

Developing and managing dynamic business collaborations

A rule based approach for modeling and
verifying business collaboration systems

Bart Orriëns
Department of Information Management
Tilburg University



... **And everything after**

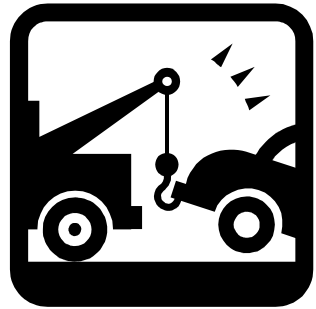
- Introducing a new order of things
- Standing on the shoulders of giants
- Realizing that context = KEY
- Creating models that are useful
- Obeying the rules and only the rules
- Arranging everything in the right place
- Performing magic
- Reasoning towards conclusions
- Predicting the future

The slide features a decorative arrangement of six circles. Three circles are positioned in a horizontal row at the top, and three are in a horizontal row at the bottom. The top row consists of one white circle with a light purple outline on the left, and two solid light purple circles on the right. The bottom row consists of two solid light purple circles on the left and one white circle with a light purple outline on the right. The text is centered horizontally and partially overlaid by these circles.

Nathaniel Borenstein

The most likely way for the world to be destroyed, most experts agree, is by accident.

That's where we come in, we're computer professionals. We cause accidents;



Policyholder

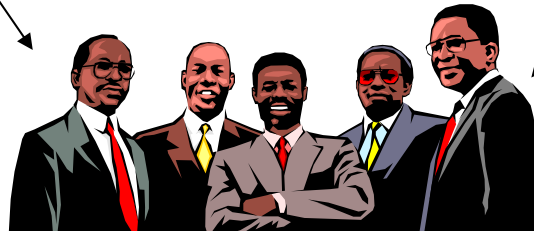
Insurance Claim (1)

Assign Garage (2)

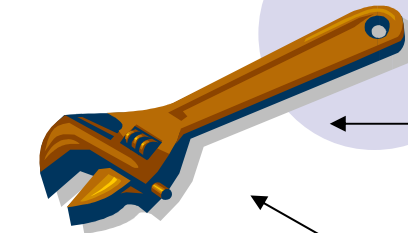


Europ Assist

Claim Notification (3)



AGFIL



Garages

Estimate repair cost (5)

Inspect Car (7)



Assessors

Assign Assessor (6)



Lee C.S

Claim Report (4)

Repair Invoice



So what do we need to know?

- What is the setting in which business collaborations take place?
- How do we describe this setting?
- What is the role of change in all this?
- Are we doing things in the right way?

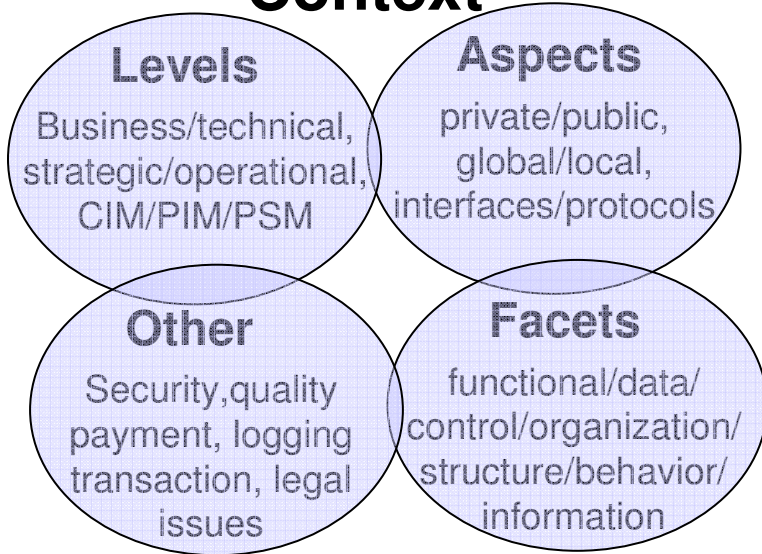
The image features five light purple circles arranged in two rows. The top row contains three circles, and the bottom row contains two circles. The text is overlaid on these circles.

Albert Einstein

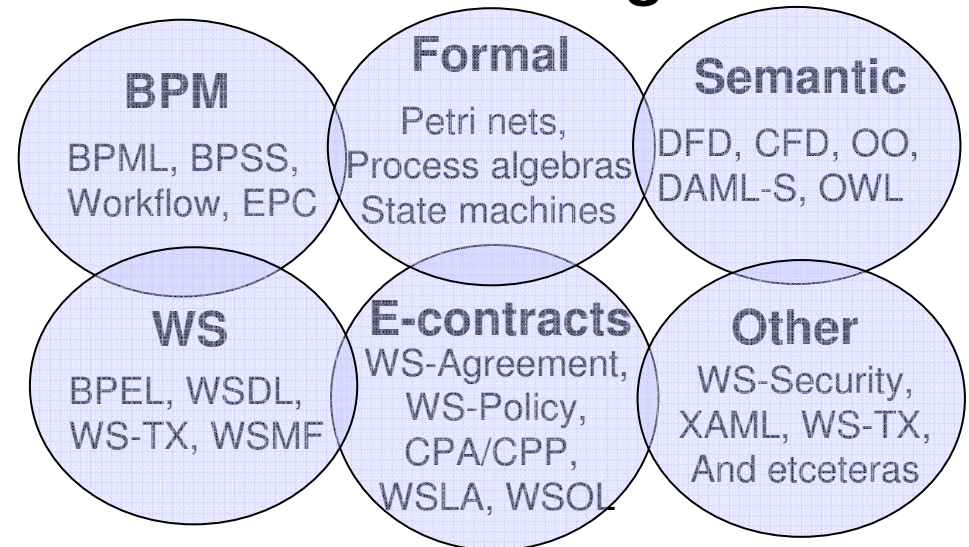
The secret of creativity is knowing how to
hide your sources;

It has all been done before

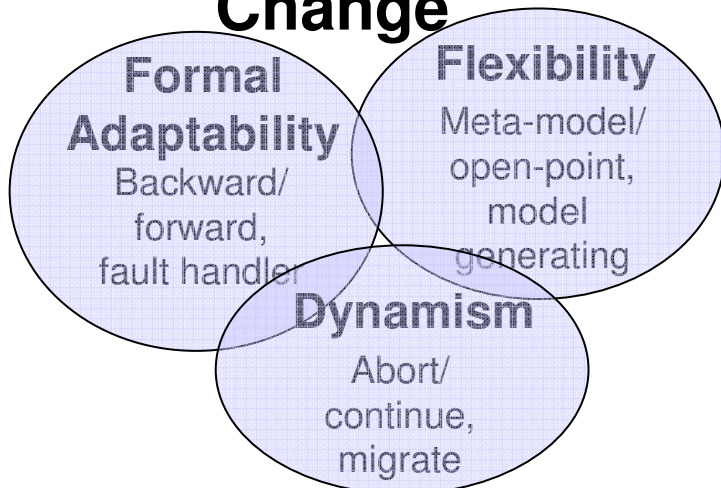
Context



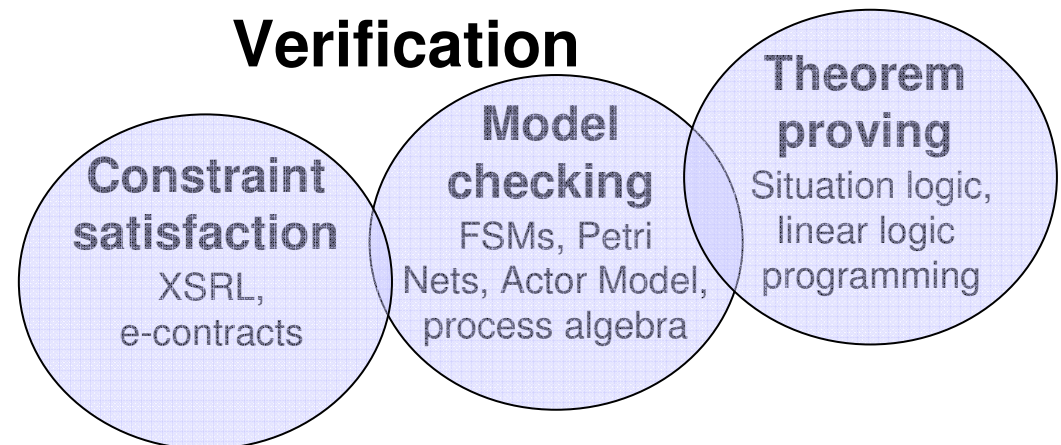
Modeling



Change



Verification





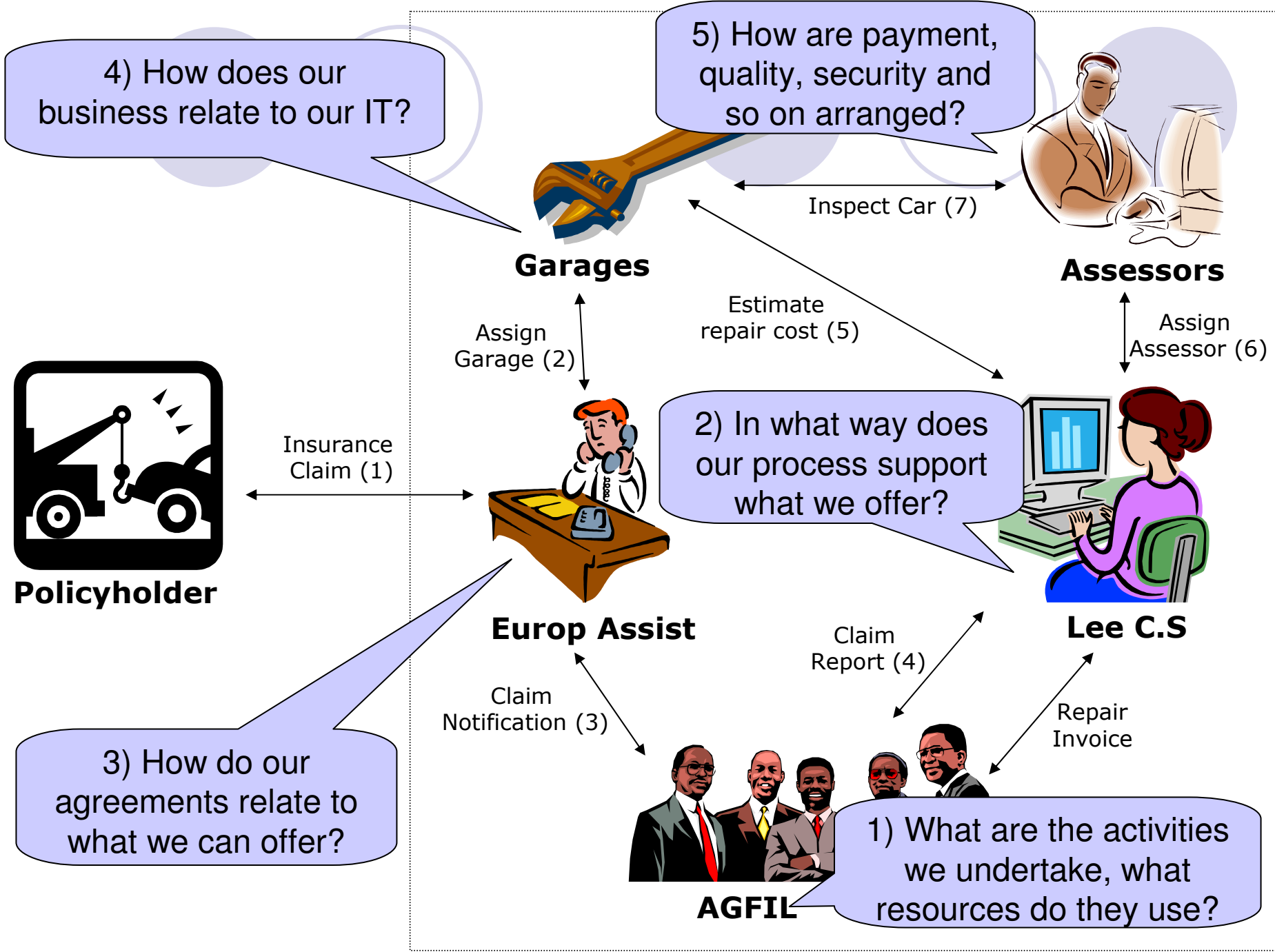
But then maybe not quite

- No overall picture of context
- No coherent modeling approach
- No generic change mechanism
- No generic verification solution



Christopher Alexander

We are searching for some kind of harmony
between two intangibles: a form
which we have not yet designed and a
context which we cannot properly describe;



4) How does our business relate to our IT?

5) How are payment, quality, security and so on arranged?

Inspect Car (7)

Garages

Assessors

Assign Garage (2)

Estimate repair cost (5)

Assign Assessor (6)



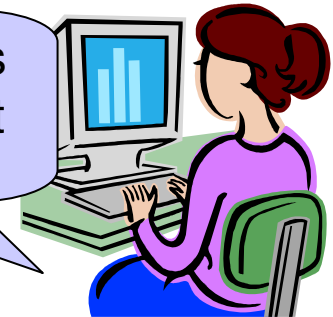
Policyholder

Insurance Claim (1)

2) In what way does our process support what we offer?



Europ Assist



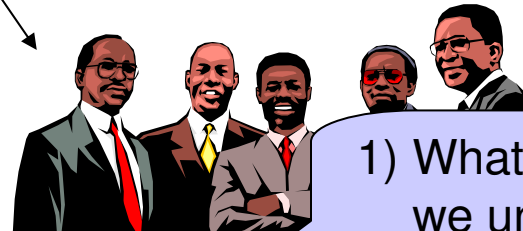
Lee C.S

Claim Report (4)

Claim Notification (3)

Repair Invoice

3) How do our agreements relate to what we can offer?



AGFIL

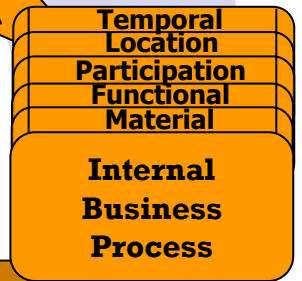
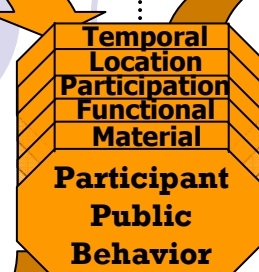
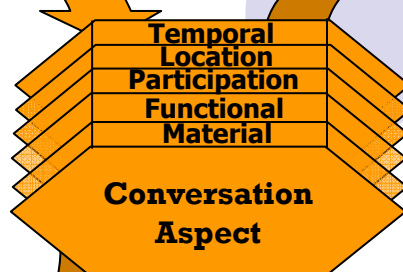
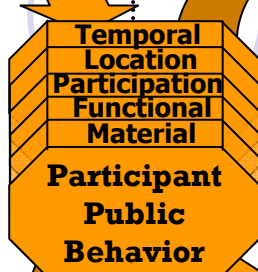
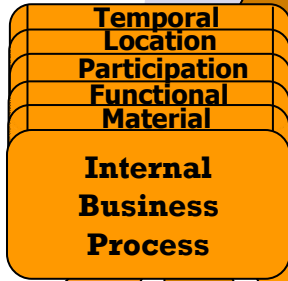
1) What are the activities we undertake, what resources do they use?

Organization A

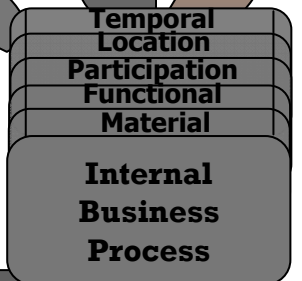
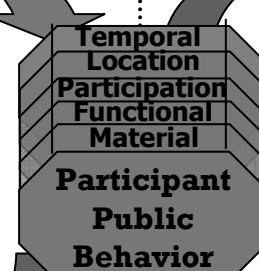
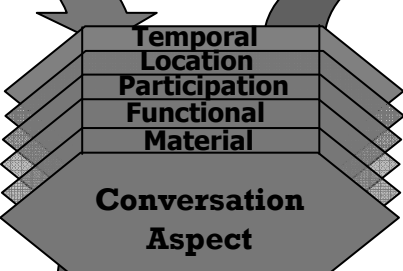
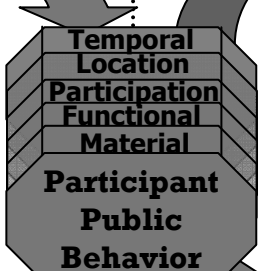
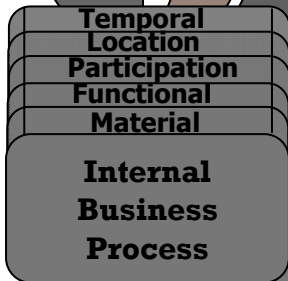
Collaboration

Organization B

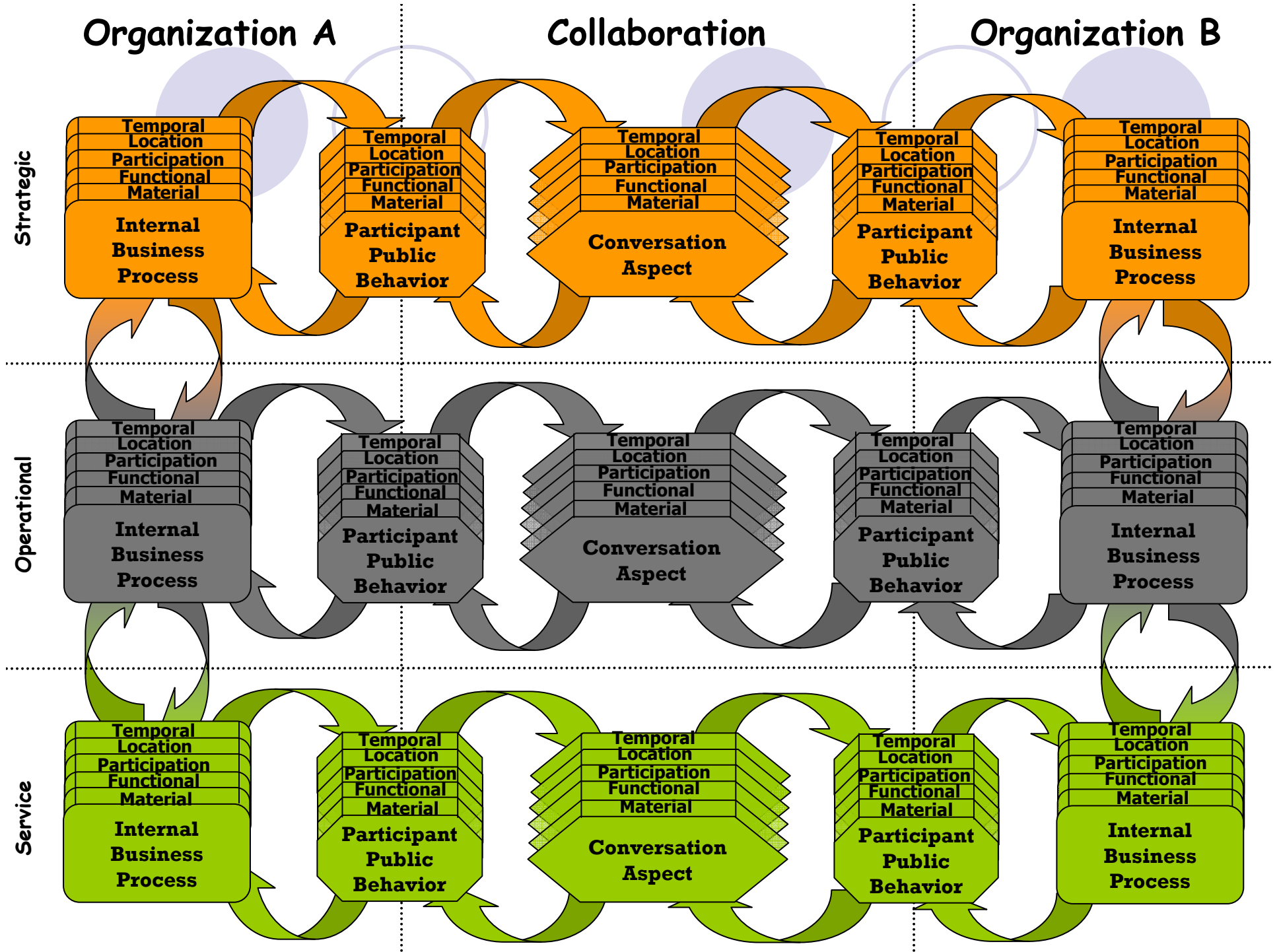
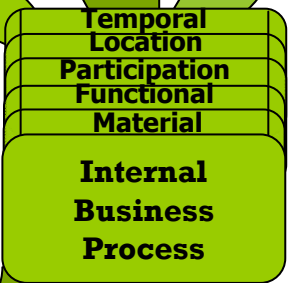
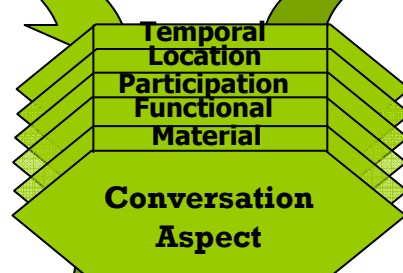
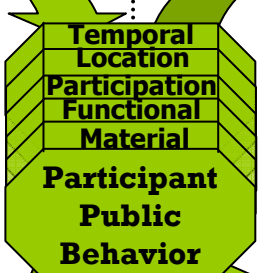
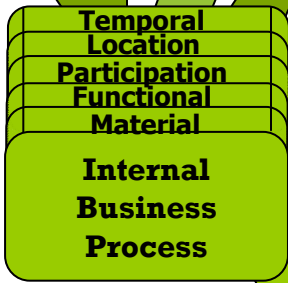
Strategic



Operational



Service





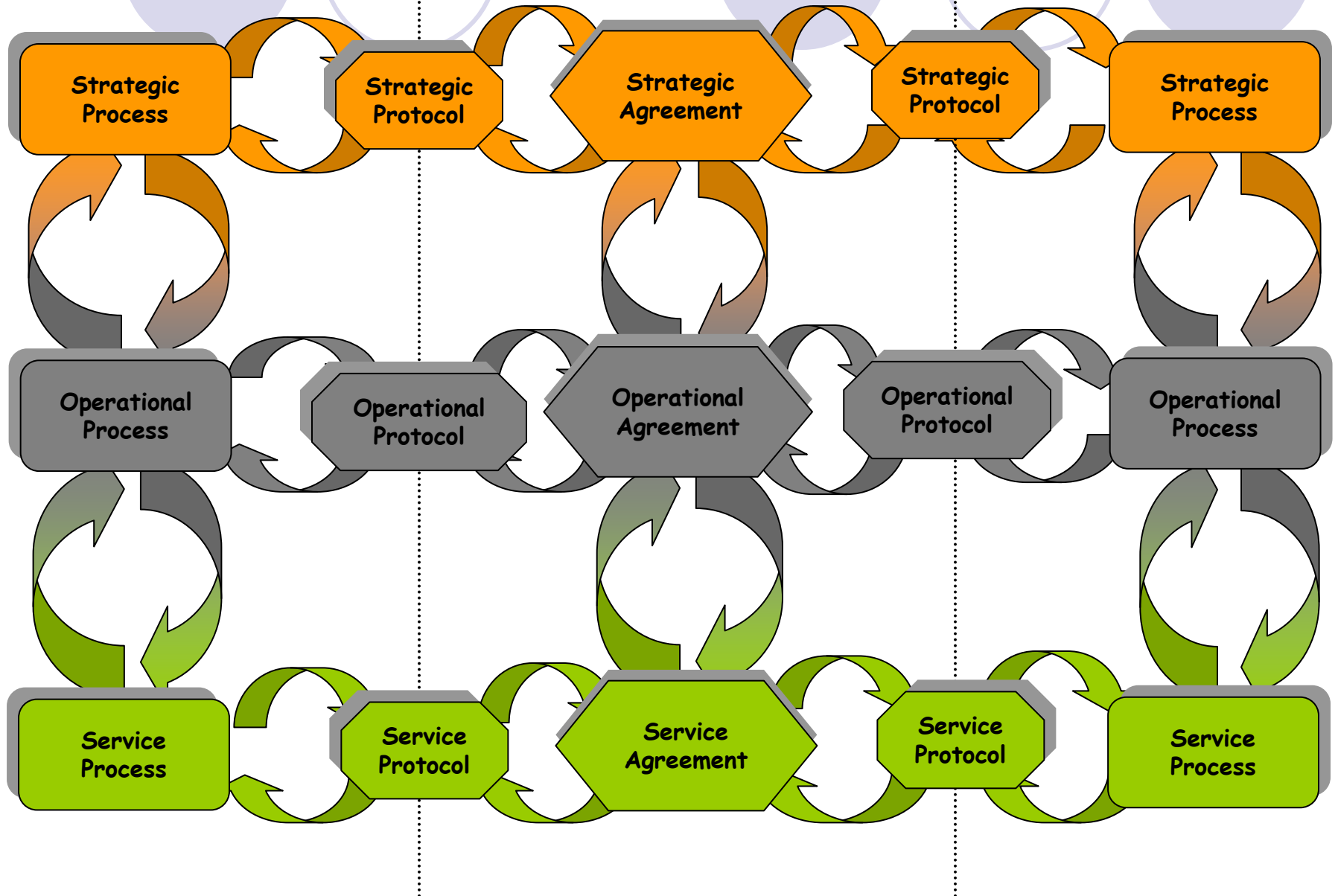
Paulina Porizkova

When I model I'm pretty blank. You can't think too much or it doesn't work;

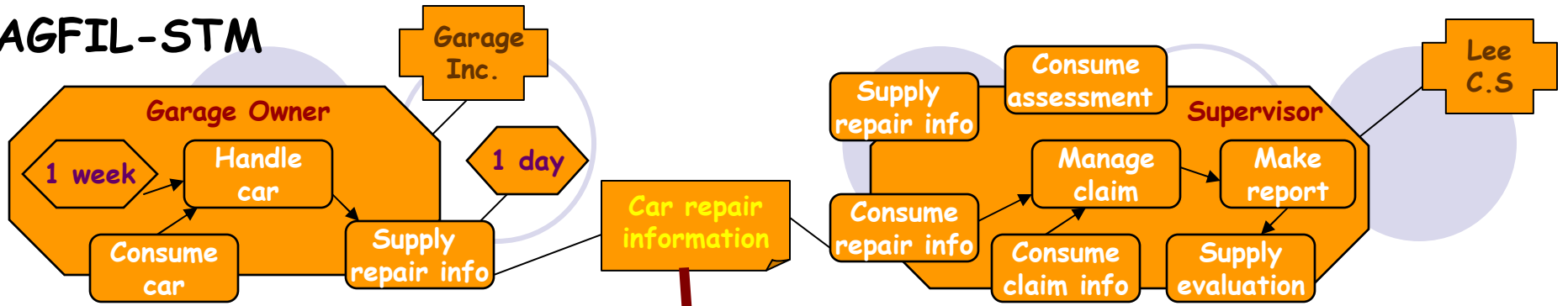
Organization A

Collaboration

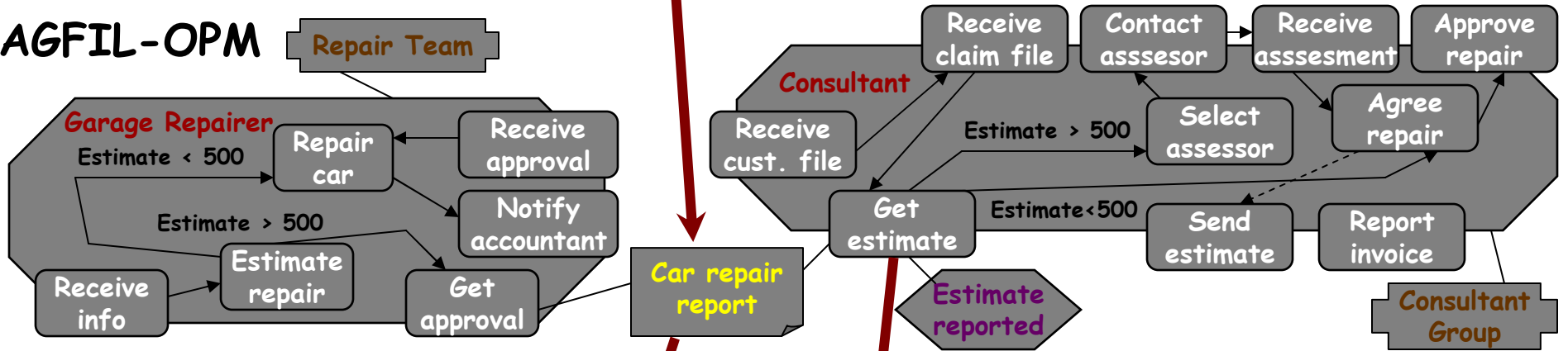
Organization B



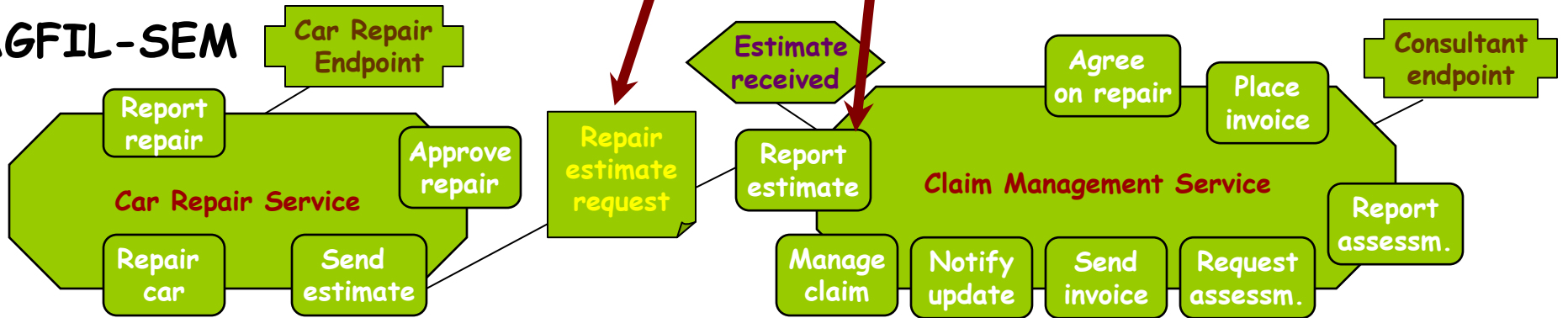
AGFIL-STM



AGFIL-OPM



AGFIL-SEM



Material
Resource
Document
Message



Functional
Step
Task
Operation



Participation
Stakeholder
Actor
Service

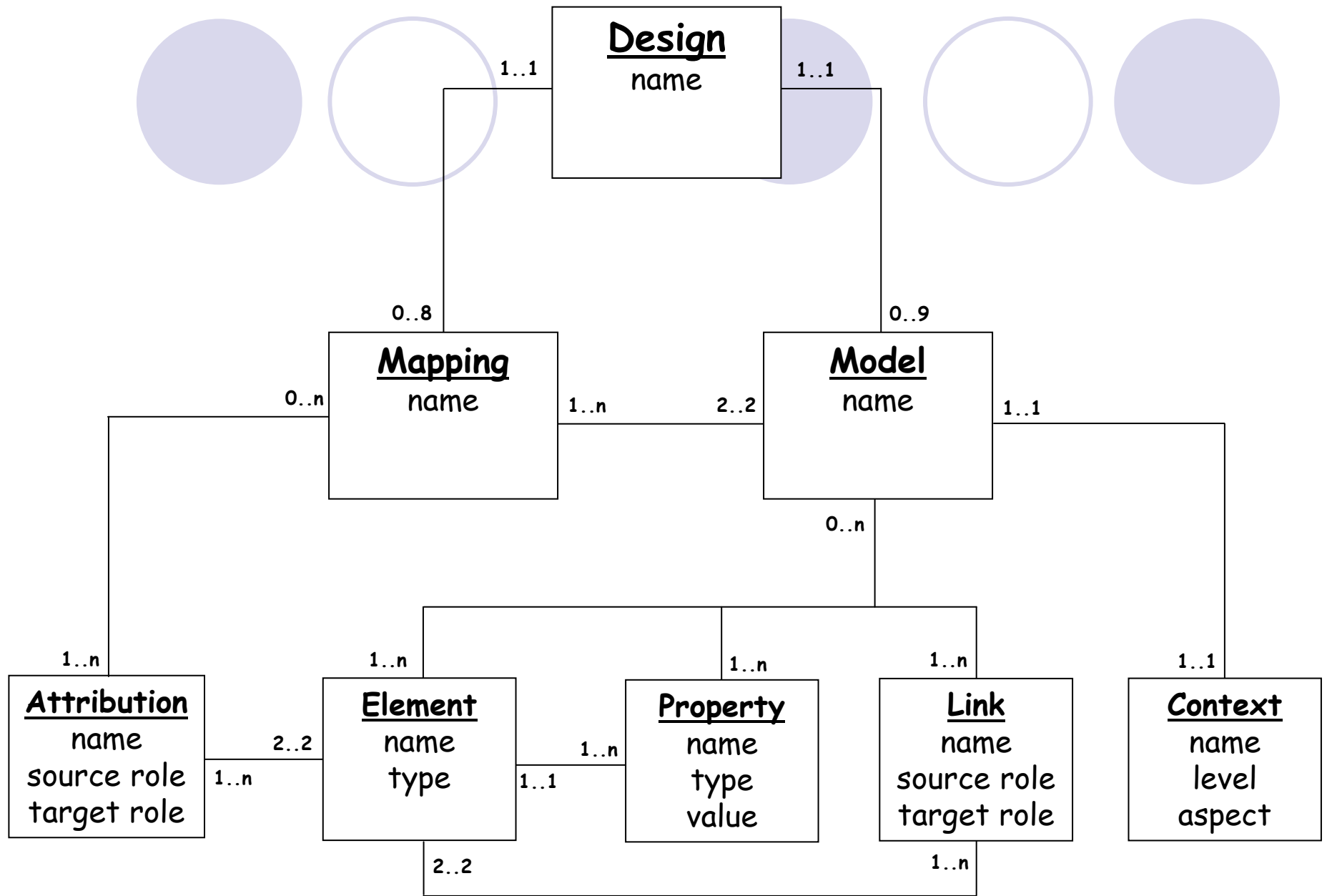


Location
Enterprise
Unit
Endpoint



Temporal
Schedule
Event
Trigger





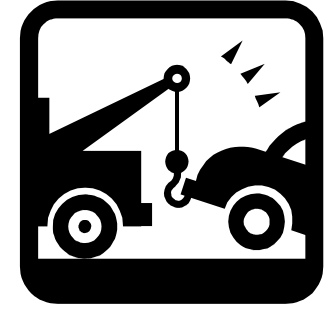
A decorative graphic consisting of six circles arranged in two rows. The top row has three circles: the left one is an outline, and the two on the right are solid light purple. The bottom row has three circles: the two on the left are solid light purple, and the one on the right is an outline.

Bernard Traven

Rules. We don't need no stinking rules
(adapted version);

4) How can we verify that our business and IT are aligned properly?

5) How can we assess the effects of changes in our quality policy?



Policyholder

Insurance Claim (1)

Assign Garage (2)

Garages

2) What happens to our protocol if we change our process?

5) How can we assess the effects of changes in our quality policy?

Inspect Car (7)



Assessors

Estimate repair cost (5)

Assign Assessor (6)

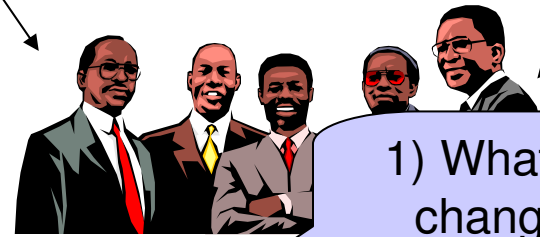


Lee C.S

Claim Report (4)

Claim Notification (3)

Repair Invoice



AGFIL

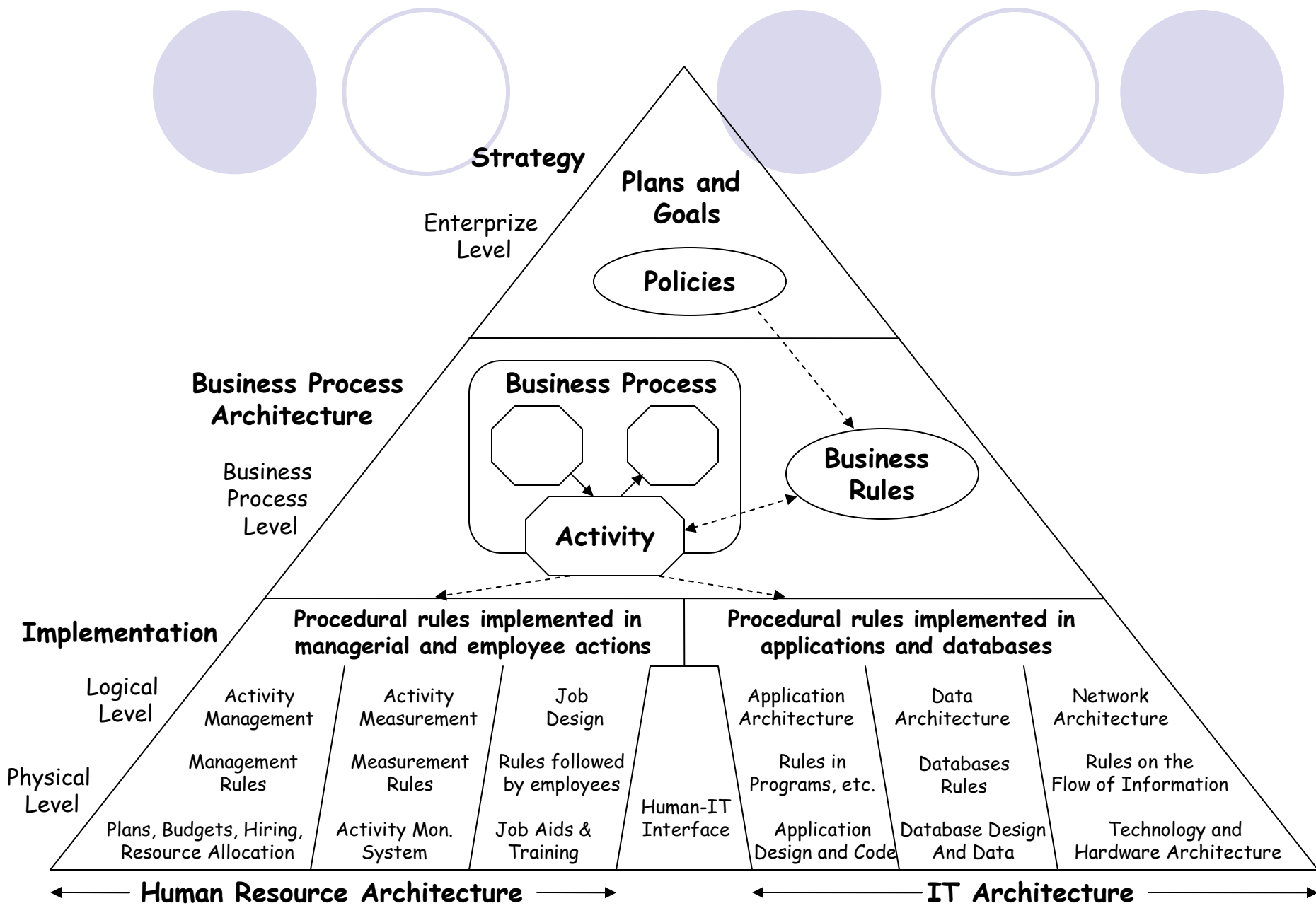
1) What happens if we change the order of activities we undertake?

3) Can we meet a proposed change in our agreement with AGFIL?

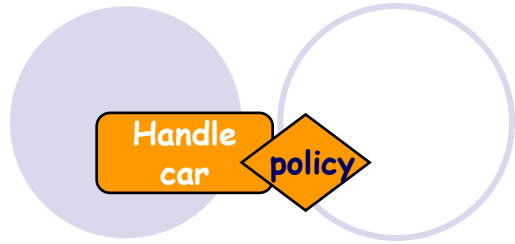


The magic bullet is made of rules

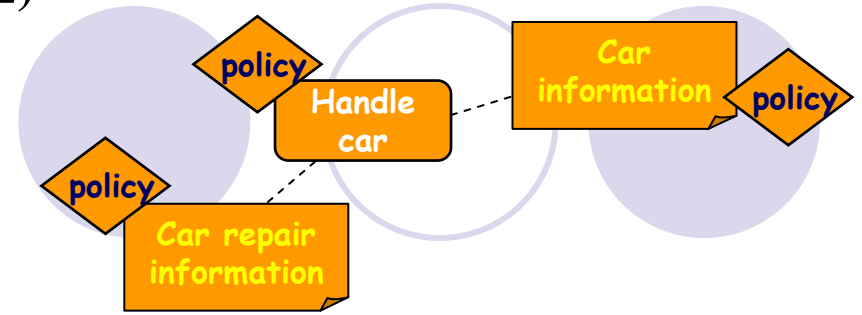
- Capturing requirements in an explicit and thus manageable form
- Ensuring conformance of models to given organizational requirements
- Verifying and validating business collaboration system models



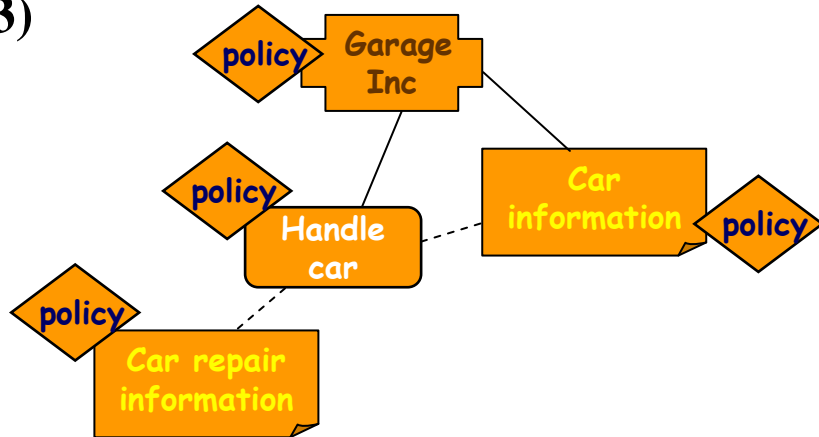
(1)



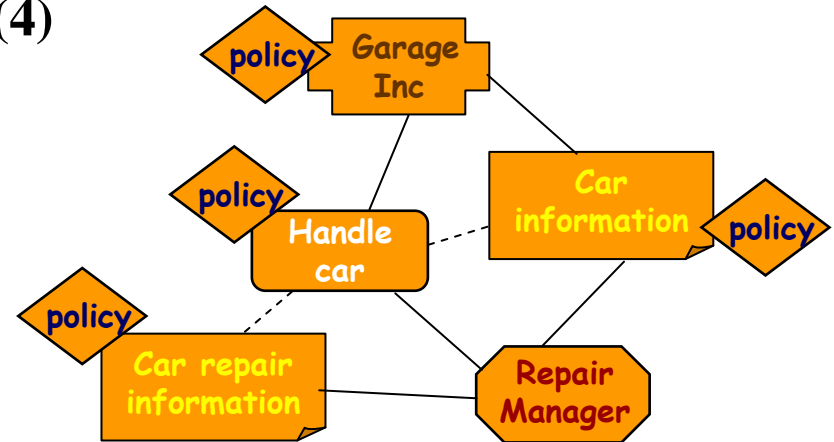
(2)



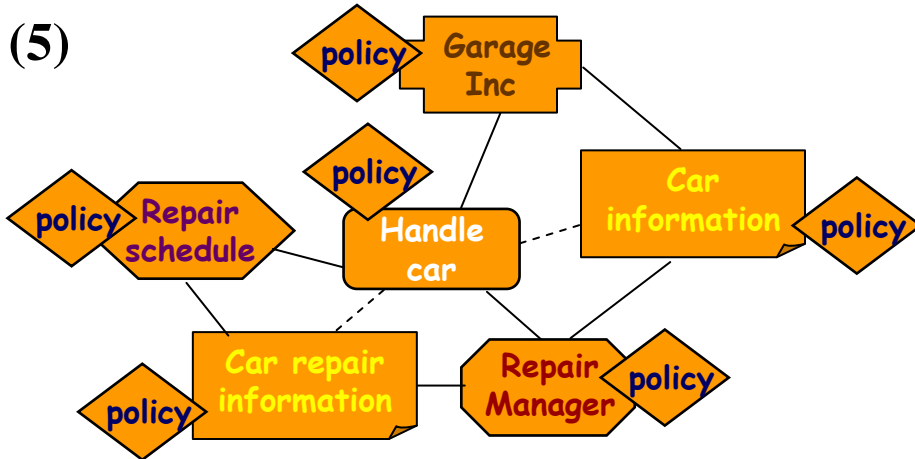
(3)



(4)



(5)



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Douglas Adams

A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of complete fools;



But how do we develop rules?

- Classic rule issues:
 - Ambivalence
 - Circularity (with negation)
 - Deficiency
 - Redundancy
- Additional issues:
 - Versioning
 - Life cycle management
 - Reuse

The title text is centered and surrounded by five circles. From left to right, the circles are: a solid light purple circle, an empty light purple circle, a solid light purple circle, an empty light purple circle, and a solid light purple circle.

And once we have rules, how to apply them?

- Generate models:
 - Only use active rules
 - Flow based rule processing
 - Conflict resolution handling
- Check resulting models:
 - No parts missing
 - No incorrect information defined
 - No conflicting details specified



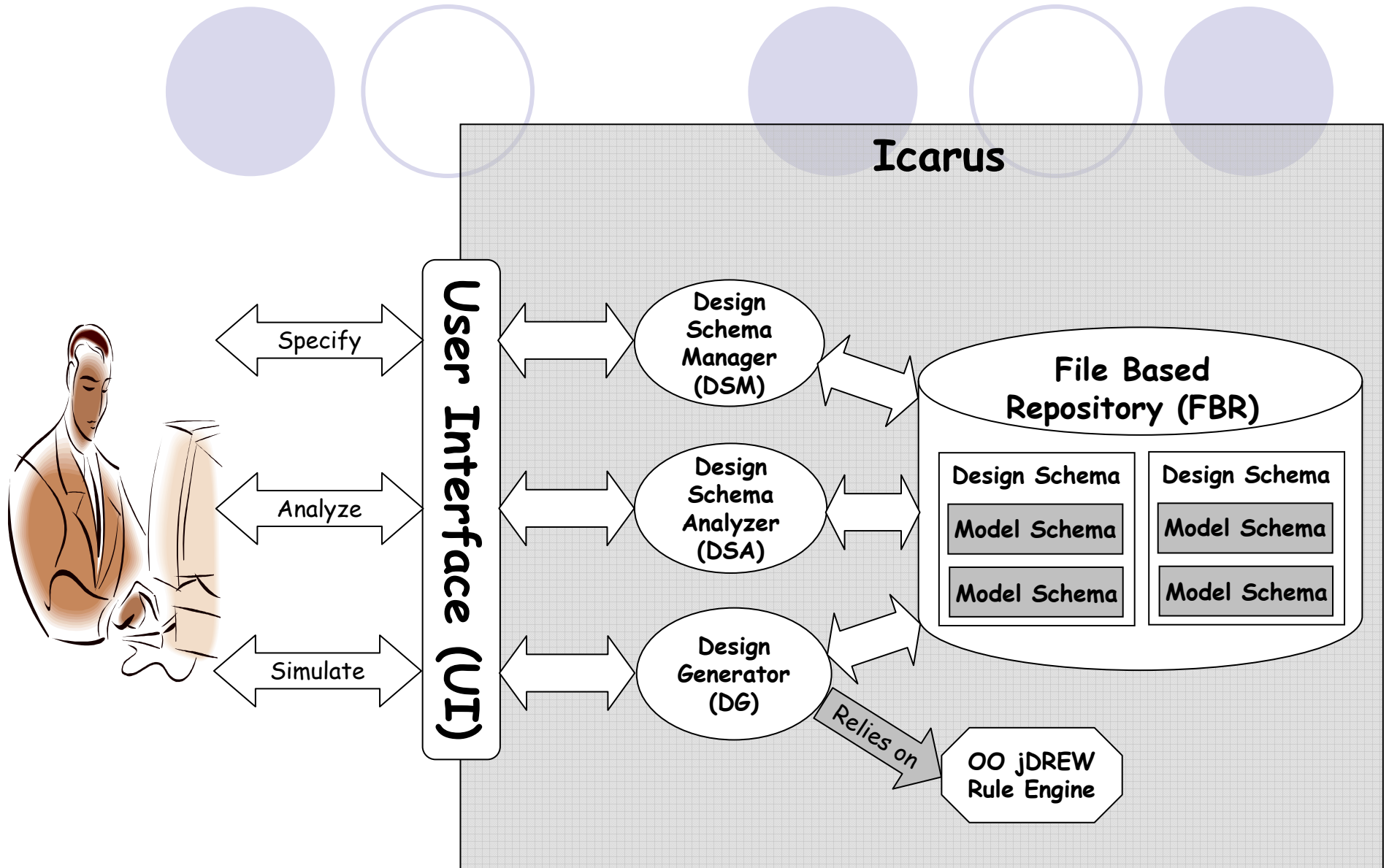
And what is our prize?

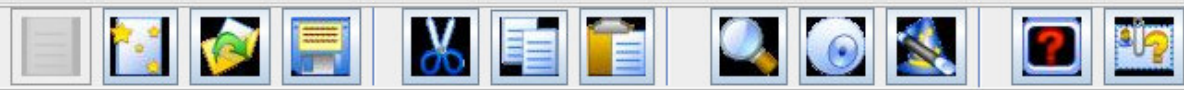
- Flexible at design and runtime:
 - Defining different rules leads to different models
 - Changing existing rules
- Adaptive at design and runtime:
 - Specifying rules to deal with expected events
 - Introducing rules to handle unexpected events

The slide features five light purple circles of varying sizes and styles. One circle is empty with a thin outline, while the others are solid. The text 'Rich Cook' is centered within one of the solid circles.

Rich Cook

Programming today is a race between software engineers striving to build bigger and better idiot-proof programs, and the Universe trying to produce bigger and better idiots. So far, the Universe is winning;





Projects

- StrategicProcess
 - ConsumeCarSchedule
 - ConsumeCar
 - HandleCar
 - RepairInformation
 - SupplyRepairInformation
 - DamagedCar
 - DamagedCarPolicy
 - NormalProcedure**
- GarageInc
- GarageOwner
- HandleCarSchedule
- StrategicAgreement
- StrategicProtocol
- OperationalProcess
- OperationalAgreement
- OperationalProtocol
- ServiceProtocol
- ServiceAgreement
- ServiceProcess

Name	Value
name	NormalProcedure
description	This alternative de...
documentation	
type	
extends	StrategicProcessS...
refers to	
rank	0
version	1.0
date of activation	Tue Jan 01 16:03:...
date of expiration	Mon Jan 01 16:03:...
status	new
last modified	Mon Jun 11 16:03:...

Edit policy alternative ×

Create policy alternative
 Include policy alternative by reference
 Extend policy alternative

Name:

Description:

Activation:

Expiration:

Guards:

Version:



Arthur Bloch

A conclusion is the place where you get tired
of thinking;



So what did we learn?

- Information systems for business collaborations are complex
- They require extensive modeling covering multiple dimensions
- The resulting models must be verifiable and manageable in order to cope with change



Some more things we learned

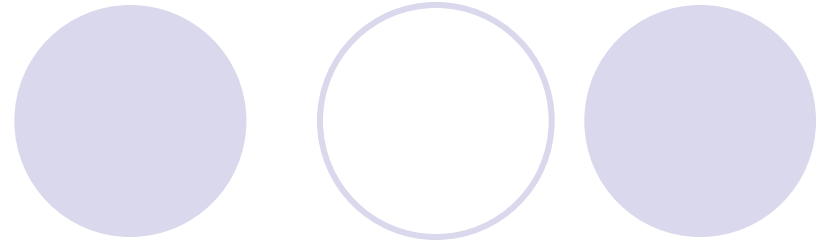
- Rule based development and management seems viable
- Allows changes to be made and their effects to be managed
- Enables verification of business collaboration systems



John Sladek

The future, according to some scientists, will be exactly like the past, only far more expensive;

Are we there yet?



- Incorporate additional advanced requirements
- Introduce more perspectives
- More sophisticated rules may be needed
- Embrace semantic oriented solutions

The text is centered and surrounded by six light purple circles. Three circles are positioned above the text, and three are below it. The circles are arranged in a staggered pattern, with the top row having three circles and the bottom row having three circles. The text 'Henry Wadsworth Longfellow' is written in a large, black, sans-serif font.

Henry Wadsworth Longfellow

Great is the art of beginning, but
greater is the art of ending;