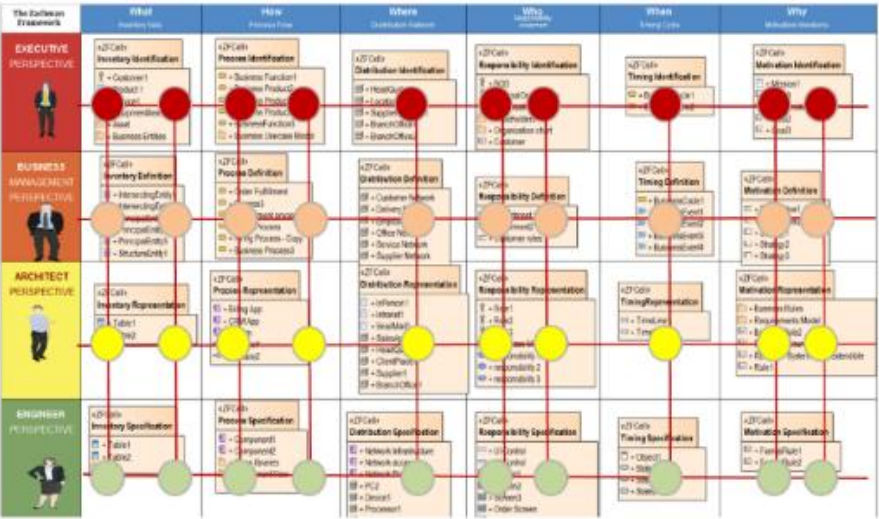


Architecture Solutions

Enterprise Anatomy



Process automation



Digital Transformation



Cloud Solutions



IoT Solution



New Disruptions



2017 IT Business Software – current challenges

- New systems becoming legacy faster..
- 'Around 9 out of 10' of key projects simply do not respond to change and complexity within 4-6 months of first release
- Meaning all your time and money spent in developing software using latest and hottest technologies are lost in a sea of unanswered conversations.
- Most of the cases, software development teams are using new buzzwords that promises results by IGNORING engineering steps
- There is growing desire of decision-makers to directly interact with IT workforce to innovate, and create disruption in their market place.
- IT team lacks the necessary skill to communicate and explain how technology can bring business benefits
 - IT team is proficient in explaining DB model, messaging infrastructure, hardware and software components
 - How to link “new asynchronous messaging model” with “increased customer satisfaction”
 - They are not able to explain how does use of new asynchronous messaging model can improve background processing → reduce manual controls → platform integration → Claim processing → Policy processing → Increased productivity → Increased customer satisfaction

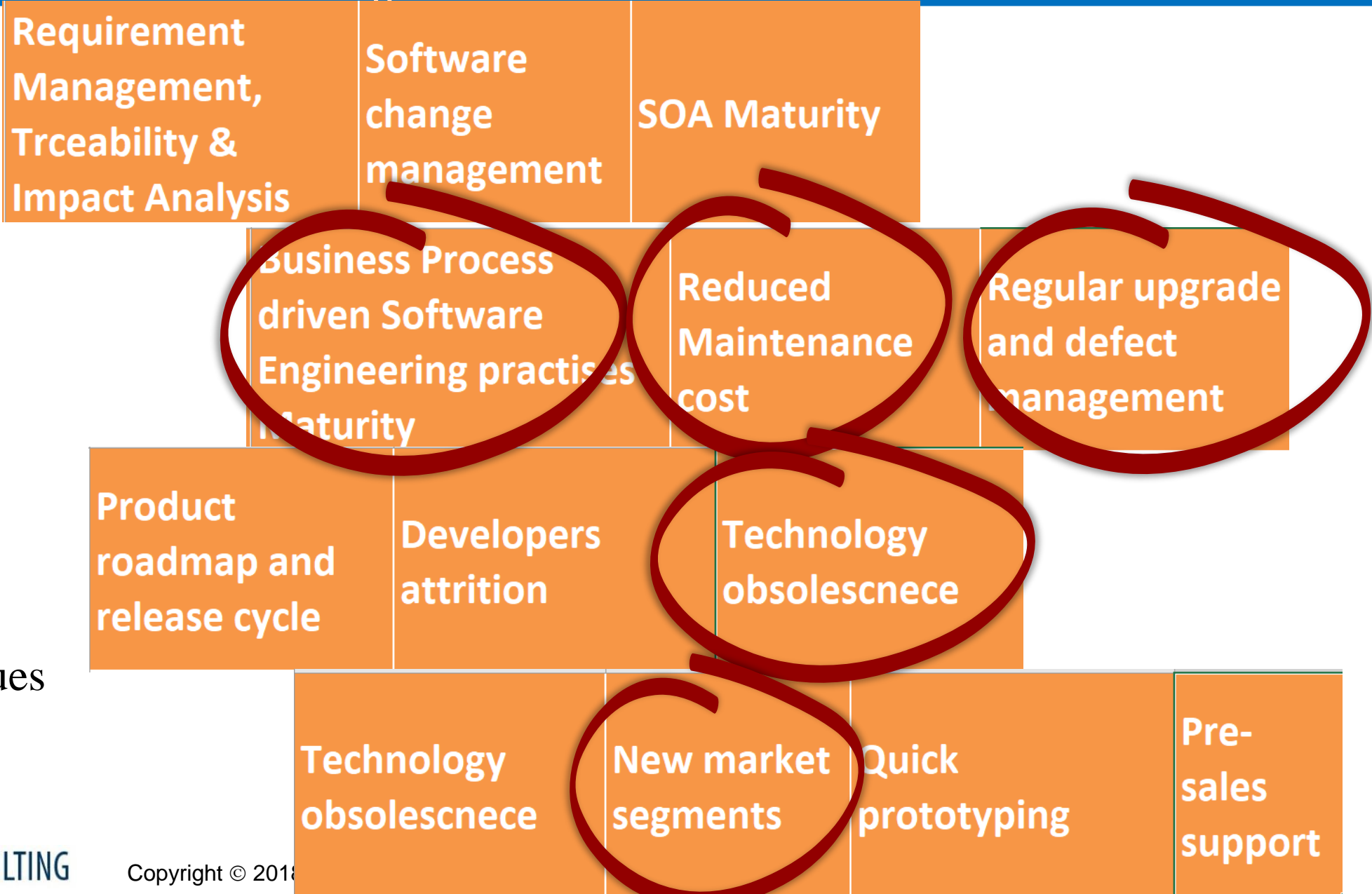


2017 IT Business Software – current challenges

- New systems becoming legacy faster..? Where is the problem?
- In 2017, after evaluating around 300 IT Projects around ICMG IT Architecture Methodology,
- It's interesting to know that
 - <10% of projects had business process models,
 - System requirements completeness is 40-50%,
 - Logical models (Functional, Data, UI, Network,, Time, Rules) is 10-20% coverage,
 - Technical (Specification) Models (Functional, Data, UI, Network, Time, Rules), 10-20% coverage
 - Traceability, impact analysis, are missing.



Companies are still struggling to use Architecture to address one or more of the following issues



Major issues



Enterprise and IT strategies of BFSI Organizations

- The “rationalize, standardize and simplify” IT strategy forms basis of several Banks right now.
- Creating digital facilities such as Interactive games facility, fun financial literacy, interactive financial tools e are in thing.
- There is a need for centralized solutions for the components around Master Data, Financial Data, integrated with up-stream and downstream systems across Finance, Regulatory, Risk, Data Integration, Ops & Fund Accounting, Financial Control, Corporate Finance
- Growing interest to reach out to new customers
- Significantly shortens the time-to-market to add new business



In 2017, we looked at the IT Architecture of some of the projects of leading BFSI institutions

PT. Bank DBS Indonesia

Maybank, Malaysia

Credit Suisse USA

Nationwide, USA

Nedbank, South Africa

ING Bank Belgium

GE Capital , India

TAL Australia

ANZ Indonesia

S&P Capital IQ, USA

Credit Suisse
Switzerland

ICICI Bank Ltd, India

Australia,
APAC

USA

EMEA

India



BFSI Enterprises and their IT initiatives that is making a difference...

- Infrastructure Rejuvenation
- Mobile Banking
- Comprehensive Capital Analysis & Review (CCAR) requirements
- Debt processing function
 - Virtual Database Platform Initiative
 - SOA Implementation
 - Centralized repository
 - CAPS - Collection Activities Processing System
- Digital Interactive Facilities
- Private Banking (PB) Risk systems
- Risk Design Authority (Risk DA)
- Application Simplification
 - moves from 220 to 60 core systems



BFSI Enterprises and their business goals that is making a difference...

Support the future growth of banking business

Orientation to digitize the banking service for customers.

Deliver Customer Excellence

Promotion based on merchant category

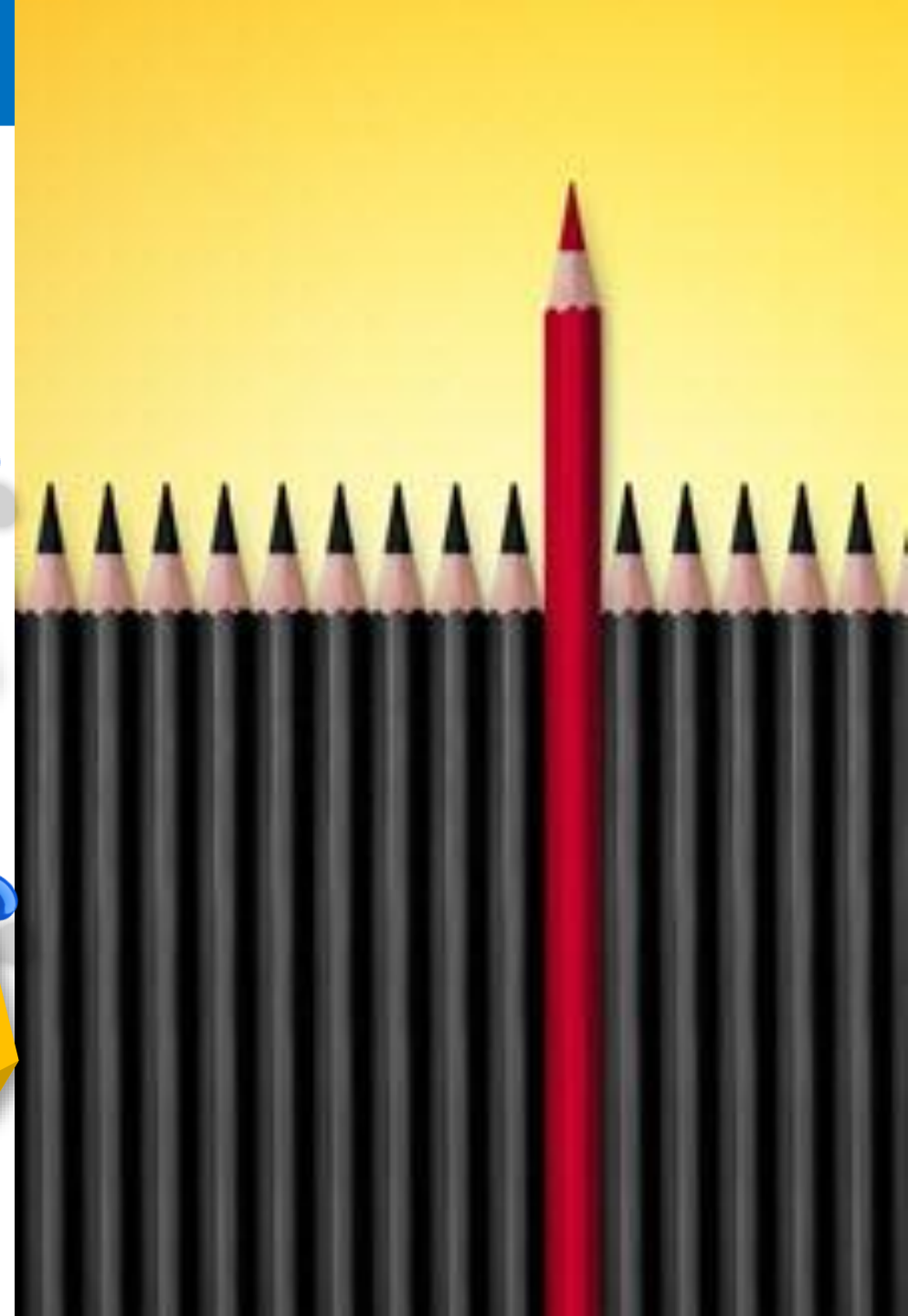
Real time interbank fund transfer and some unique credit card features

Integrating Private Banking & Wealth Management services

Reduce the amount of time it takes to gather information, understand, strategize, & create technology changes.

Reduce the amount of time and domain experts required for impact assessment

Reduction in project costs, better insight to scope of proposed changes



BFSI Enterprises and their business goals that is making a difference...

New functionality can be delivered quickly and with fewer resources

Brought down maintenance costs

Significant improvement in productivity

Bank able to respond with agility to market pressure and client demand

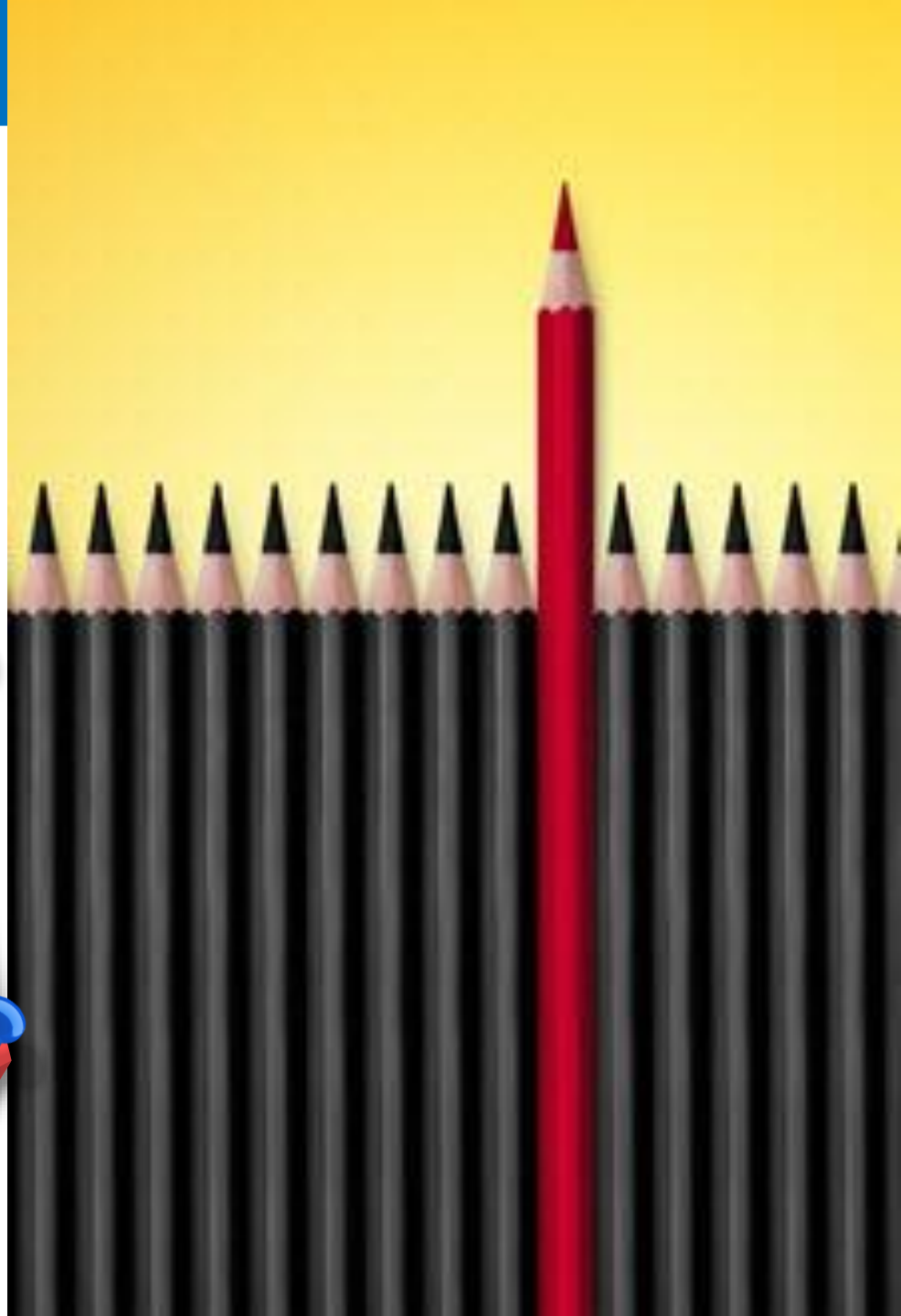
Increase in Business volumes

Improving banking penetration in rural area

Better debt servicing touch points

Increased operational efficiency

Best product to be offered to customer with the high accuracy level



Multiple projects, multiple banks

Infrastructure Rejuvenation

Project 1

Mobile Banking

Project 2

Comprehensive Capital Analysis & (CCAR) requirements

Project 3

Debt processing function

Project 4

Digital Interactive Facilities

Project 5

Private Banking (PB) Risk systems

Project 6

Risk Design Authority (Risk D

Project 7

Application Simplification
moves from 220 to 60 core systems

Project 8

Virtual Database Platform Initiative

Project 9

: SOA Implementation

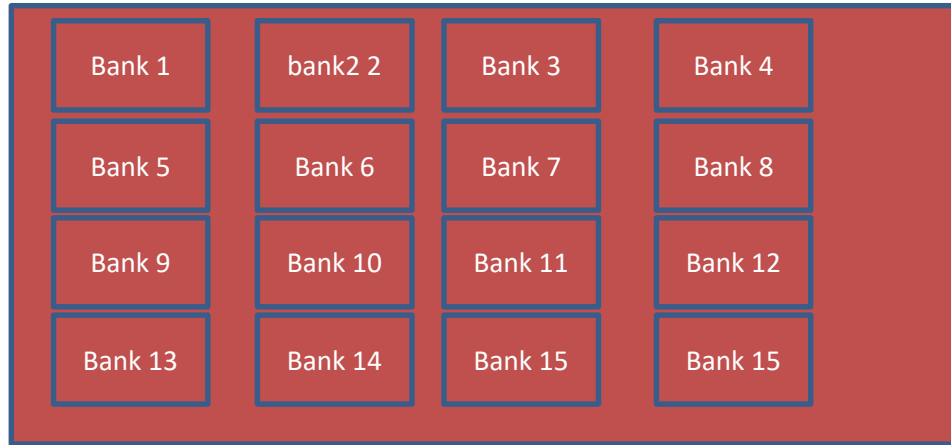
Project 10

a centralized repository

Project 11

CAPS - Collection Activities Processing System

Project 12



Imagine all the projects for a single bank,
(parallel projects, often projects are done in isolation)

Infrastructure Rejuvenation

Project 1

Mobile Banking

Project 2

Comprehensive Capital Analysis &
(CCAR) requirements

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Debt processing function

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: SOA Implementation

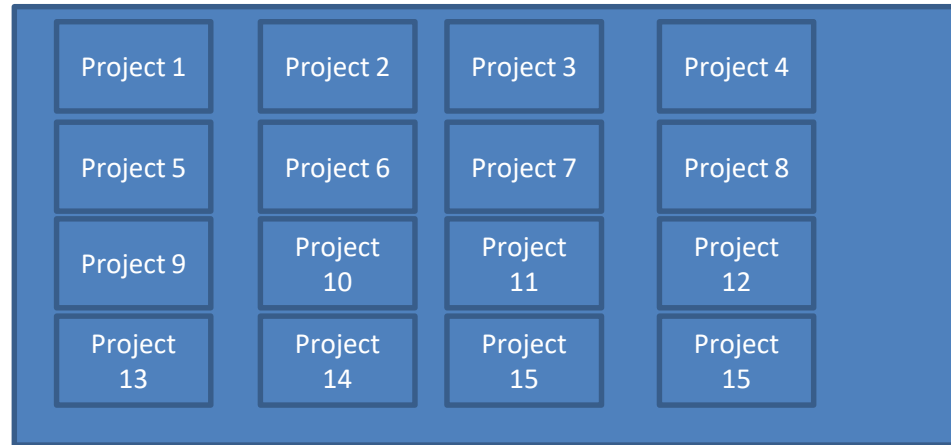
Project
10

a centralized repository

Project
11

CAPS - Collection Activities Processing System

Project
12



Imagine all the issues for a single bank, the solution is multiple projects (parallel projects, often projects are done in isolation)

Infrastructure Rejuvenation

Project 1

Mobile Banking

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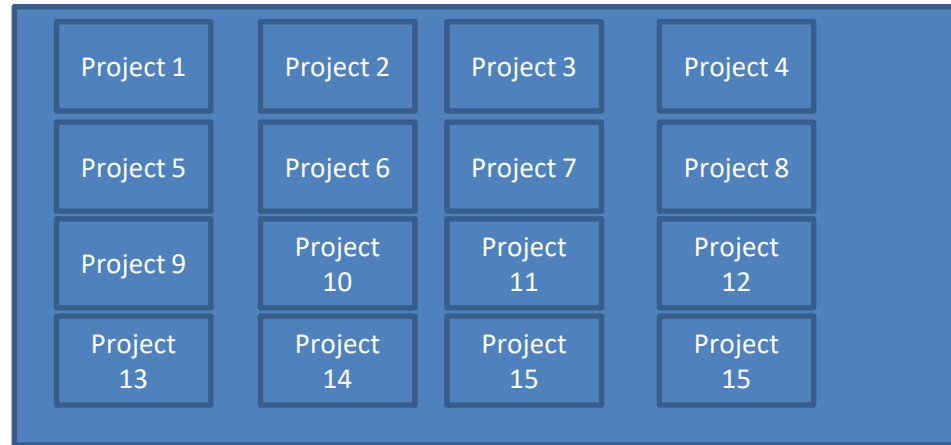
Project 10

a centralized repository

Project 11

CAPS - Collection Activities Processing System

Project 12



Assumption : absence of a single, common IT anatomy or Enterprise Anatomy

Old
understanding

Assumption : absence of a
common IT anatomy or
Enterprise Anatomy

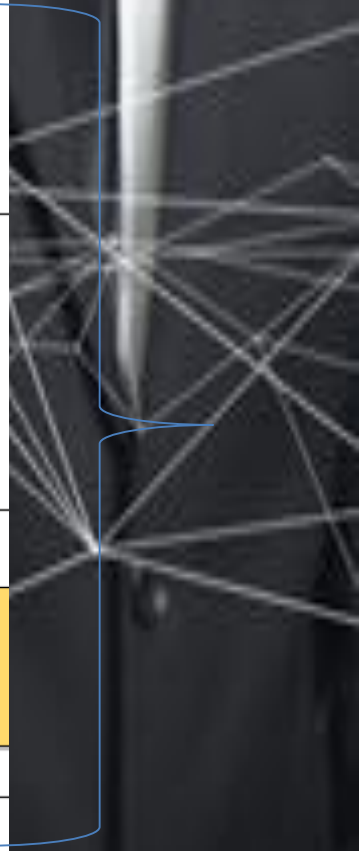
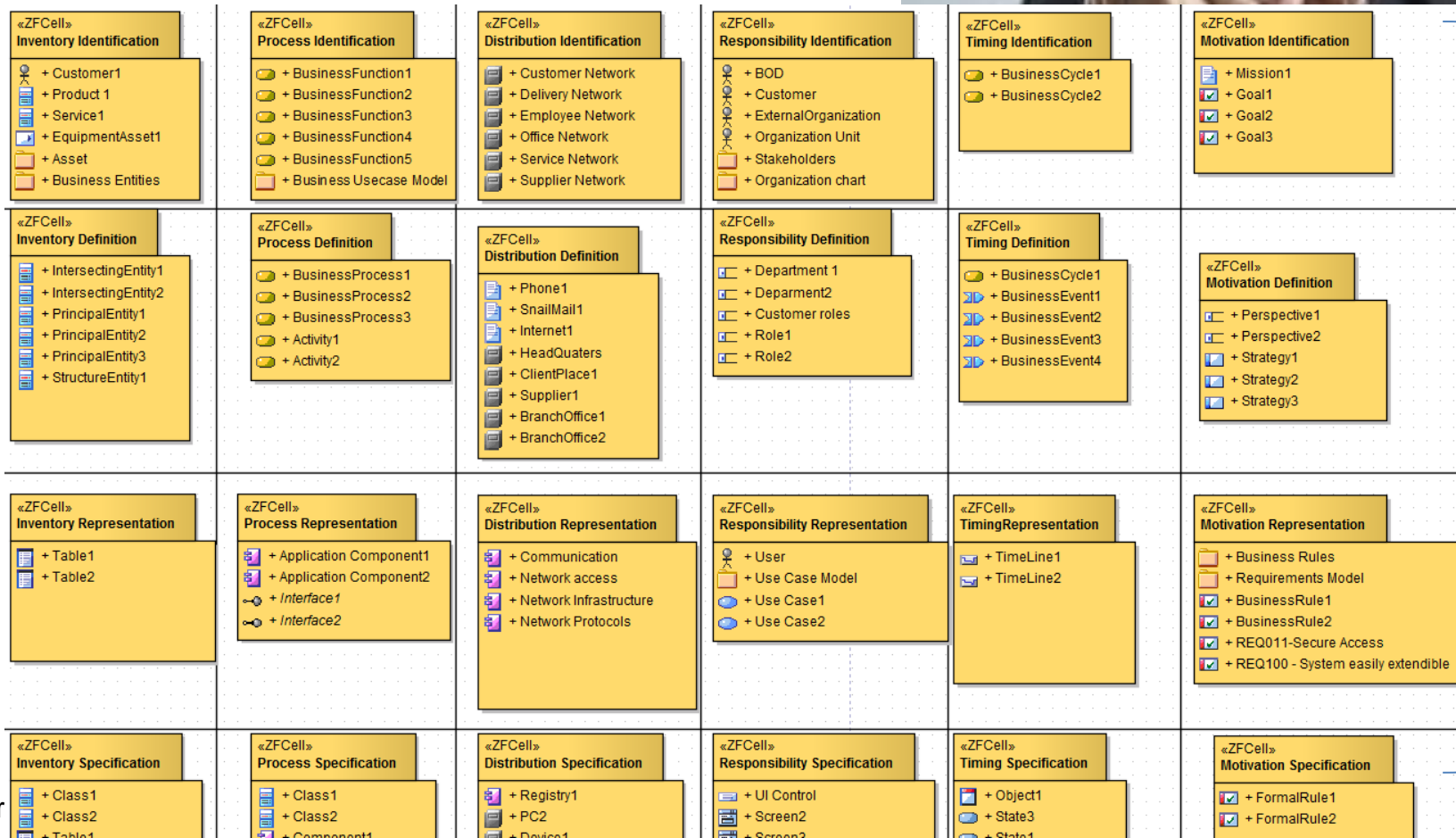
NEW
understanding

Reality : presence of a
common IT anatomy,
Enterprise Anatomy



Reality : presence of a common IT anatomy, Enterprise Anatomy

NEW understanding



ICMG Enterprise Anatomy – a definite way to address multiple solutions

Infrastructure Rejuvenation

Mobile Banking

Comprehensive Capital Analysis & Review (CCAR) requirements

Debt processing function

Digital Interactive Facilities

Private Banking (PB) Risk systems

Risk Design Authority

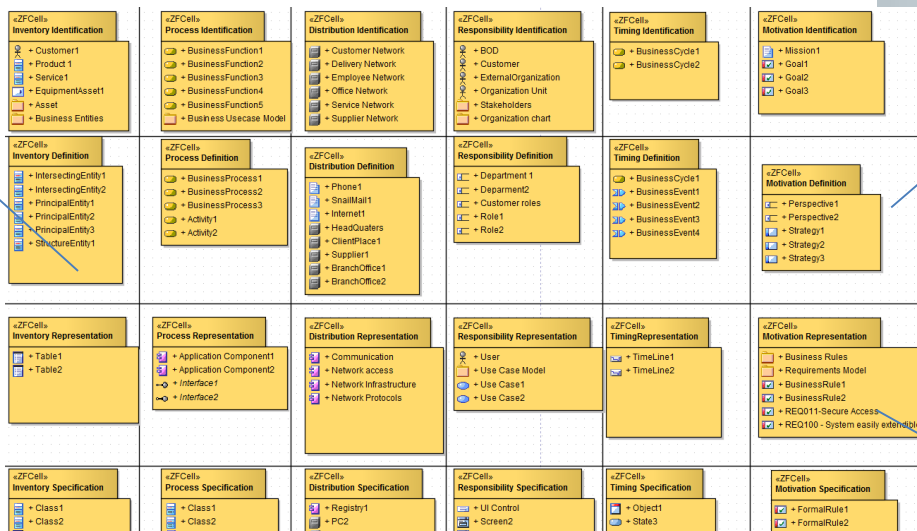
Application Simplification
moves from 220 to 60 core systems

Virtual Database Platform Initiative

: SOA Implementation

a centralized repository

Collection Activities Processing System



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- Increased operational efficiency
- Best product to be offered to customer with the high accuracy level

How it works?

Anatomy Driven Solution



Case I – Review the architecture of SOA Implementation

Current Architecture Focus

: SOA Implementation



Architecture
Model
(Diagrams)



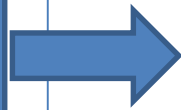
Case I – Review the architecture of SOA Implementation : sample artifacts, diagrams

Current Architecture Focus

: SOA Implementation



Architecture
Models
(Diagrams)



System requirements
Some use cases
Process models,
Data models,
UI models,
Component model
Service descriptions
Code implementation

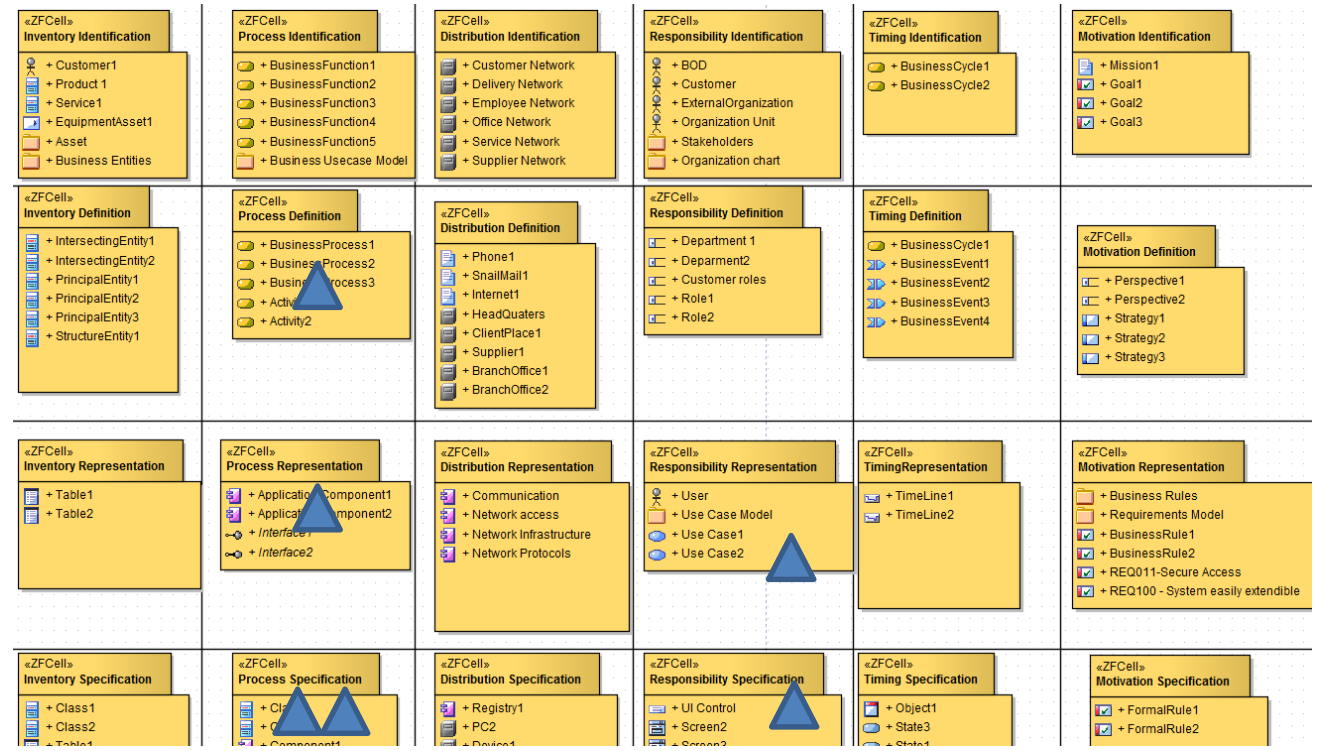


Current models

System requirements
 Some use cases
 Process models,
 Data models,
 UI models,
 Component model
 Service descriptions
 Code implementation

★ Only a limited set of models are created, very small set of anatomy model

Anatomy models



▲ Models which are typically created in a project

Case I – SOA Implementation : Transformation to Enterprise Anatomy Model

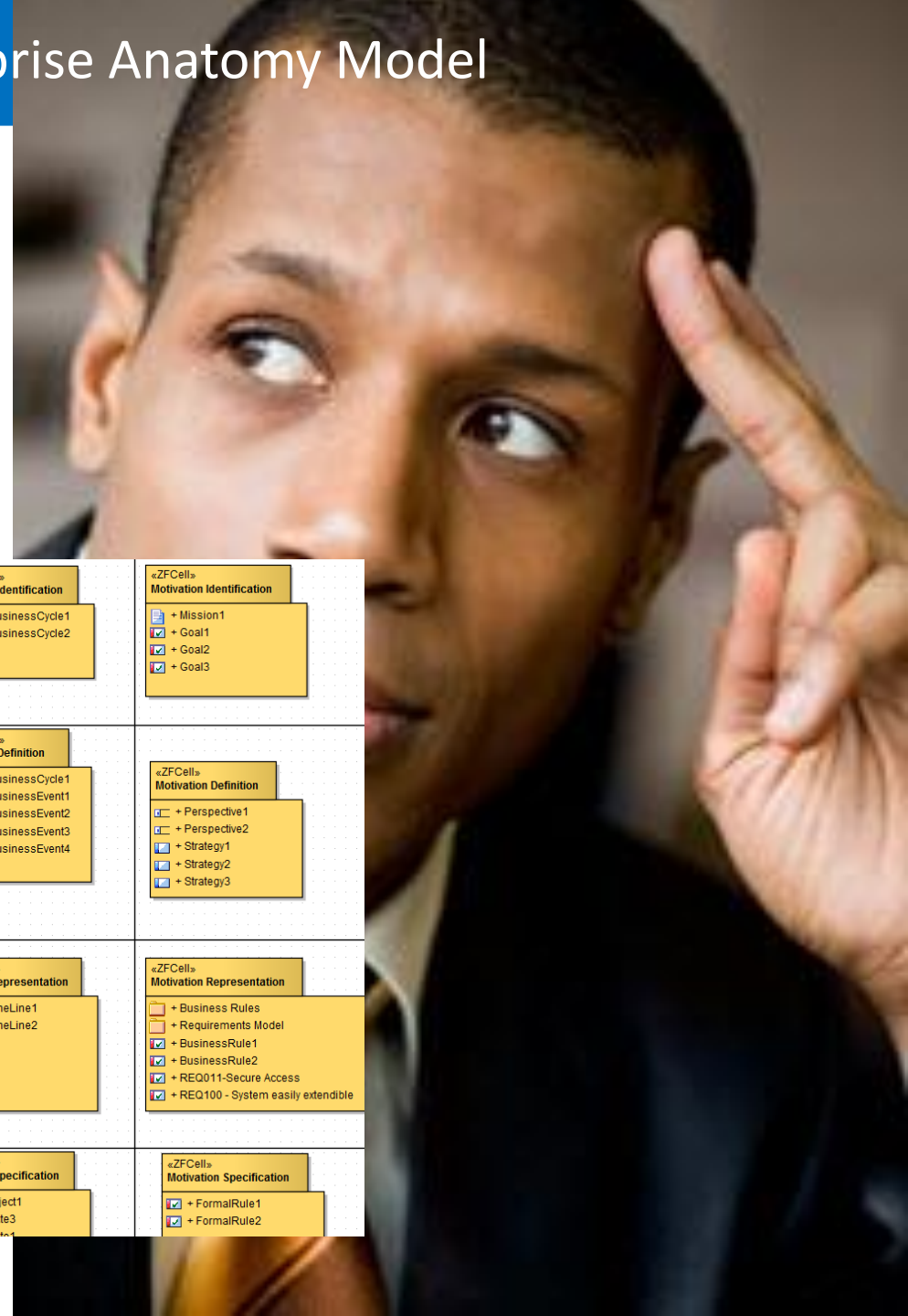
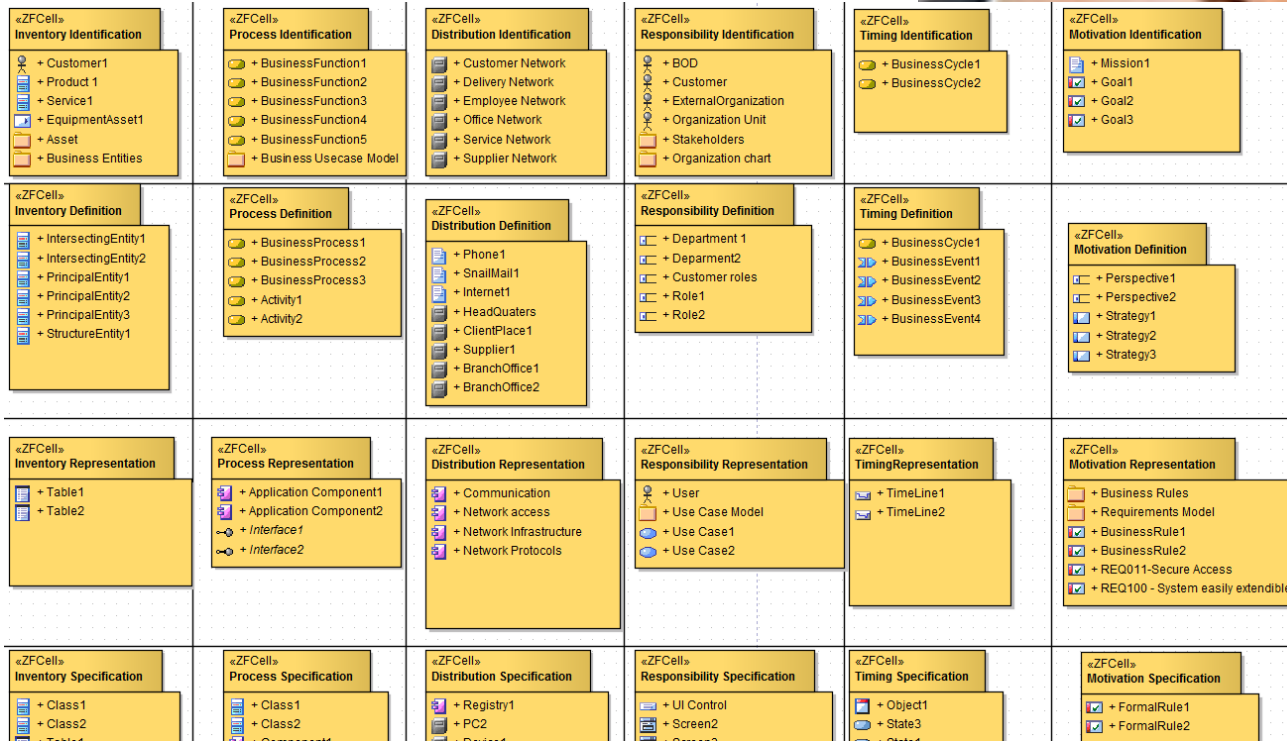
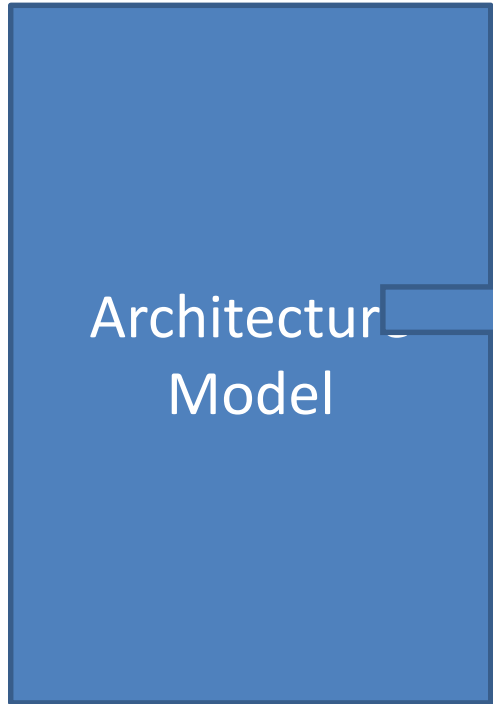
Current Architecture Focus

: SOA Implementation



New Focus : Enterprise Anatomy Driven Solution

: SOA Implementation



New Architecture Focus

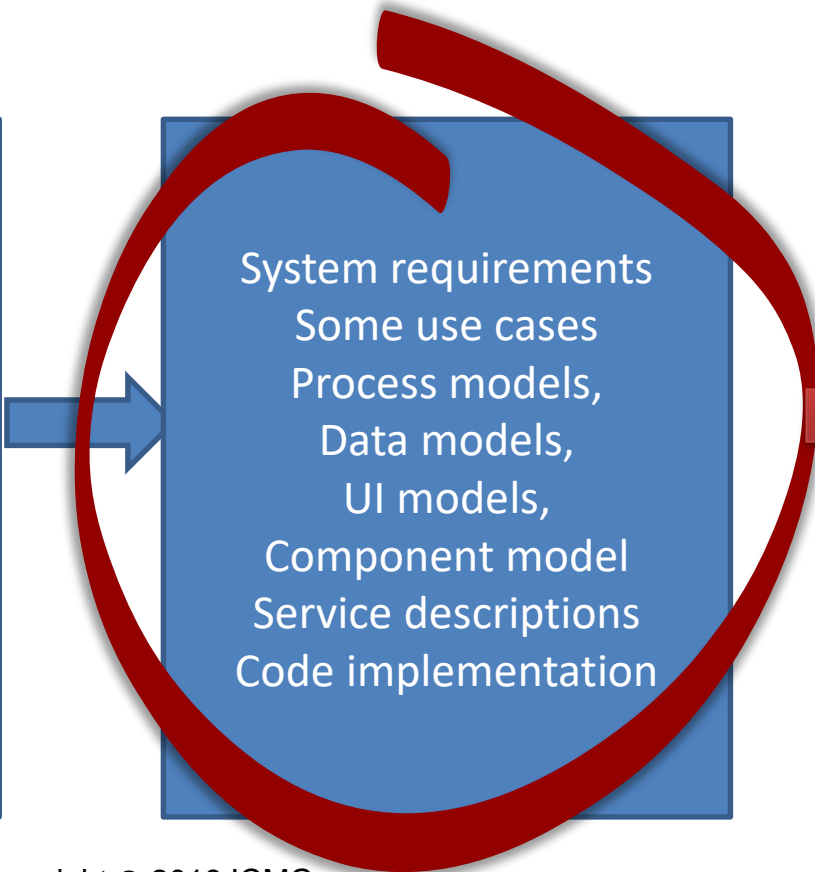
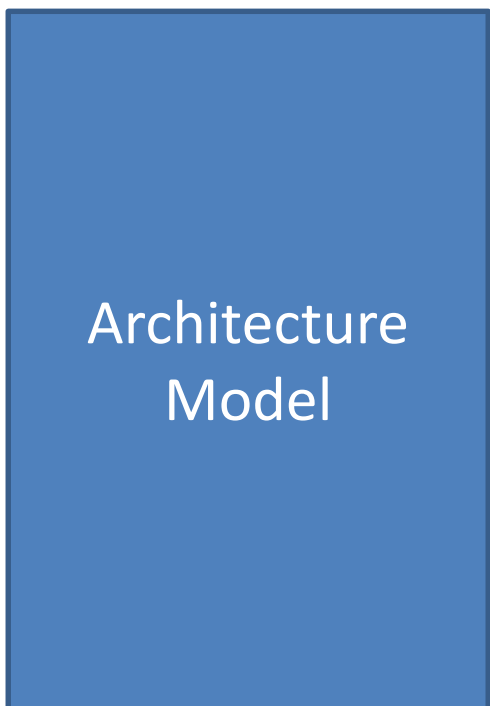
Elements based on variables and perspective

The Zachman Framework	DATA What (Things)	FUNCTION How (Process)	NETWORK Where (Location)	PEOPLE Who (People)	TIME When (Time)	MOTIVATION Why (Motivation)
SCOPE (Contextual) Planner	«ZFCell» Inventory Identification <ul style="list-style-type: none"> + Customer1 + Product 1 + Service1 + EquipmentAsset1 + Asset + Business Entities <i>(from Executive Perspective)</i>	«ZFCell» Process Identification <ul style="list-style-type: none"> + Business Product1 + Business Product2 + Business Product3 + Business Product4 + Business Function5 + Business Usecase Model <i>(from Executive Perspective)</i>	«ZFCell» Distribution Identification <ul style="list-style-type: none"> + HeadQuarters + Location + SupplierLocation1 + BranchOffice1 + BranchOffice2 <i>(from Executive Perspective)</i>	«ZFCell» Responsibility Identification <ul style="list-style-type: none"> + BOD + ExternalOrganization + Organization Unit + Stakeholders + Organization chart + Customer <i>(from Executive Perspective)</i>	«ZFCell» Timing Identification <ul style="list-style-type: none"> + BusinessCycle1 + BusinessCycle2 <i>(from Executive Perspective)</i>	«ZFCell» Motivation Identification <ul style="list-style-type: none"> + Mission1 + Goal1 + Goal4 + Goal2 + Goal3 <i>(from Executive Perspective)</i>
BUSINESS MODEL (Conceptual) Owner	«ZFCell» Inventory Definition <ul style="list-style-type: none"> + IntersectingEntity1 + IntersectingEntity2 + PrincipalEntity1 + PrincipalEntity2 + PrincipalEntity3 + StructureEntity1 	«ZFCell» Process Definition <ul style="list-style-type: none"> + Activity3 + Activity4 + Order Fulfillment + Process3 + Recruitment process + Hiring Process + Hiring Process - Copy + Business Process3 + Activity1 	«ZFCell» Distribution Definition <ul style="list-style-type: none"> + Customer Network + Delivery Network + Employee Network + Office Network + Service Network + Supplier Network 	«ZFCell» Responsibility Definition <ul style="list-style-type: none"> + Department 1 + Department2 + Customer roles <i>(from Business Management Perspective)</i>	«ZFCell» Timing Definition <ul style="list-style-type: none"> + BusinessCycle1 + BusinessEvent1 + BusinessEvent2 + BusinessEvent3 + BusinessEvent4 <i>(from Business Management Perspective)</i>	«ZFCell» Motivation Definition <ul style="list-style-type: none"> + Perspective1 + Perspective2 + Strategy1 + Strategy2 + Strategy3 <i>(from Business Management Perspective)</i>
SYSTEM MODEL (Logical) Designer	<i>(from Business Management Perspective)</i> «ZFCell» Inventory Representation <ul style="list-style-type: none"> + Table1 + Table2 <i>(from System Perspective)</i>	<i>(from Business Management Perspective)</i> «ZFCell» Process Representation <ul style="list-style-type: none"> + App + Billing App + CRM App + Interface1 + Interface2 <i>(from System Perspective)</i>	<i>(from Business Management Perspective)</i> «ZFCell» Distribution Representation <ul style="list-style-type: none"> + Elements + Network Elements + Application Servers + HTTP Servers + LAN Components + Load Balancers + Mail Server + Network Model 	«ZFCell» Responsibility Representation <ul style="list-style-type: none"> + Role1 + Role2 + Role3 + Use Case Model + responsibility 1 + responsibility 2 + responsibility 3 <i>(from System Perspective)</i>	«ZFCell» TimingRepresentation <ul style="list-style-type: none"> + TimeLine1 + TimeLine2 <i>(from System Perspective)</i>	«ZFCell» Motivation Representation <ul style="list-style-type: none"> + Business Rules + Requirements Model + BusinessRule2 + REQ011-Secure Access + REQ100 - System easily extendible + Rule1 <i>(from System Perspective)</i>
TECHNOLOGY MODEL (Physical) Builder	«ZFCell» Inventory Specification <ul style="list-style-type: none"> + Table1 + Table2 + DDL <i>(from Technology Perspective)</i>	«ZFCell» Process Specification <ul style="list-style-type: none"> + Component1 + Component2 + Class libraries + Component View <i>(from Technology Perspective)</i>	«ZFCell» Distribution Specification <ul style="list-style-type: none"> + Network Infrastructure + Network access + Network Protocols + PC2 + Device1 + Processor1 	«ZFCell» Responsibility Specification <ul style="list-style-type: none"> + UI Control + UI Control + Screen1 + Screen2 + Screen3 + Order Screen 	«ZFCell» Timing Specification <ul style="list-style-type: none"> + Object1 + State3 + State1 + State2 <i>(from Technology Perspective)</i>	«ZFCell» Motivation Specification <ul style="list-style-type: none"> + FormalRule1 + FormalRule2 <i>(from Technology Perspective)</i>

Case I – SOA Implementation : How to migrate and transform?

Current Architecture Focus

: SOA Implementation

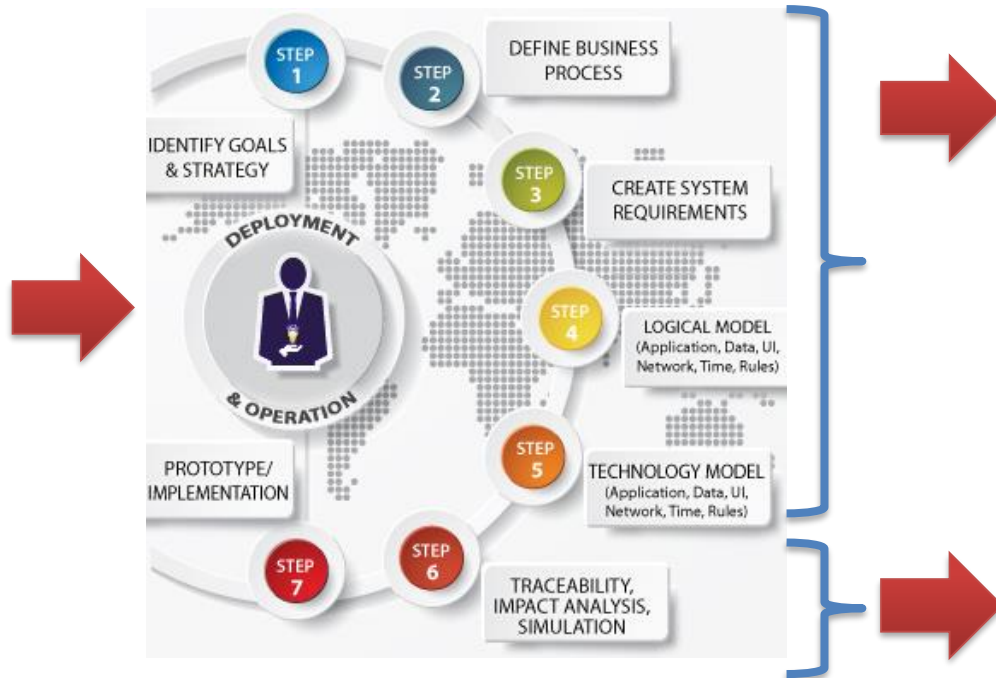
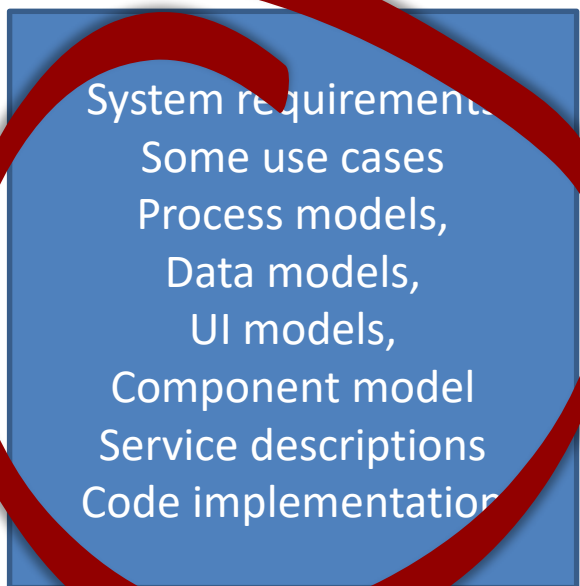


New Architecture Focus

The Zachman Framework	DATA What (Things)	FUNCTION How (Process)	NETWORK Where (Location)	PEOPLE Who (People)	TIME When (Time)	MOTIVATION Why (Motivation)
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We apply anatomy driven methodology to create elements and composites

Current Architecture Models



New Architecture Models

The Zachman Framework	What Inventory Data	How Process Flow	Where Distribution Network	Who Responsible Agent	When Temporal Logic	Why Motivational Rationale
EXECUTIVE PERSPECTIVE	<ul style="list-style-type: none"> 42FCds Inventory Identification 42FCds = Customer 42FCds = Product 1 42FCds = Service1 42FCds = Responsibility1 42FCds = Asset 42FCds = Business Entity 	<ul style="list-style-type: none"> 42FCds Process Identification 42FCds = Address Fulfillment 42FCds = Business Product2 42FCds = Business Product3 42FCds = Business Product 42FCds = Address-warehouse 42FCds = Business Location Model 	<ul style="list-style-type: none"> 42FCds Distribution Identification 42FCds = HeadQuarters 42FCds = Location 42FCds = SupportLocation1 42FCds = BranchOffice1 42FCds = BranchOffice2 	<ul style="list-style-type: none"> 42FCds Responsibility Identification 42FCds = CEO 42FCds = BusinessOrganization 42FCds = OrganizationUnit 42FCds = HRperson 42FCds = OrganizationChart 42FCds = Customer 	<ul style="list-style-type: none"> 42FCds Timing Identification 42FCds = BusinessCycle1 42FCds = BusinessCycle2 	<ul style="list-style-type: none"> 42FCds Motivation Identification 42FCds = Mission 42FCds = Goals 42FCds = New product dev 42FCds = Cost 42FCds = Goals
BUSINESS MANAGEMENT PERSPECTIVE	<ul style="list-style-type: none"> 42FCds Inventory Definition 42FCds = InventoryEntity 42FCds = InventoryCategory 42FCds = InventoryItem1 42FCds = PrincipalSKU 42FCds = PrincipalSKU 42FCds = StructureData1 	<ul style="list-style-type: none"> 42FCds Process Definition 42FCds = Order Fulfillment 42FCds = Approval 42FCds = RecruitmentProcess 42FCds = Hiring Process 42FCds = Hiring Process - Copy 42FCds = Business Process 	<ul style="list-style-type: none"> 42FCds Distribution Definition 42FCds = Customer Network 42FCds = Delivery Network 42FCds = Employee Network 42FCds = Office Network 42FCds = Supplier Network 42FCds = Supplier Network 	<ul style="list-style-type: none"> 42FCds Responsibility Definition 42FCds = Department1 42FCds = Department2 42FCds = Customer roles 	<ul style="list-style-type: none"> 42FCds Timing Definition 42FCds = BusinessCycle1 42FCds = BusinessCycle2 42FCds = BusinessEvent 42FCds = BusinessEvent 	<ul style="list-style-type: none"> 42FCds Motivation Definition 42FCds = Purpose1 42FCds = Requirements Model 42FCds = Strategy1 42FCds = Strategy2 42FCds = Strategy3
ARCHITECT PERSPECTIVE	<ul style="list-style-type: none"> 42FCds Inventory Representation 42FCds = Table1 42FCds = Table2 	<ul style="list-style-type: none"> 42FCds Process Representation 42FCds = Hiring App 42FCds = CRM App 42FCds = System 42FCds = Warehouse 42FCds = Support1 42FCds = Warehouse2 	<ul style="list-style-type: none"> 42FCds Distribution Representation 42FCds = Internet 42FCds = Intranet 42FCds = BranchMail 42FCds = Office 42FCds = HeadQuarters 42FCds = ClientPlace1 42FCds = Support1 42FCds = BranchOffice1 	<ul style="list-style-type: none"> 42FCds Responsibility Representation 42FCds = Role1 42FCds = Role2 42FCds = Role3 42FCds = HR Case Model 42FCds = responsibility 1 42FCds = responsibility 2 42FCds = responsibility 3 	<ul style="list-style-type: none"> 42FCds Timing Representation 42FCds = Involvement1 42FCds = Involvement2 	<ul style="list-style-type: none"> 42FCds Motivation Representation 42FCds = Business Rules 42FCds = Requirements Model 42FCds = BusinessRule2 42FCds = HR201 - Secure Access 42FCds = HR201 - System entry procedure 42FCds = Rule1
ENGINEER PERSPECTIVE	<ul style="list-style-type: none"> 42FCds Inventory Specification 42FCds = Table1 42FCds = Table2 42FCds = XML 	<ul style="list-style-type: none"> 42FCds Process Specification 42FCds = Component1 42FCds = Component2 42FCds = Class library 42FCds = ComponentView 	<ul style="list-style-type: none"> 42FCds Distribution Specification 42FCds = Network Infrastructure 42FCds = Network Access 42FCds = Network Process 42FCds = PC2 42FCds = Server2 42FCds = Server1 42FCds = Process1 	<ul style="list-style-type: none"> 42FCds Responsibility Specification 42FCds = U1 Control 42FCds = U2 Control 42FCds = Network 42FCds = Server1 42FCds = Server2 42FCds = Server3 42FCds = Order Screen 	<ul style="list-style-type: none"> 42FCds Timing Specification 42FCds = Object1 42FCds = Object2 42FCds = SSB1 42FCds = SSB2 42FCds = Data2 	<ul style="list-style-type: none"> 42FCds Motivation Specification 42FCds = FormRule1 42FCds = FormRule2