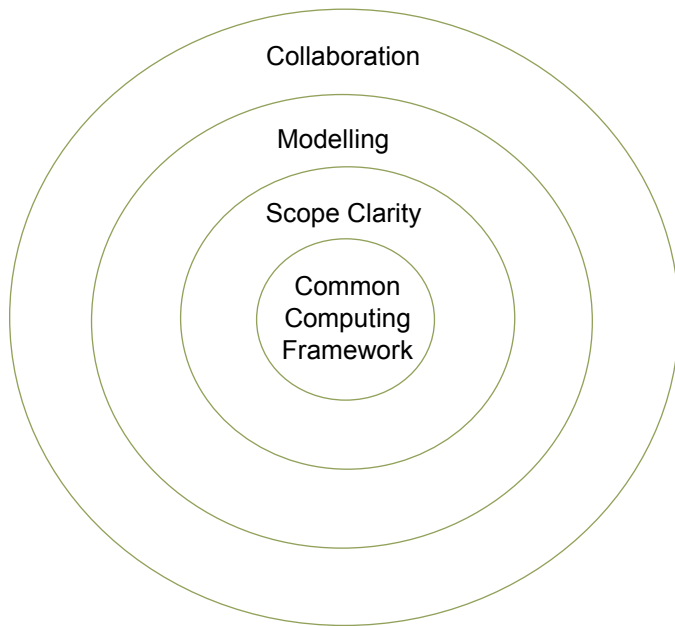


A Preliminary Viewpoint – The Value of Common Framework Thinking In IT



DRAFT

Objective

- This material lays out a point of view on how IT (development and operations) can be made more effective by using a common computing framework for collaboration purposes
- This document achieves this purpose by :-
 - Laying out a set of issues that are commonly agreed to exist in IT today
 - Undertaking a preliminary analysis of these issues as well as new interview data to provide a more detailed set of observations
 - Proposing some initial mitigating strategies and techniques that may help – the main one being the idea of a more centralized “computing framework” which simplifies and integrates traditionally disparate descriptive system documents
- Ongoing research is aimed at providing greater validation, insight and potentially varying ideas – hence this paper is a preliminary point of view

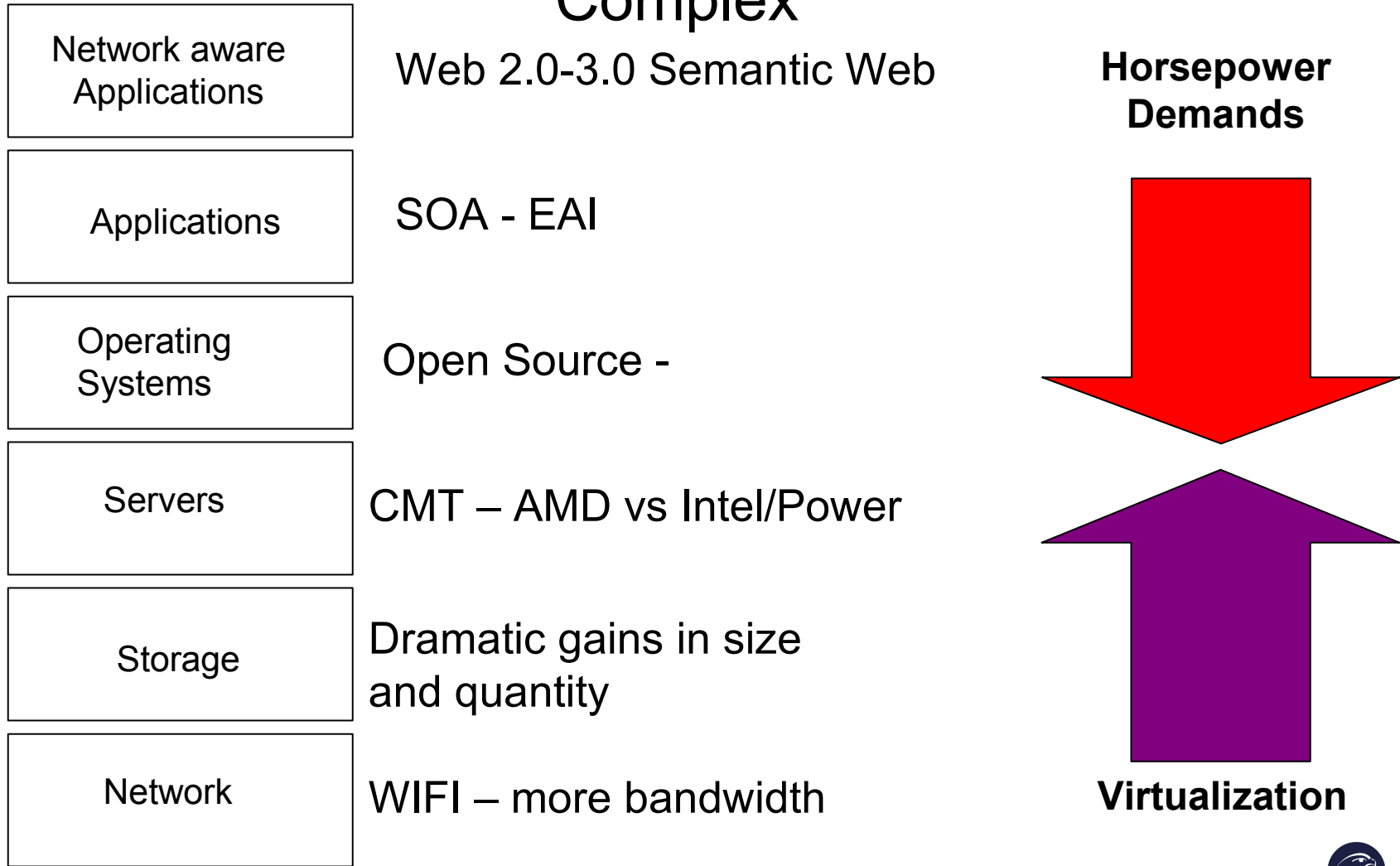
Background

- This research project is being jointly conducted by Miles Faulkner and Professor Debbie Compeau from the Ivey School of Business
 - Step 1 was desk research and idea formulation
 - Step 2 – Conduct a workshop with some 25 experienced IT and business people
 - Step 3 Undertake qualitative interviews (we are in the middle of this process)
- The next step is to analyze qualitative research and finalize desk research and publish an academic and

Collaboration isn't easy

- Research by Cronin & Weingart - "Representational Gaps, Information Processing and Conflict in Diverse Teams" discusses the idea that different team members can have different problem definitions that cause difficulties in decision making
 - This paper argues that it is inconsistencies in cognition and perception in groups that causes problems. In essence each individual's "representation of the problem" is different and their resulting mental solution framework will vary
- In the most recent HBR article – 8 Ways to Build Collaborative Teams Gratton and Erickson state "We found that the greater the proportion of experts a team had, the more likely it was to disintegrate into non-productive conflict or stalemate!"
 - Of the "8 Ways" – the majority are "soft skill sets" – open work environments, collaborative behaviour "top down" human communication skills, role clarity strong sense of community....

The Computing Environment Getting More Complex



A Checkered History?

According to a recent study by Forrester Research, CEOs believe that IT:

- Is not a source of proactive leadership for innovation
- Is ineffective at leading process improvement
- Is not doing a great job of managing IT assets



Standish Group Chaos Report

- 31.1% of projects will be canceled before completed
- 52.7% cost 189% of their original estimates
- \$81 billion spent in '95 for canceled software projects for projects over \$10 million, --chances of being on time and on budget are statistically ZERO

KPMG Study –
Survey of Failures

- 87% exceed schedule by > 30%
- 56% exceed budget by > 30%
- 45% don't produce planned benefits

Standish Group

- 34% success rate (compared to 16%)
- 51% are challenged (over budget, exceeds time or has fewer features than intended)
- Time overruns 63%, down from 222%
- Cost overruns 43% down from 189%
- 23% of projects are not completed (down from 31%)
- \$38 billion lost on failed projects



How the customer explained it



How the project leader understood it



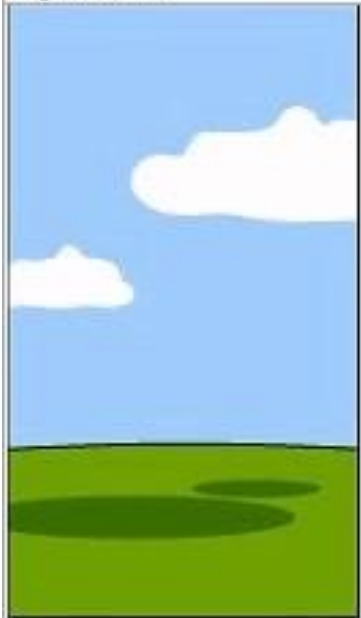
How the analyst designed it



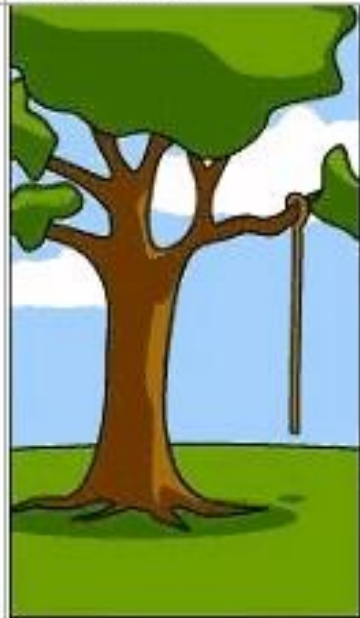
How the programmer wrote it



How the sales executive described it



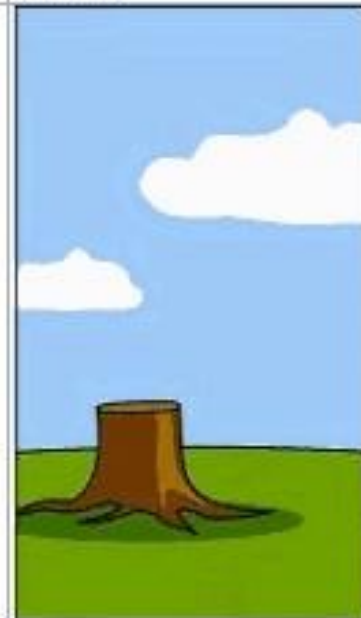
How the project was documented



What operations installed



How the customer was billed

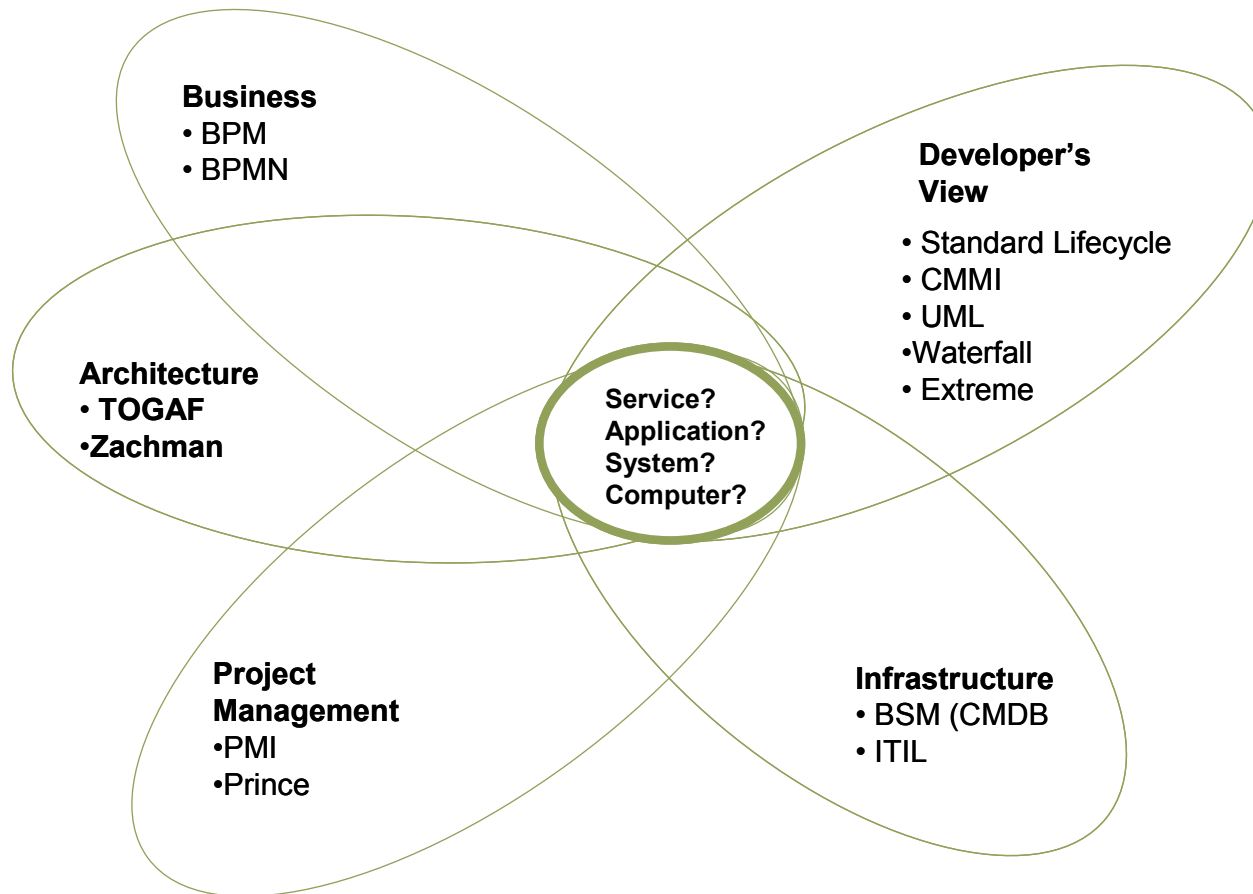


How the helpdesk supported it

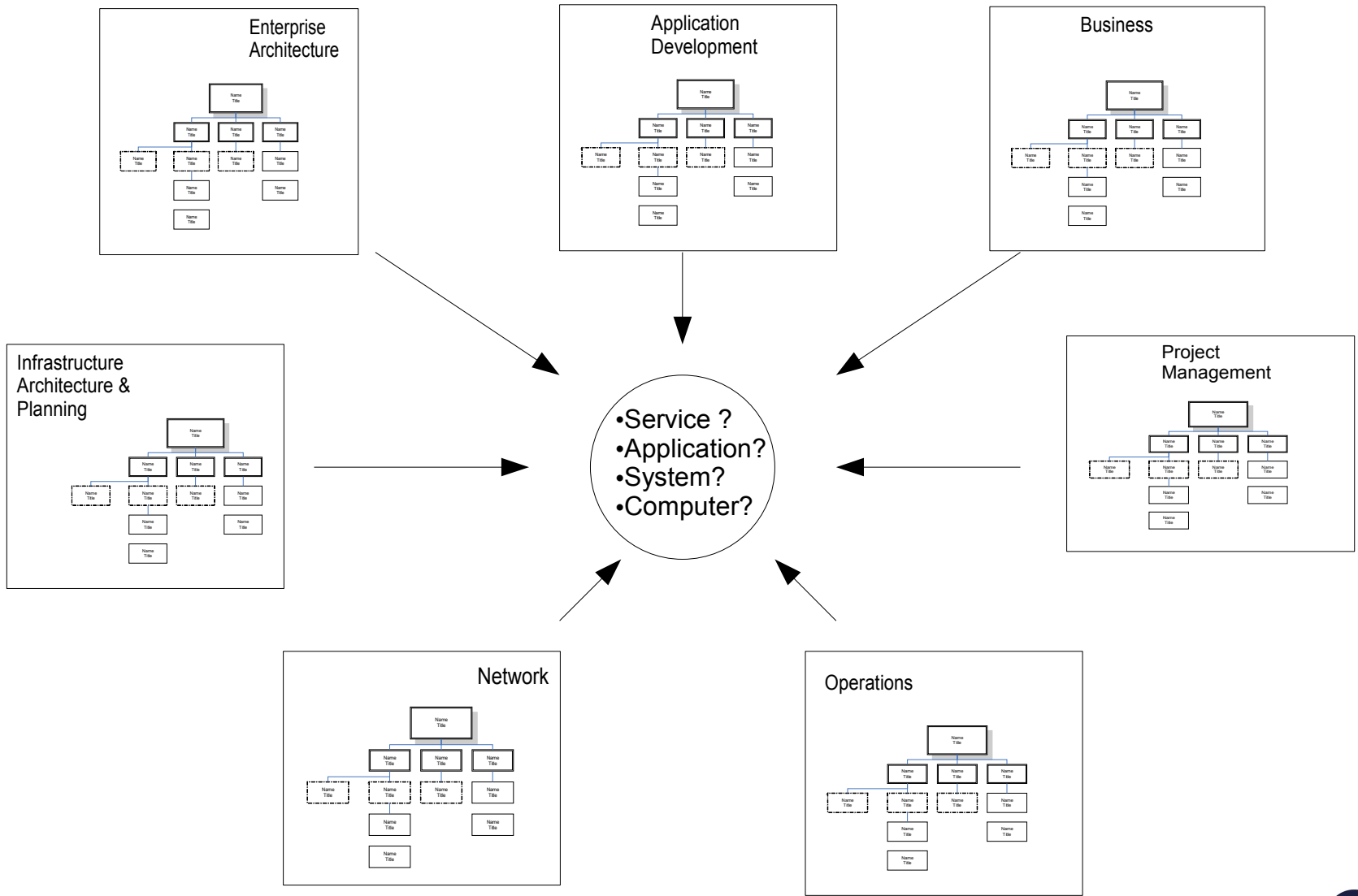


What the customer really needed

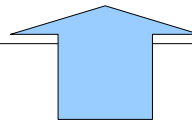
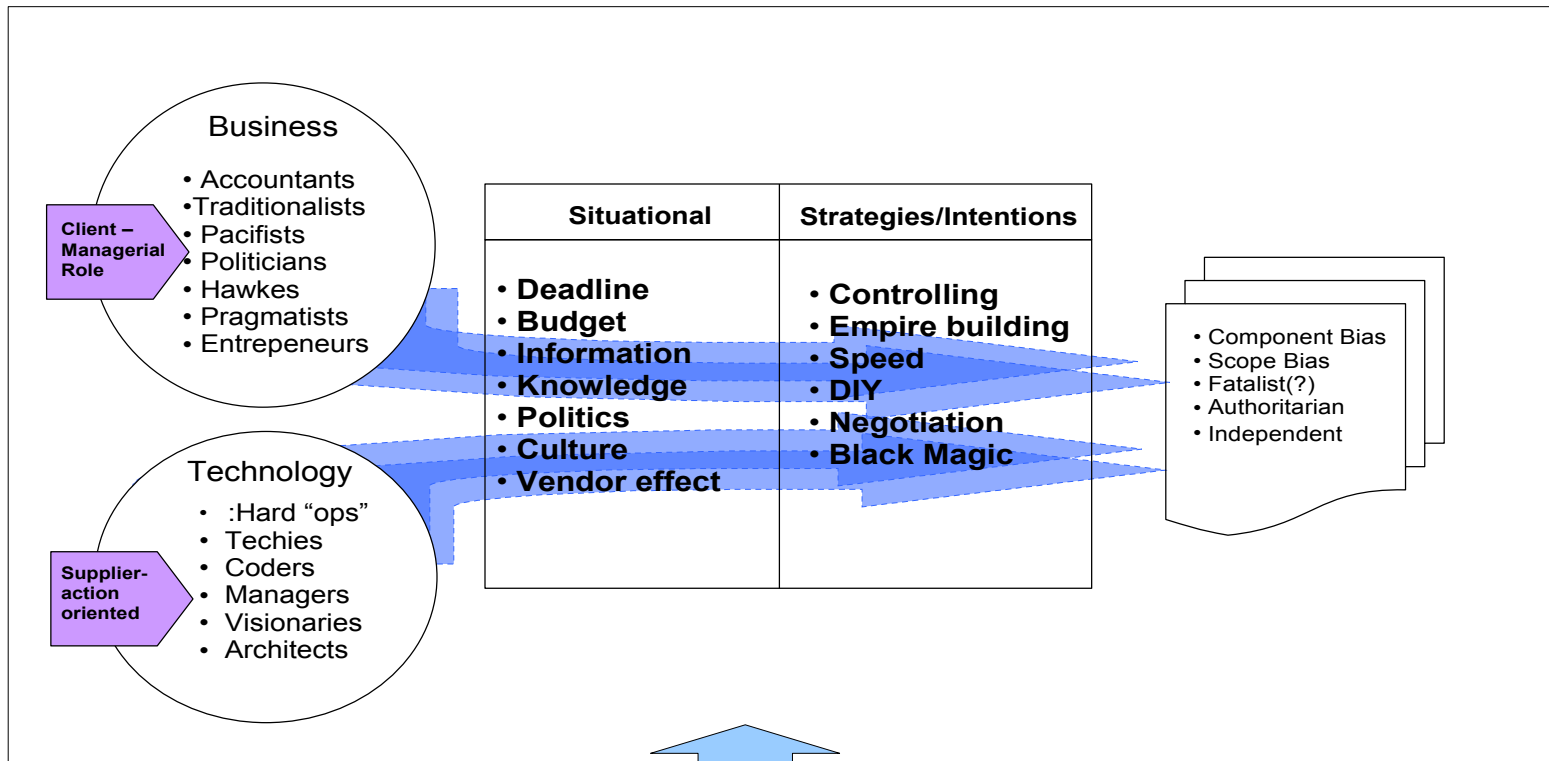
The IT Methodology Course



Organizational Barriers



Diverging Frames of Reference



- *Collaboration is hard!*
- *IT Project Delivery Track record poor*
- *Methodology overload*
- *Organizational barriers*



Richard Ivey School of Business
The University of Western Ontario



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Further Analysis

Causes of Trauma – Its probably not...

- Project Management – there is plenty of evidence that PM methodology and execution alive and well – but PM methodology is a process and not content specific
- Executive sponsorship – most large projects today when they get approval appear to have sponsorship
- Technology failing – again research suggests this is a rare cause for projects not achieving target ROI
- Its not really IT project *failure* – most projects suffer stress or don't meet all their objectives

Deeper Observations

- IT people just aren't great communicators and collaborators
- Technology and business groups with different views and objectives working on the same project
- Doubts about whether joint teams agree on what they are building/operating
- Loose project scope statements – requirements become hazier as they ripple down to delivery teams
- Poorly defined “non functional requirements” – eg how much processing is required
- System documentation that is fragmented and component/tier specific
- Ad hoc diagramming techniques to represent systems (Visio is king!)
- Cultural aversion to systematic documentation and structure in North America



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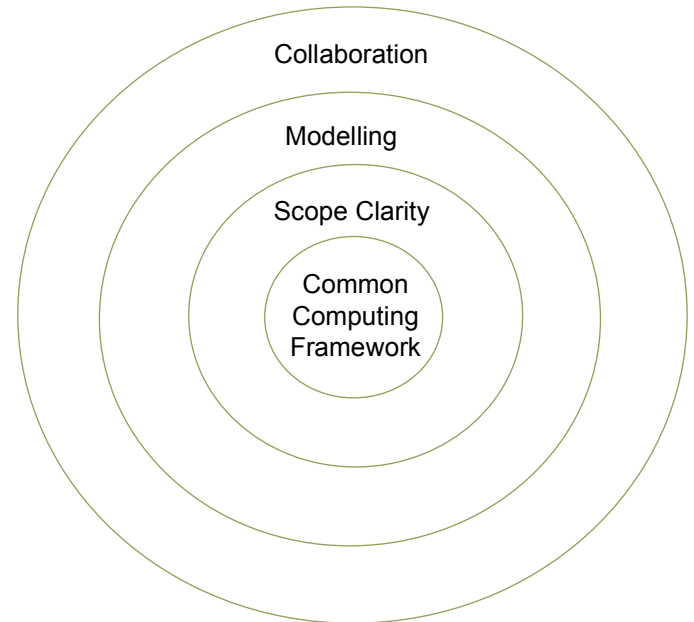


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How Better Might We Approach
This?

An Approach

- Each component of this approach builds on previous steps and thus you start from the inside and work outwards for complete and successful alignment
- The premise is that improving collaboration will not be sufficient if there is not a common understanding of the project/service/system in the first place (but it doesn't hurt!)
- It is assumed that strong Project Management and sponsorship are present (not a "failure factor")
- Research approach would be to test discrete components of this approach



Common Computing Framework

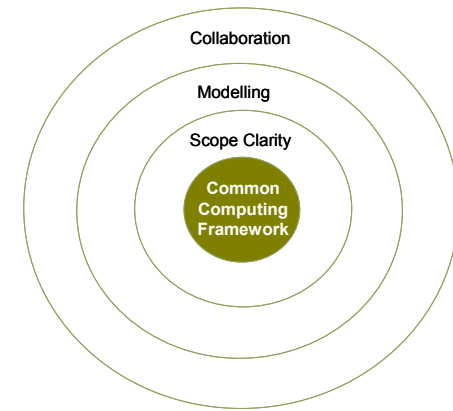
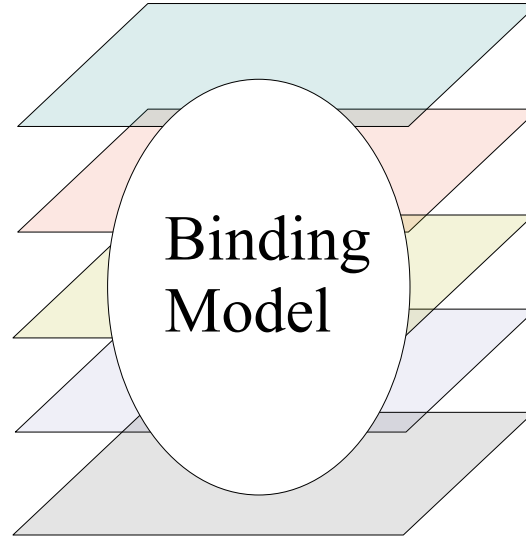
Service
Composition

Application
Architecture

System
Architecture

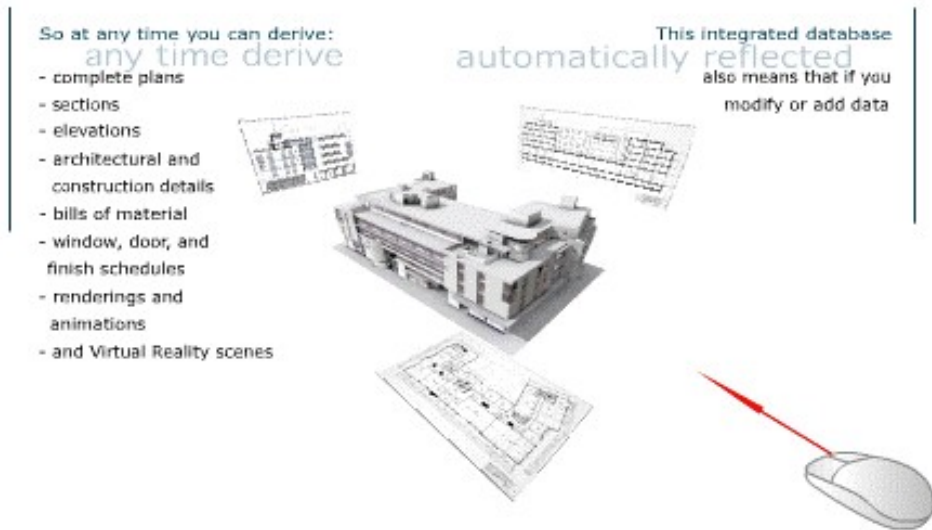
Network
context

Datacentre
Support



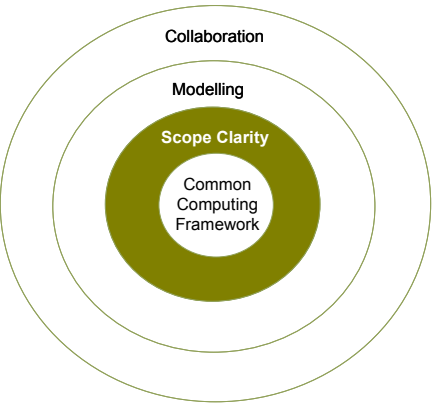
If its Good Enough for the Building Business...

Building Information Management (BIM)

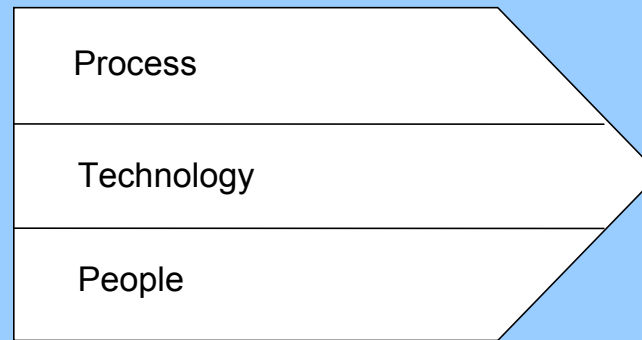


- Whilst IT and buildings are different, static vs dynamic in many respects, it is legitimate to compare how different industries deal with complexity
- A Building Information Model, or BIM, utilizes cutting edge digital technology to establish a computable representation of all the physical and functional characteristics of a facility and its related **project**/life-cycle information, and is intended to be a repository of information for the facility owner/operator to use and maintain throughout the life-cycle of a facility.“
- http://en.wikipedia.org/wiki/Building_Information_Modeling

Service Scope

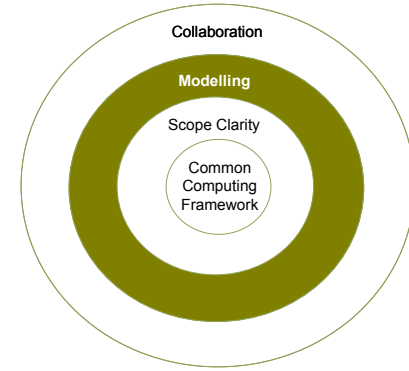


Business Context

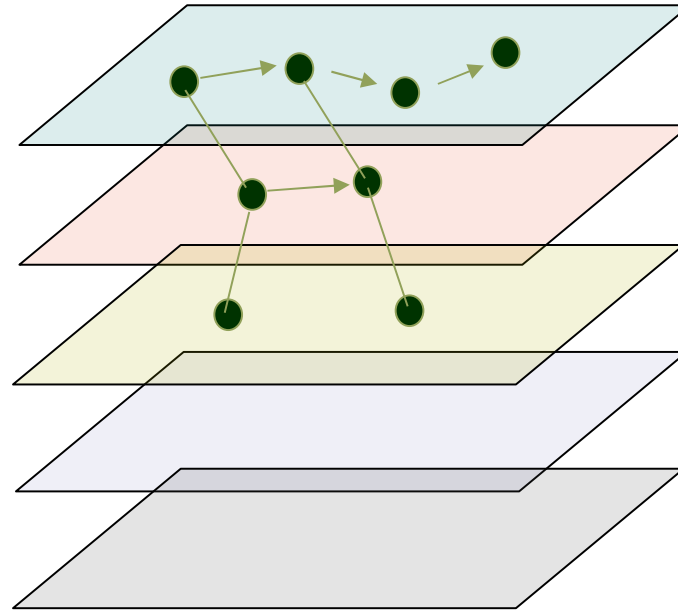


- **Service scope**
- **Service owner**
- **Value Proposition**
- **Critical Success Factors**
- **Offerings – eg reports/TRX Processing**
- **Service Value Chain**
- **Expectations of technology**
- **System Level agreements**
- **Volumes and growth projections**

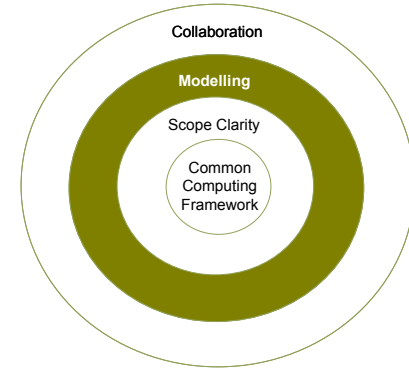
More “Explicit” Modelling Approach



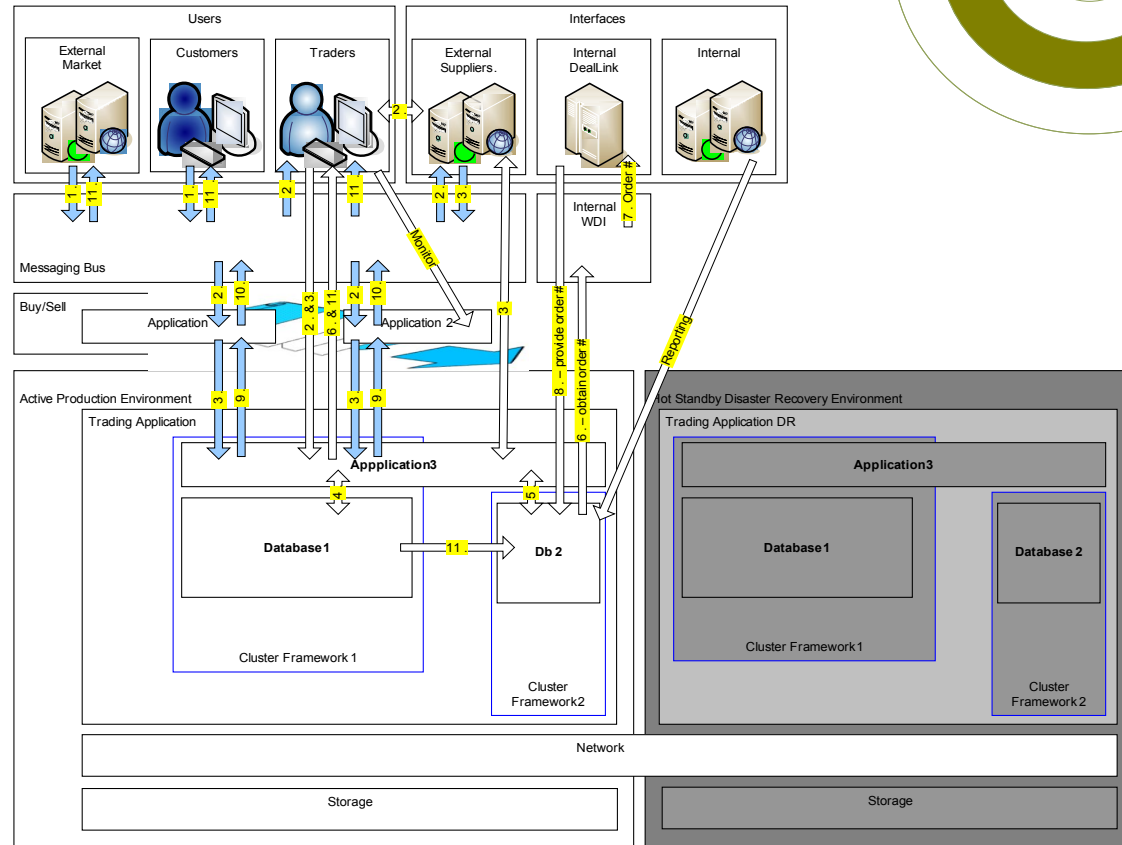
- A system is a combination of elements with processes – that is perhaps best described as a “virtual work flow environment”
- Users interact and initiate commands (inputs) which lead to processes and results (outputs)
- The system is a form of work flow with data being the raw material that is processed
- Therefore treat all computing elements as work flow components
- These diagrams should best be drawn as “what does what” pictures (WDWs)
- WDWs should be used to represent compute model processing across tiers
- Use cases drive WDWs



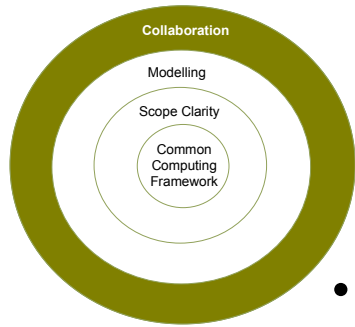
Example Application sequence overlaid on system infrastructure



- A WDW diagram will have a X reference table that explains in more detail what each of the steps are
- Compute Components in a WDW diagram will be X referencable in the relevant system blueprint architecture diagrams
- WDW diagrams will ensure main inputs/processes/outputs are well described
- WDW diagrams must be understandable by non technical personnel
- WDW diagrams can form the basis for simulation with all of the associated benefits of such analysis



This diagram shows users, functions and systems infrastructure in one picture



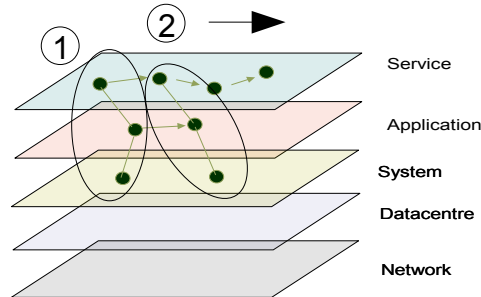
Collaboration

- It is critical that collaborative techniques are heavily emphasized and implemented at the outset of major projects/incidents
- Level setting is important – explicit communication and information sharing imperative in early stages
- Investment/effort/resources required to build collaborative culture more readily as this is the norm for complex systems.
- Use collaboration to help non technical users understand the compute model to facilitate decision making
- Deliberate “over emphasis” on face to face meetings early on in project. Con calls may worsen not improve results(?)
- Executives from different groups must show collaborative behavior too

Business and IT: Communicating more effectively



*Simple easy to understand
“what does what” modelling*



Business people understand
Processes and Workflows

Systems are work flow
processing engines

- Explain the computing model as a process model
- Engage business in the project
- Explicit explanation of cost drivers
- Minimize acronyms and “techno speak”
- Don't make too many assumptions
- Communicate often!

Next Steps

- Complete Interviews
- Develop more comprehensive approach to the challenges and issues
- Test approach!
- Find companies that wish to participate...
 - Tape incident calls and review use of collaboration tools
 - Review project charters and test for specificity
 - Participate in new projects and actively use new approaches

Commonly Cited Explanations for Project Failure

- Poor Project Assessment
 - weak business case, no ROI, magic bullet thinking
- Poor Project Planning
 - Poor estimation, weak planning, no risk assessment, poor requirements analysis
- Poor Project Management Processes
 - Poor monitoring, scope creep, lack of testing, escalating commitment, mythical man month
- Inattention to Vendor Relationships
 - Poor vendor selection, adversarial approach, no mechanisms for dispute resolution
- Implementation Challenges
 - No/poor change management plans, lack of user involvement, poor communications, failure to plan for use (not just implementation)
- Lack of Management Involvement and Support
 - No business champion, no access to resources, approval versus involvement