbook* (2a, June 2004 ed.). (T. Board, Ed.) Seattle, WA: International Council On Systems Engineering.

Portal View

Reference Focused

Conclusion

Vertical Knowledge Transfer

(Learn)

Org Effectiveness

Cloud Collaborative Environment

Business Value Creation

Horizontal Knowledge Transfer (Teach)

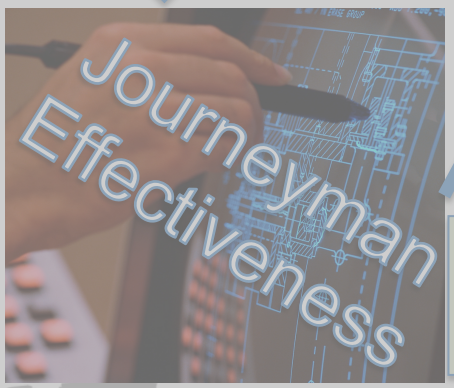
(Beazley, Boenisch and Harden 2002)

Conclusion

Org Effectiveness

Cloud Collaborative Environment

Vertical Knowledge Transfer (Learn)



Business Value Creation

Horizontal Knowledge Transfer (Teach)

(Beazley, Boenisch and Harden 2002)

Backup Material

- References
- Acronyms
- Biography
- Detailed Consumer-Centric Architecture

References 1

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Acronyms 1

C^3E = Cloud Computing Collaborative Environment

CCM = Cognitive Collaborative Model

CE = Cognitive Effectiveness

CEST = Capacity for Engineering Systems Thinking

Collab = Collaboration

ConOps = Concept of Operations

LT = Leadership Techniques

HF = Human Factors

Acronyms 2

QKA = Quality Knowledge Asset(s)

RTVM = Requirements Traceability and Verification Matrix

SEKA = Systems Engineering Knowledge Asset(s)

SLIM = Systems LIfecycle Management

SysML = Systems Markup Language

TECH = Technology

TaaS = Tools as a Service

BIO: Kenneth (Ken) R. Shelby Jr.

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Mr. Shelby is currently the IT Partner handling CIO responsibilities for the Surveillance and Navigation Systems Line of Business at Lockheed Martin's Space Systems Company. He has the unique professional posture of combined extensive experience with government Aerospace and Defense Contractors, leadership roles in large systems integrators, small business administration and significant, relevant academic accomplishment.

He has 30 years of progressive technical, managerial and leadership experience starting in 1981 with Allied Bendix Aerospace on the NASA Spaceflight Tracking and Data Network

Mr. Shelby holds a Master of Science degree in Systems Engineering from The George Washington University, and a Bachelor of Science in Electronics Engineering Technology from Capitol College. He is a graduate of the General Electric "Crotonville" corporate business school, Lockheed Martin's Institute for Leadership Excellence and Capturing New Business Institute. He has completed his Systems Engineering Ph.D classes and is preparing a dissertation in the Knowledge Management research area.

His decorations include an LM Business Capture Individual Special Recognition Award, the GE Circle of Excellence and a "Silver Snoopy award" from the Space Shuttle Astronauts.

Consumer-Centric Architecture