

# The Art & Science of Business Architectures



By Antonie van Rensburg, PhD, Pr.Eng



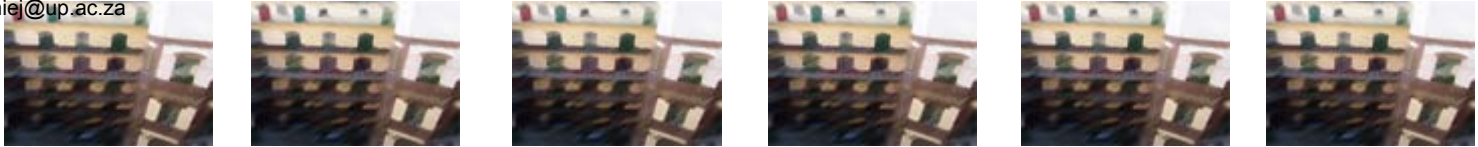
Introduction - why?

Systems thinking & Business Fractals

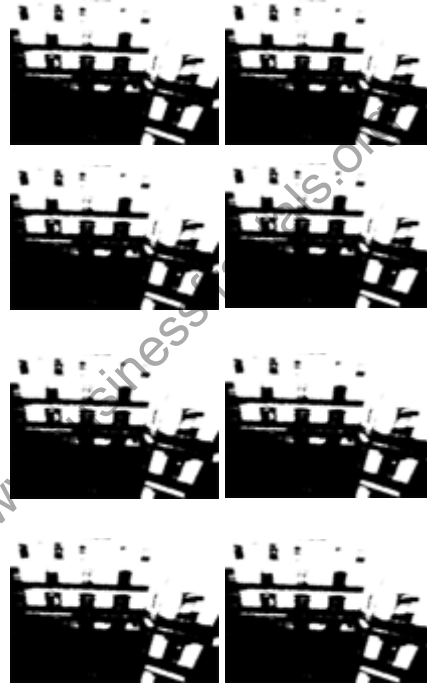
Enterprise Architecture Context

Conclusion

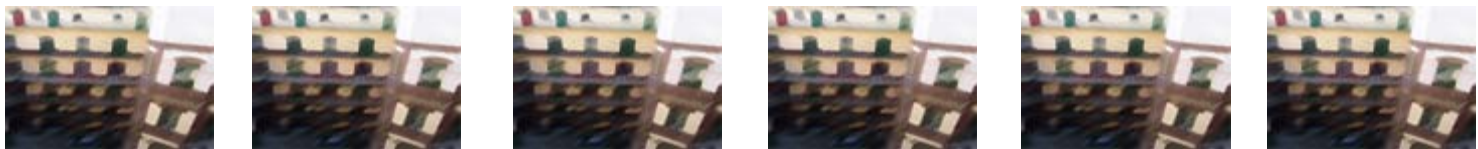
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## Enterprise Architecture



## Enterprise Architecture





Introduction - why?

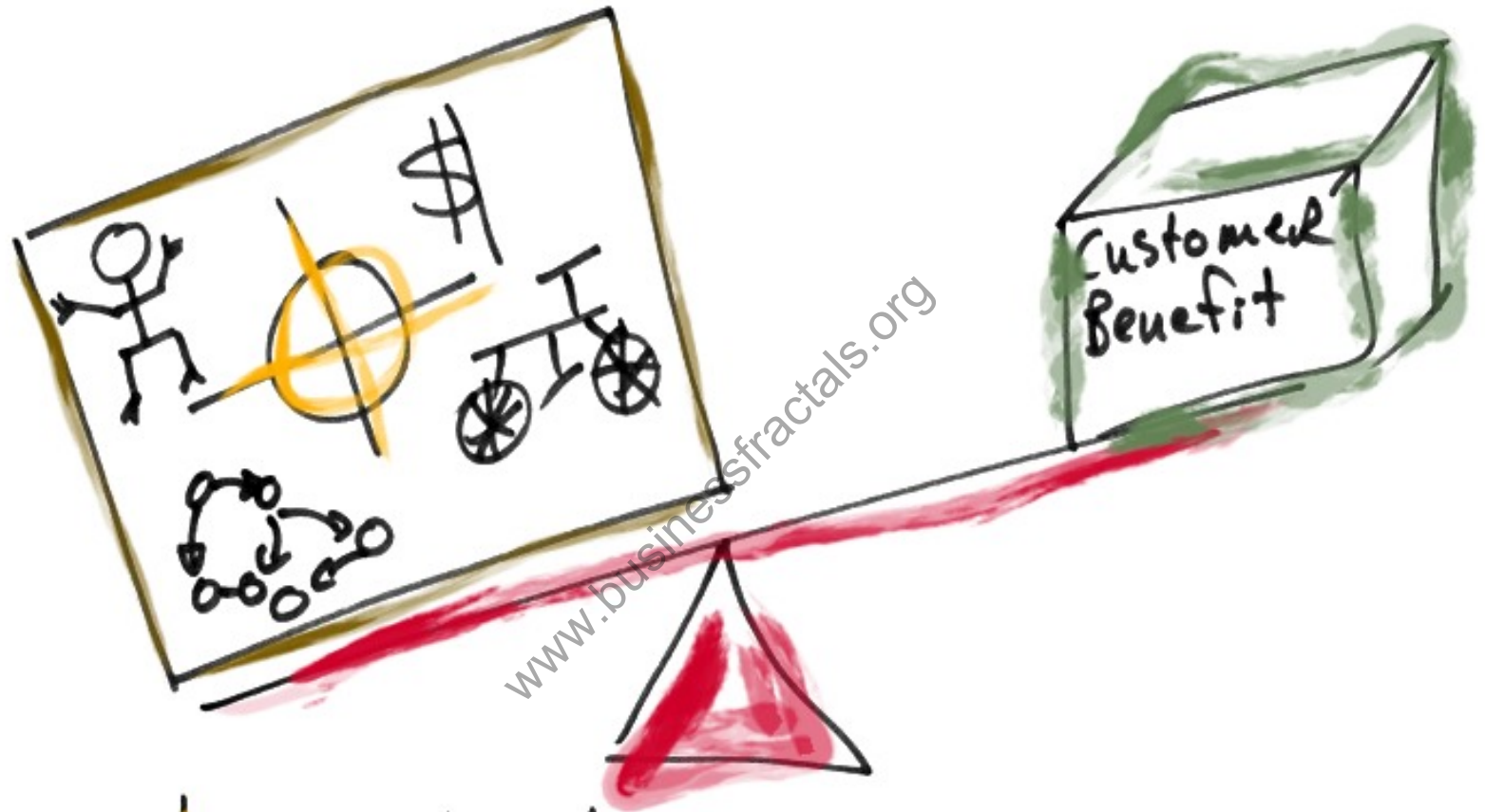
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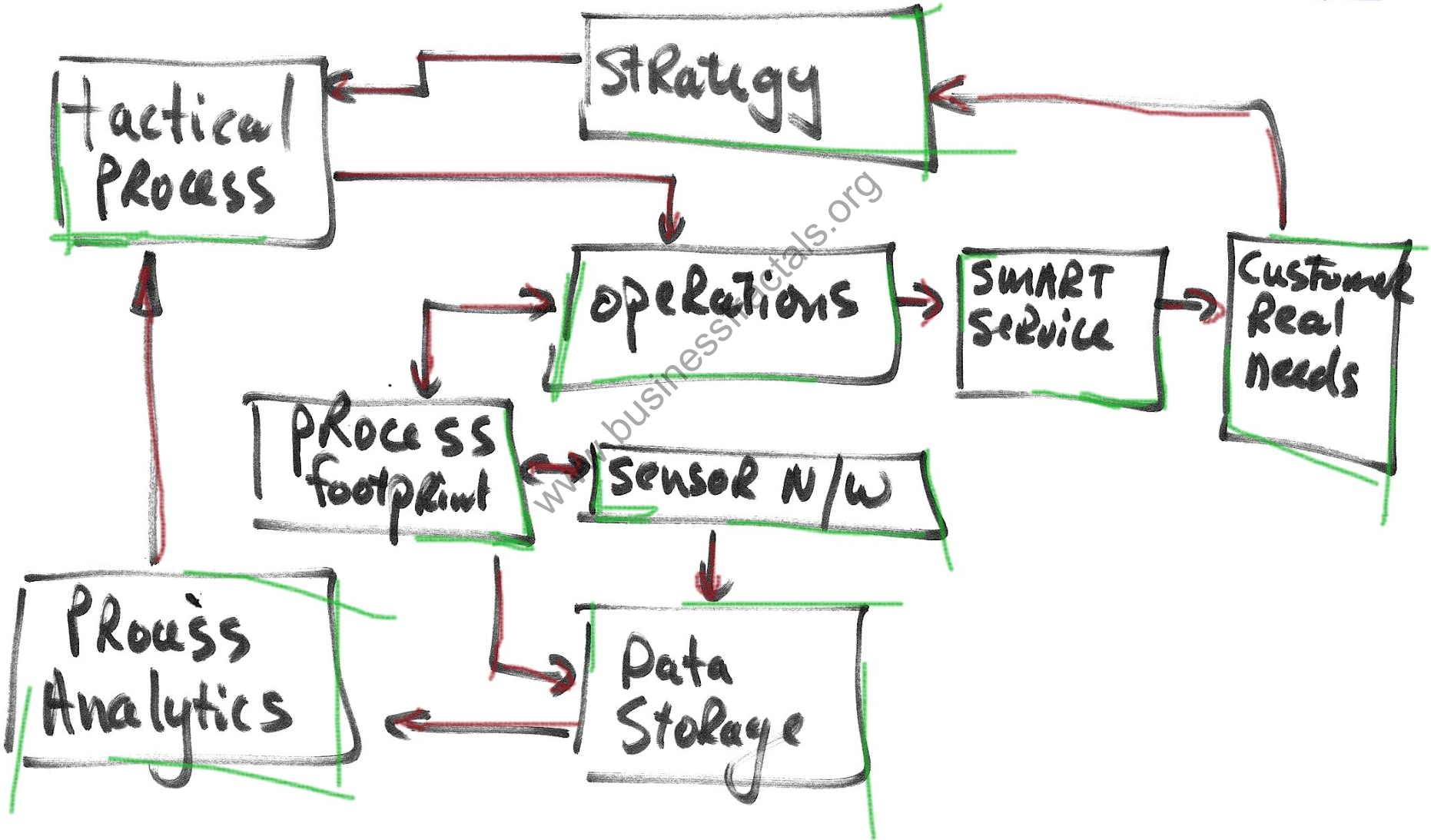
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$\oplus$  = optimal organizational performance  
 $\text{T}$  = Sustainability

# Creating Smart Business Processes





businessfractals.org





Product & Services

(A)

(B)

(D)

Mobile-pay Payment Solution

Managed Services

Shares Sell

Agencies for Service Providers

Support Services

Airtime Sales

Customer Bed Solutions

Payment facilitation

Help Desk Support

Beamer connects

H/W

Business Applications

a) Airtime / Device support

a) App support

POS

Mobile device - Handset

Server Infrastructure

Web apps

Security app

Other - security/Backup

USSD x valid connection x MSISDN

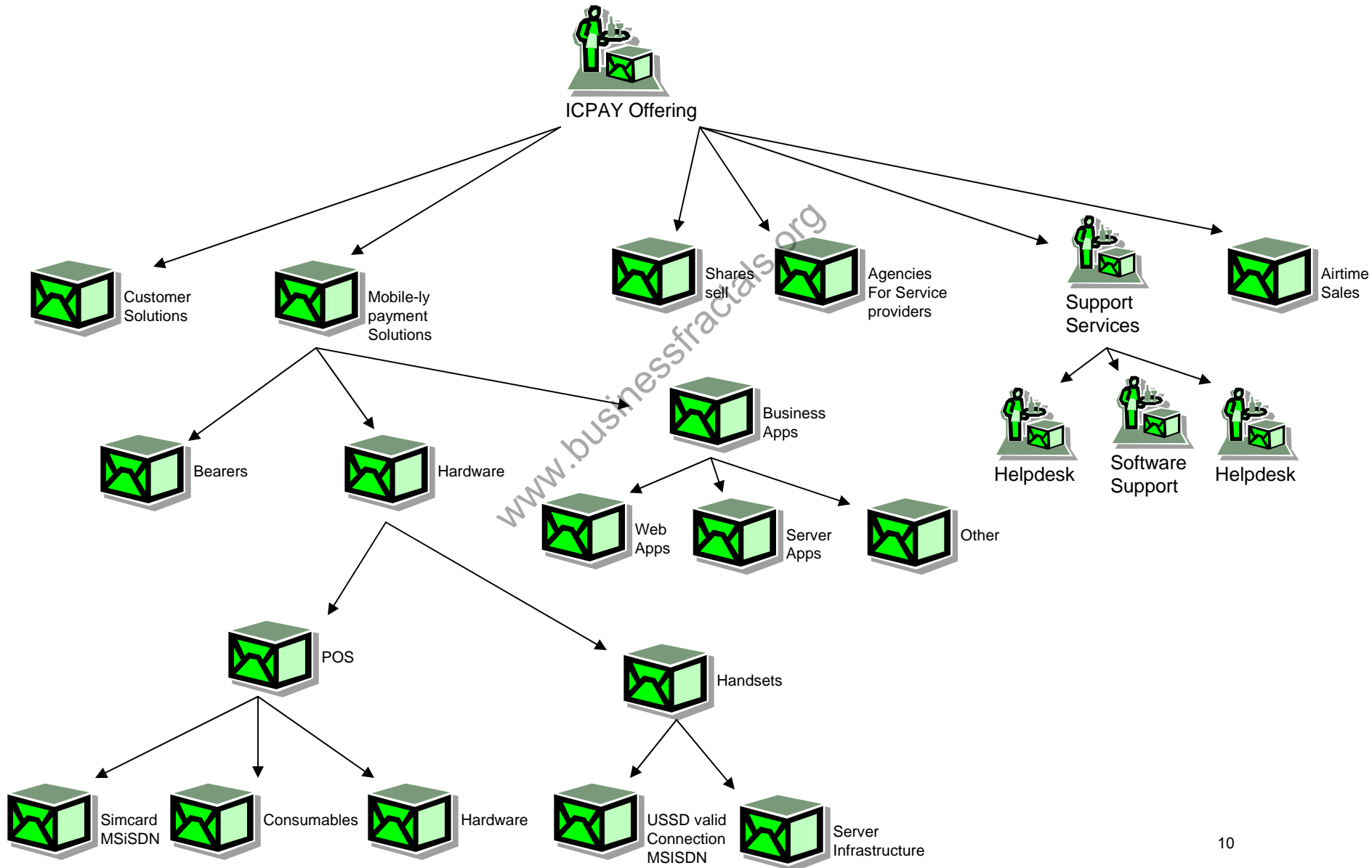
Sim card - MSISDN

Consumables

Hardware - Terminal

# Product & Service Streams

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Customer Segmentation  


Sales Channels  


Delivery Channels  


Primary Member of Co-op.

Un-banked LSM 1-3

Under Banked LSM 3-4


Affluent LSM 7+ -10.


Indirect


District

Area.

Face 2 Face.

Registration  


Sales + customized Solutions  


Service Providers  



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Client of ICPay Ltd

District + Book Area + Book

Vendor.


Direct

customized Solutions  



Share Agents  


Airtime  


Internet (web).

Account management + transactional admin  


wireless Handset / POS

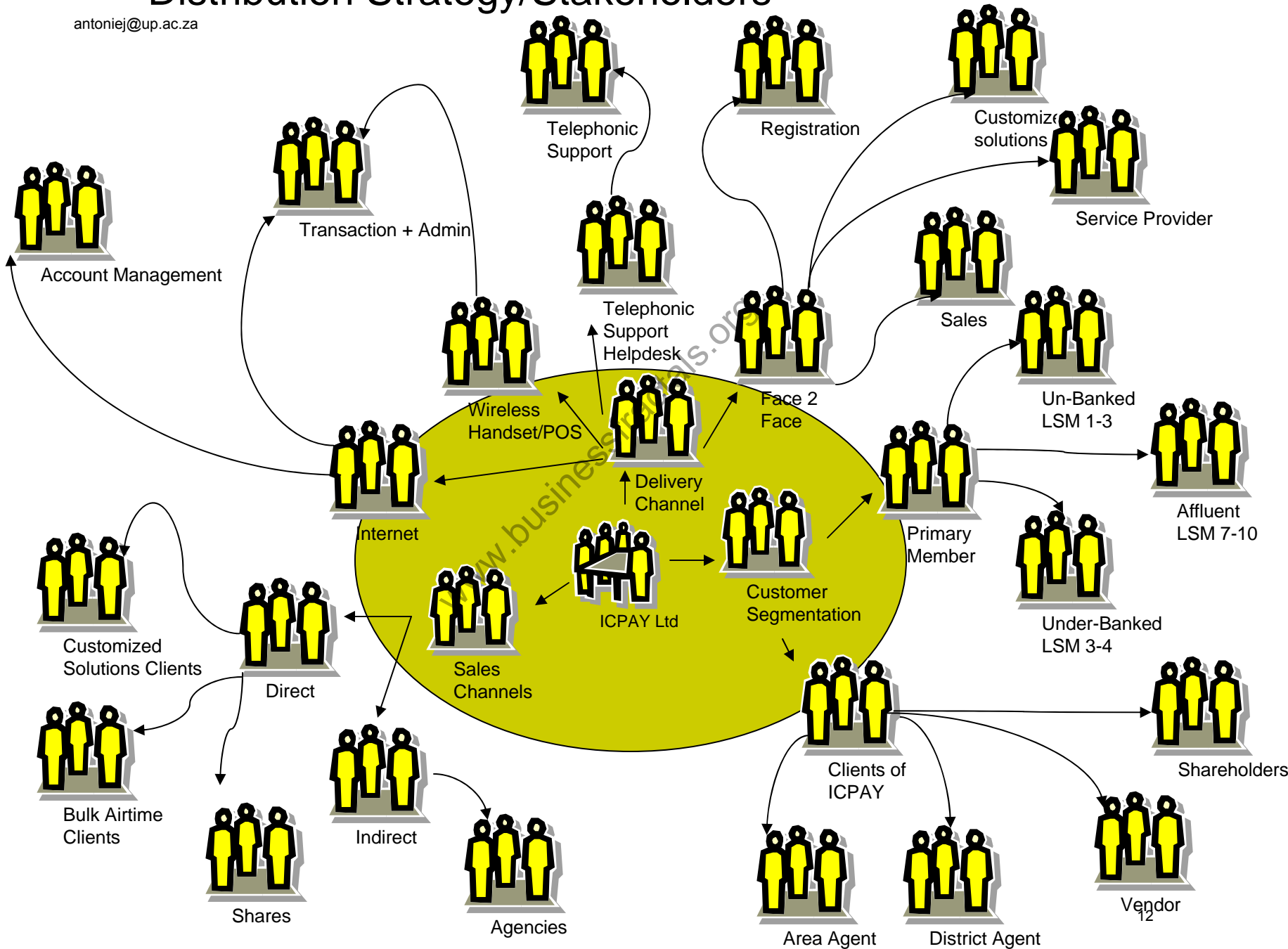
Transactions + admin  


Telephonic Support Help Desk.

Support  


# Distribution Strategy/Stakeholders

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# Collaborative map

time  
S

Co-op

ICPay LTD

Sell shares?

Investments

Operational acc

Flow account

slow in

members

Bank

can be

Primary member

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will do.

appoint

Subsidiary - non member

Autonomous Subsidiary

Value Weller

District Agent

Vendors

allo allocates manages (costs etc)

Area agent

Standard vendor on-us + POS + Handset

Linked vendor + Affiliated

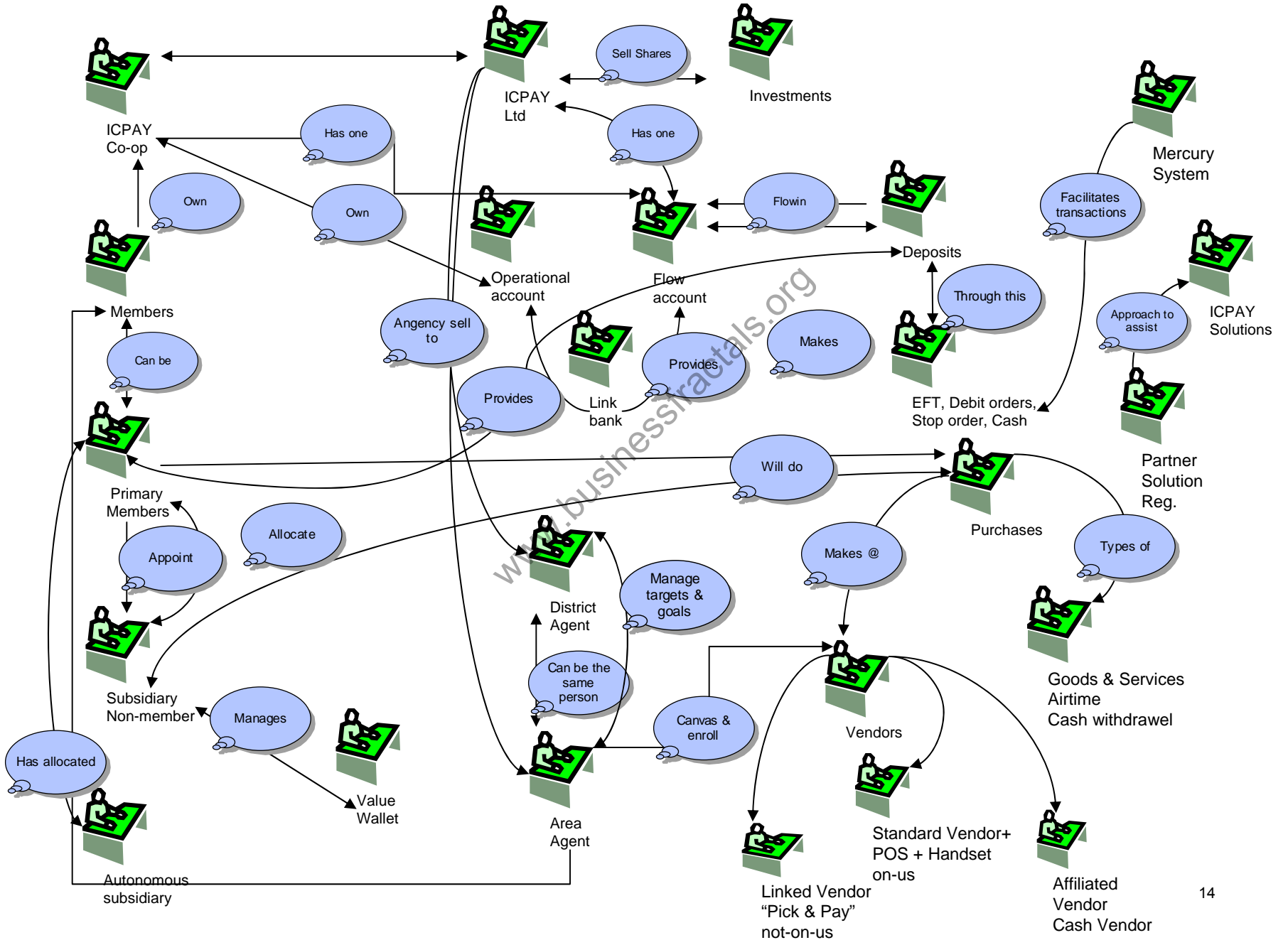
sell to

manage & targets

Roll

can be the same person

# Collaboration Map



Microsoft Outlook  
Functional Analysis Rrv2.pdf - Adobe Acrobat Professional

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Functional Analysis

People Interviewed: \_\_\_\_\_

Functional Area: \_\_\_\_\_

Submit by Email    Print Form

| Job/Business Function | IM                       | CC                       | CO                       | CE                       | C                        | S                        | M                        | User Responsible | Final Customer |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------|----------------|
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|                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                  |                |

Notes:  
 CC = Critical process to satisfy stated the customer need. Rate Low, Medium or High.  
 CO = Process without which the business will cease to function. Rate Low, Medium or High.  
 CE = Business process that gives your company the competitive edge. Could be applied technology, special aptitude, skill or capability in your resources. Rate Low, Medium or High.  
 C = Core Business Process  
 S = Support Business Process  
 M = Strategic / Management  
 PM: Process Maturity (1-5, 1 = not mature, 5 = mature)

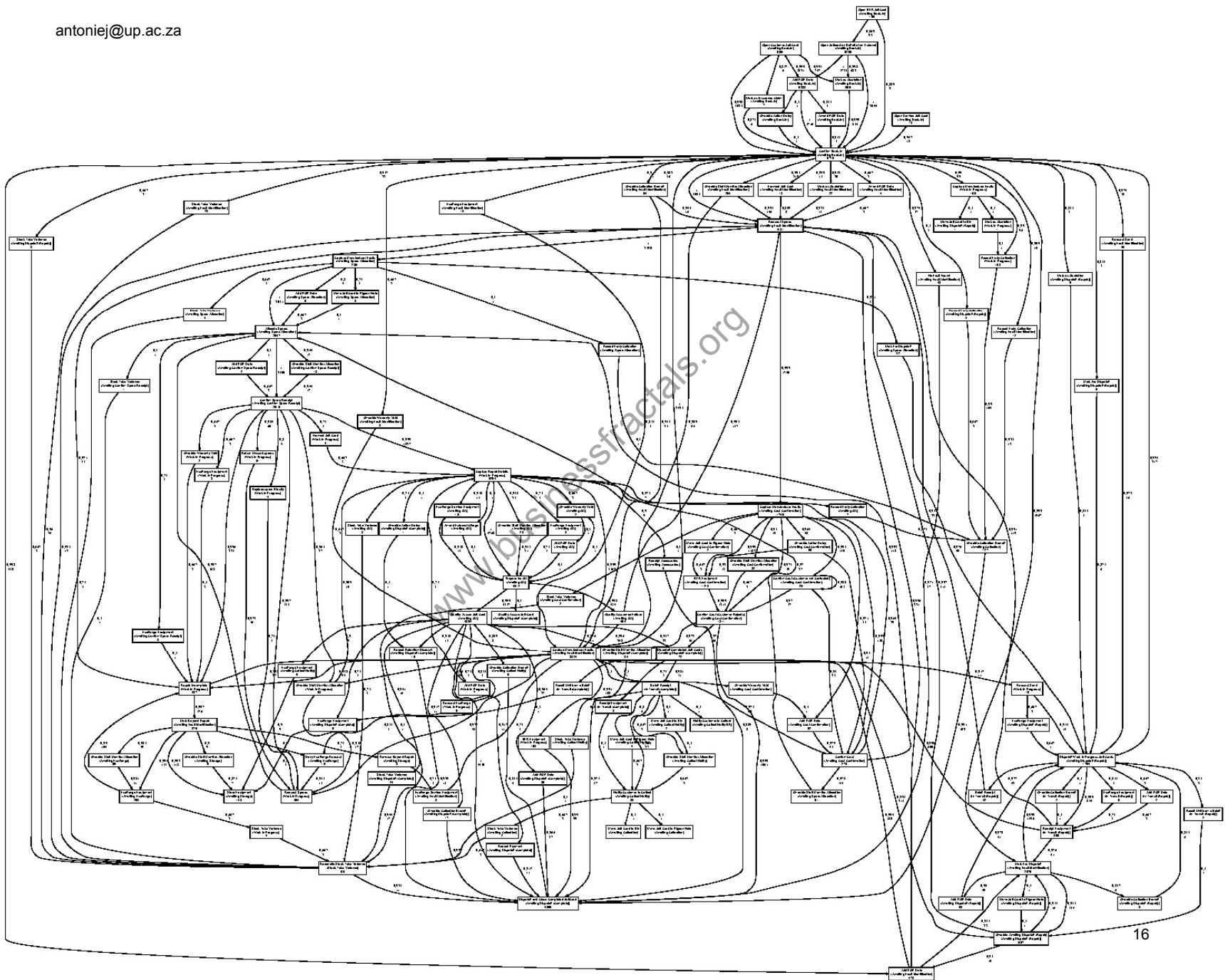
| Job/Business Function | IM | CC | CO | CE | C | S | M | User Responsible | Final Customer |
|-----------------------|----|----|----|----|---|---|---|------------------|----------------|
| 991430 QAFAIL         |    |    |    |    |   |   |   |                  |                |
| 991430 SPAREREQ       |    |    |    |    |   |   |   |                  |                |
| 991430 MFRFLT         |    |    |    |    |   |   |   |                  |                |
| 12 991430 CCFMHL      |    |    |    |    |   |   |   |                  |                |
| 13 991430 CCFMHL      |    |    |    |    |   |   |   |                  |                |
| 14 991430 CCFMHL      |    |    |    |    |   |   |   |                  |                |
| 14 991430 CCFMREJ     |    |    |    |    |   |   |   |                  |                |
| 15 991430 DISPCC      |    |    |    |    |   |   |   |                  |                |
| 16 991438 BOOKIN      |    |    |    |    |   |   |   |                  |                |
| 17 991438 MFRFLT      |    |    |    |    |   |   |   |                  |                |
| 18 991438 REPAIR      |    |    |    |    |   |   |   |                  |                |
| 19 991438 QAPREP      |    |    |    |    |   |   |   |                  |                |
| 20 991438 QA          |    |    |    |    |   |   |   |                  |                |
| 21 991438 DISPCC      |    |    |    |    |   |   |   |                  |                |
| 22 991449 BOOKIN      |    |    |    |    |   |   |   |                  |                |
| 23 991449 SPAREREQ    |    |    |    |    |   |   |   |                  |                |
| 24 991449 MFRFLT      |    |    |    |    |   |   |   |                  |                |
| 25 991449 SPAREALC    |    |    |    |    |   |   |   |                  |                |
| 26 991449 SPARECFM    |    |    |    |    |   |   |   |                  |                |
| 27 991449 REPAIR      |    |    |    |    |   |   |   |                  |                |
| 28 991449 QAPREP      |    |    |    |    |   |   |   |                  |                |
| 29 991449 QA          |    |    |    |    |   |   |   |                  |                |
| 30 991449 DISPCC      |    |    |    |    |   |   |   |                  |                |
| 31 991467 BOOKIN      |    |    |    |    |   |   |   |                  |                |
| 32 991467 MFRFLT      |    |    |    |    |   |   |   |                  |                |
| 33 991467 REPAIR      |    |    |    |    |   |   |   |                  |                |
| 34 991467 QAPREP      |    |    |    |    |   |   |   |                  |                |
| 35 991467 QA          |    |    |    |    |   |   |   |                  |                |
| 36 991467 DISPCC      |    |    |    |    |   |   |   |                  |                |
| 37 1007776 OPNCJ      |    |    |    |    |   |   |   |                  |                |
| 38 1007776 BOOKIN     |    |    |    |    |   |   |   |                  |                |
| 39 1007776 MKDISP     |    |    |    |    |   |   |   |                  |                |
| 40 1007776 DISPWPV    |    |    |    |    |   |   |   |                  |                |
| 41 1007776 BULKRCPT   |    |    |    |    |   |   |   |                  |                |
| 42 1007776 MFRFLT     |    |    |    |    |   |   |   |                  |                |
| 43 1007776 REPAIR     |    |    |    |    |   |   |   |                  |                |
| 44 1007776 QAPREP     |    |    |    |    |   |   |   |                  |                |
| 45 1007776 QA         |    |    |    |    |   |   |   |                  |                |
| 46 1007776 DISPCOMP   |    |    |    |    |   |   |   |                  |                |



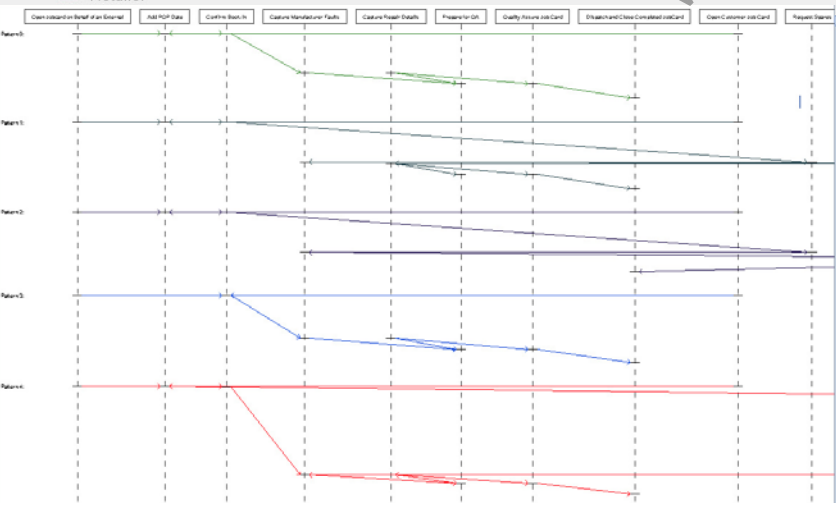
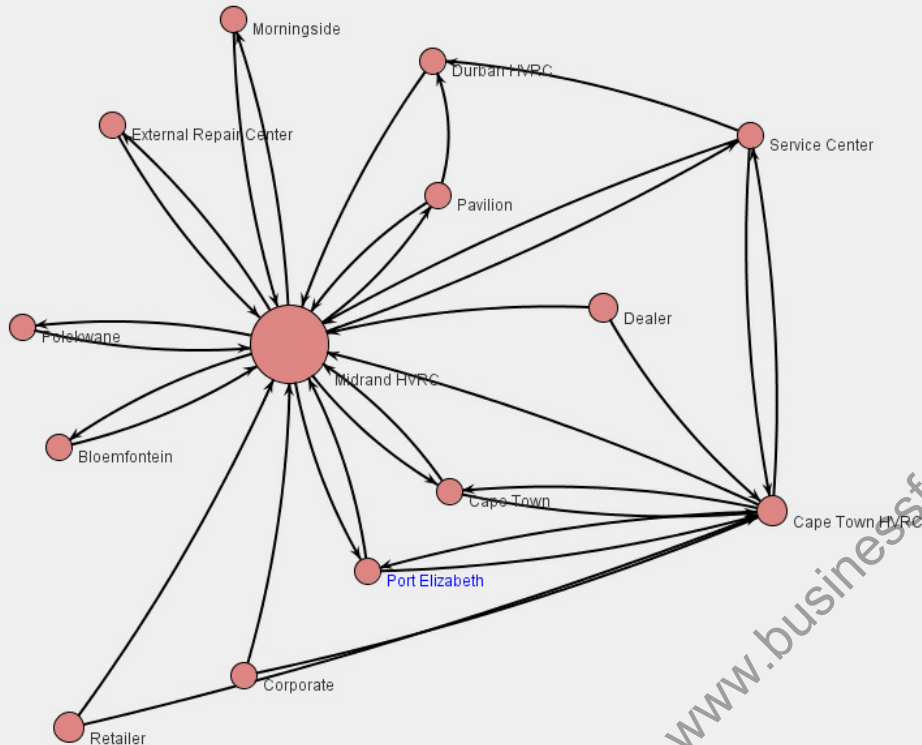
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Availability

Scanning the







| Pattern 0:      |
|-----------------|
| Frequency: 1030 |
| Throughput time |
| avg: 9.61086    |
| min: 0.27877    |
| max: 24.81219   |
| stdev: 3.65696  |

| Pattern 1:      |
|-----------------|
| Frequency: 621  |
| Throughput time |
| avg: 9.88049    |
| min: 2.77376    |
| max: 22.84391   |
| stdev: 3.41494  |

| Pattern 2:      |
|-----------------|
| Frequency: 544  |
| Throughput time |
| avg: 8.86324    |
| min: 0.25276    |
| max: 21.88686   |
| stdev: 3.58022  |

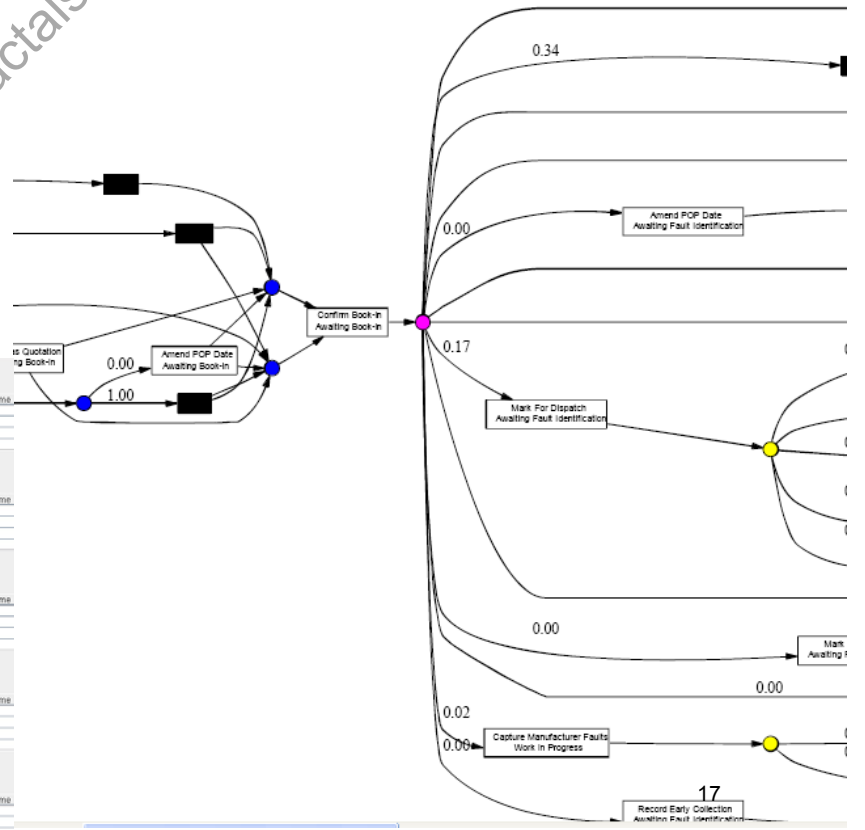
  

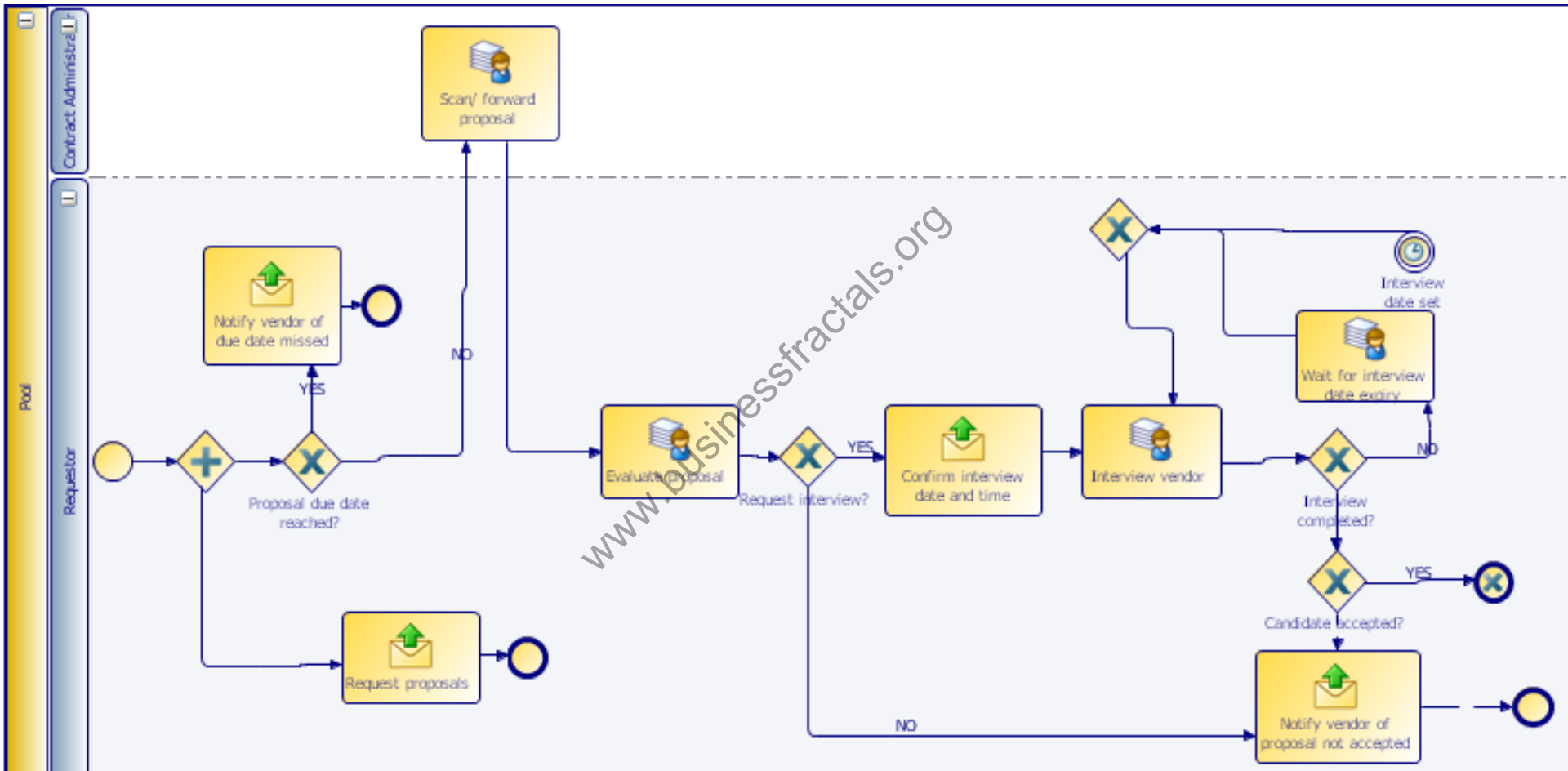
| Pattern 3:      |
|-----------------|
| Frequency: 358  |
| Throughput time |
| avg: 9.99742    |
| min: 0.65647    |
| max: 24.03188   |
| stdev: 3.91058  |

| Pattern 4:      |
|-----------------|
| Frequency: 208  |
| Throughput time |
| avg: 16.03754   |
| min: 8.91337    |
| max: 26.04841   |
| stdev: 4.67908  |

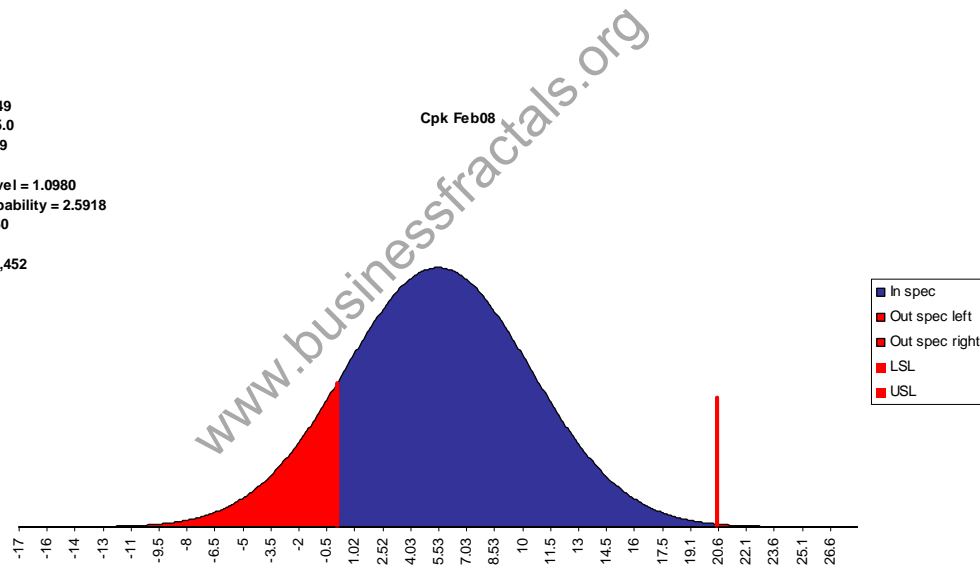
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Mean = 5.49  
StdDev = 5.0  
USL = 20.49  
LSL = 0  
Sigma Level = 1.0980  
Sigma Capability = 2.5918  
Cpk = .3660  
Cp = .6830  
DPM = 137,452

Cpk Feb08



Introduction - why?



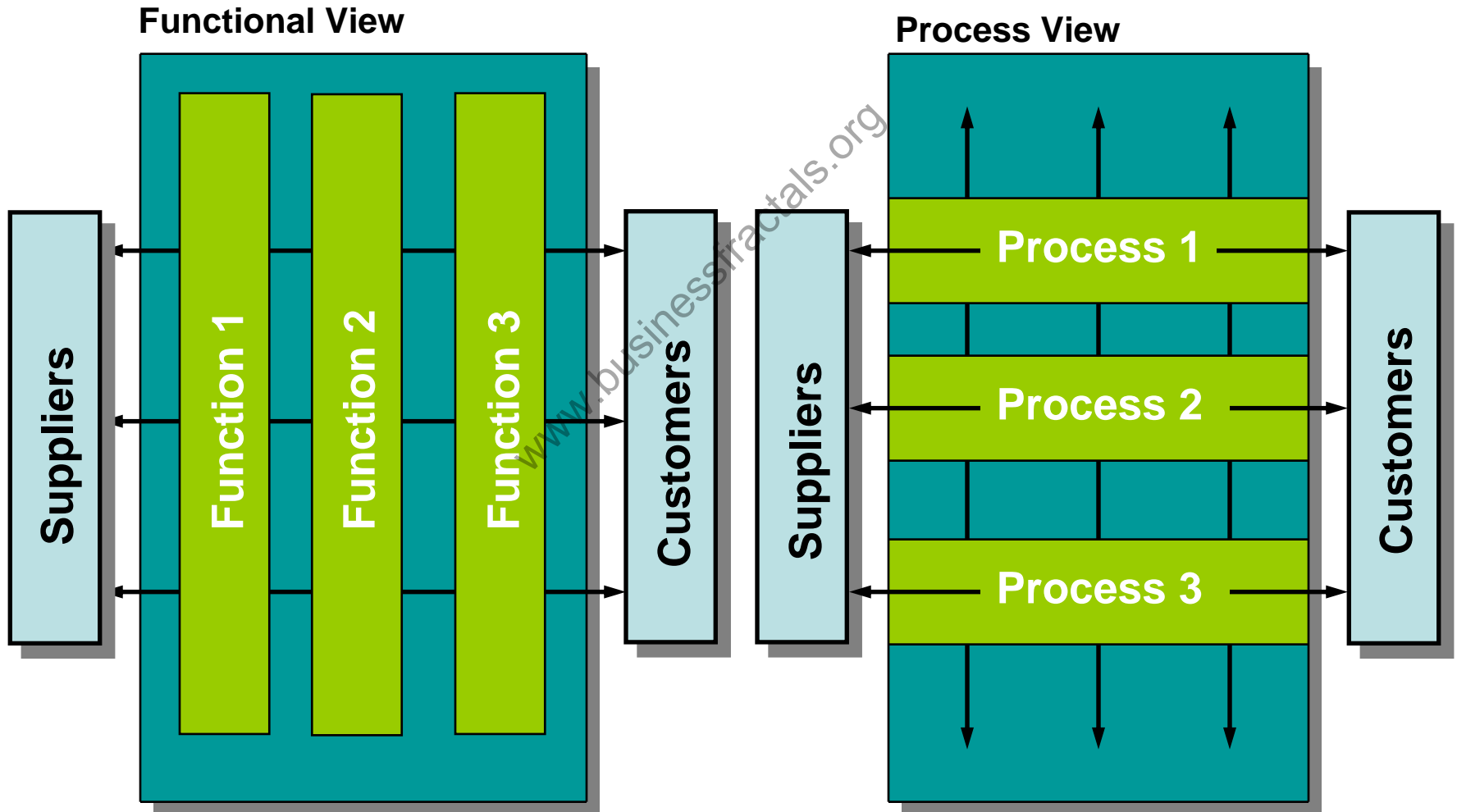
Systems thinking & Business Fractals

Enterprise Architecture Context

Conclusion

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# The problem of “process” in the organisation

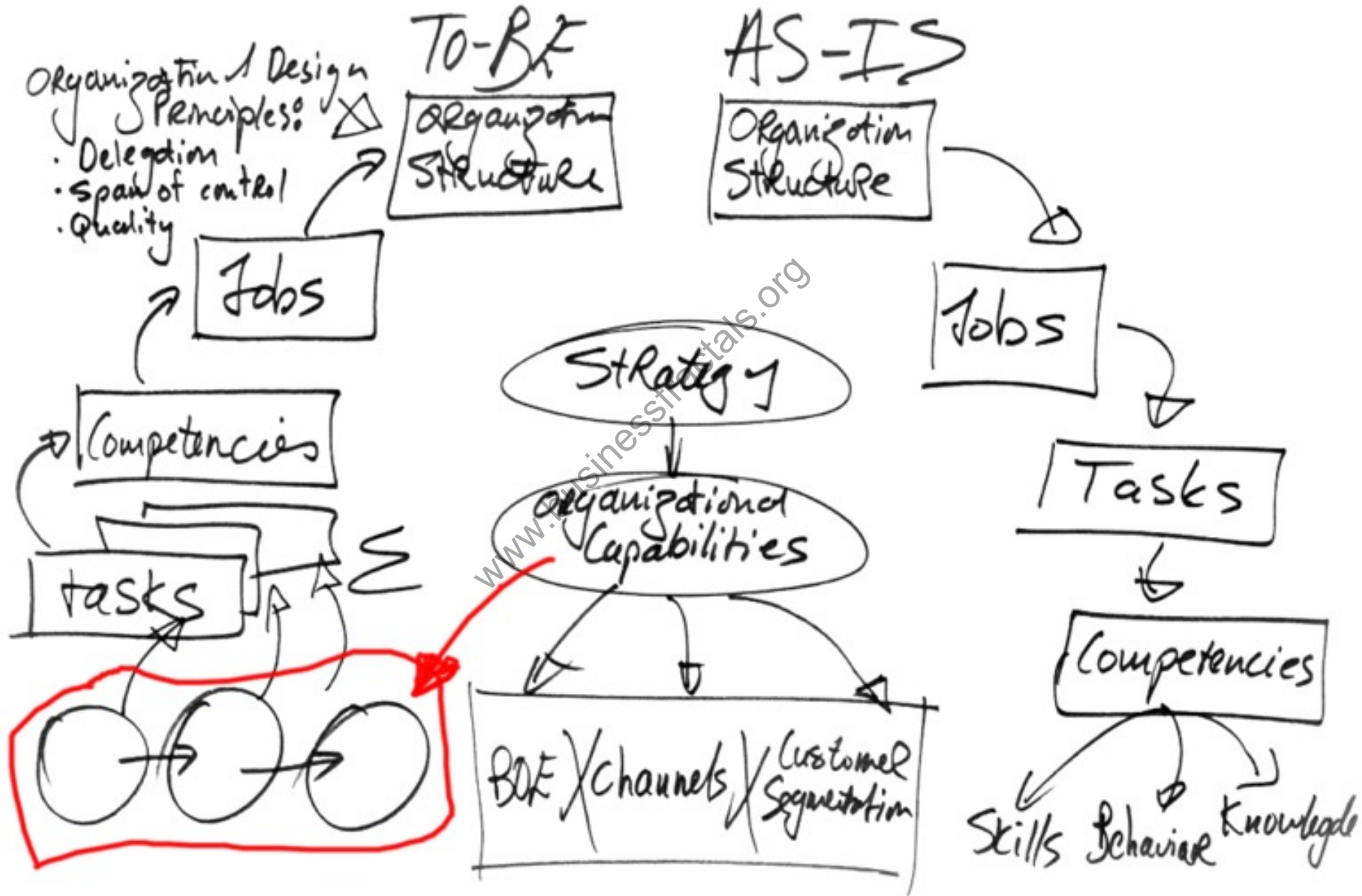




fresh eggs in the morning and a fresh new day

it's what i eat and what i do™

**Trusted.** For over 50 years, we have sought the most wholesome, quality ingredients to make your favourite McDonald's Egg McMuffin McMeal™. Exceeding safety standard requirements, we also conduct on-going tests to ensure consistent taste and quality. So you can trust any McDonald's breakfast anywhere, any time.

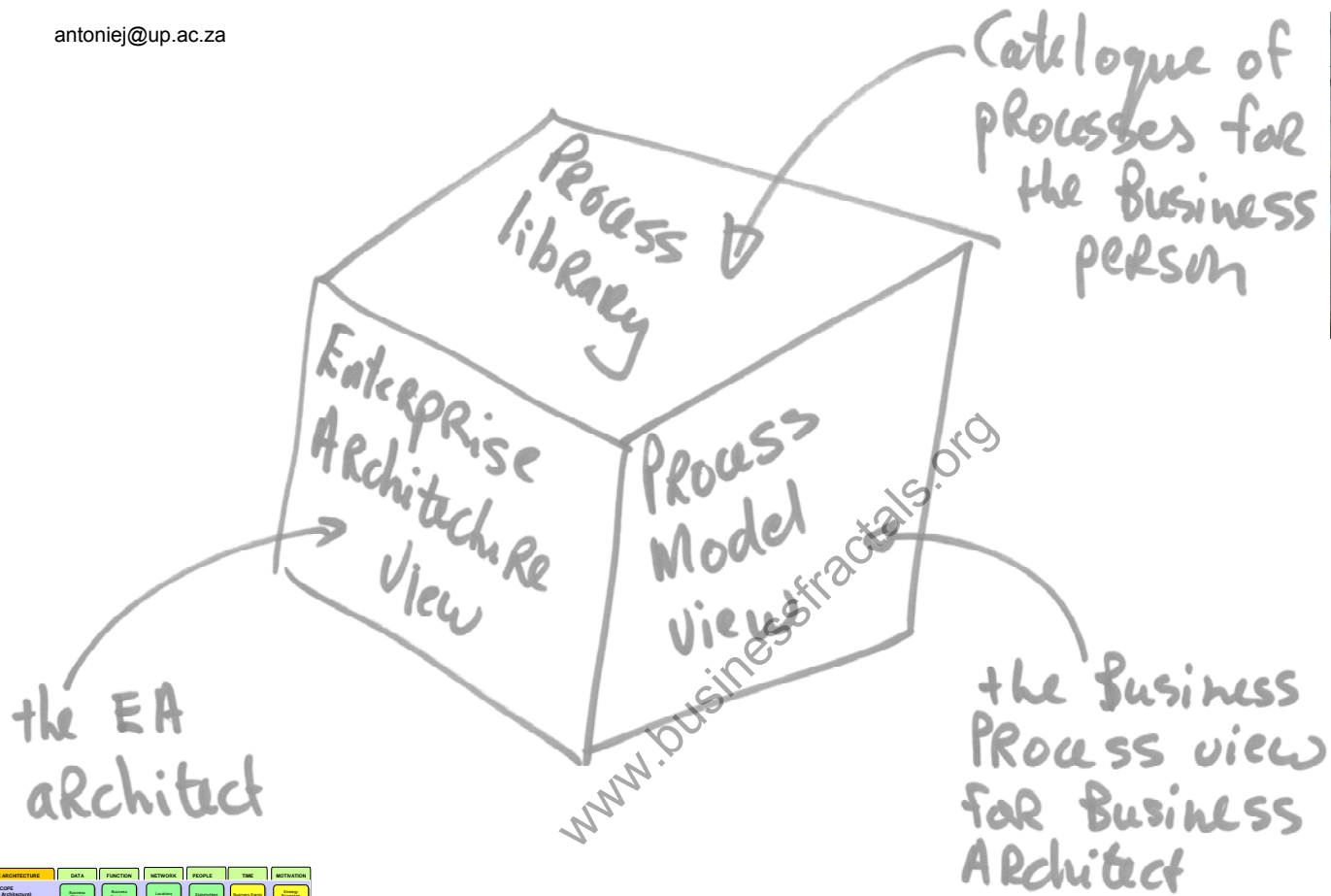




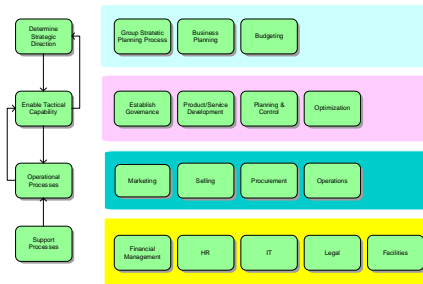
Business fractal = Function of

- \* Pattern
- \* Content
- \* Memory
- \* Volatility





| ENTERPRISE ARCHITECTURE   | DATA               | FUNCTION           | NETWORK            | PEOPLE                 | TIME          | MOTIVATION          |
|---|--------------------|--------------------|--------------------|------------------------|---------------|---------------------|
| <b>SCOPE</b><br>(Strategic Architecture)<br>Global View                               | Business Processes | Business Processes | Locations          | Organizations          | Business Time | Business Motivation |
| <b>BUSINESS MODEL</b><br>(Operational Business Architecture)<br>Year View (2-3 years) | Business Processes | Business Processes | Business Locations | Business Organizations | Business Time | Business Motivation |
| <b>SYSTEMS MODEL</b><br>(System Business Architecture)<br>Design View (3-5 years)     | Business Processes | Business Processes | Business Locations | Business Organizations | Business Time | Business Motivation |
| <b>TECHNOLOGY MODEL</b><br>(Technical Architecture)                                   | Business Processes | Business Processes | Business Locations | Business Organizations | Business Time | Business Motivation |
| <b>COMPONENT MODEL</b><br>(Component Architecture)<br>Builds                          | Business Processes | Business Processes | Business Locations | Business Organizations | Business Time | Business Motivation |
| <b>RESOURCES</b>  | Business Processes | Business Processes | Business Locations | Business Organizations | Business Time | Business Motivation |



**ENTERPRISE ARCHITECTURE**

**DATA**

**FUNCTION**

**NETWORK**

**PEOPLE**

**TIME**

**MOTIVATION**

**SCOPE**  
(Strategy Architecture)  
Owner View

Business Objects

FV

Business Functions

FV

Locations

FV

Stakeholders

FV

Business Events

PV

Strategy Processes  
(Governance)

FV

**BUSINESS MODEL**  
(Business/Process Architecture)  
User View (Requirements)

Entity Model  
(Business Rules)

Business Processes

PV

Supply Chain Processes

PV

Organisation Chart

Tactical Processes  
(Planning & Control)

PV

Business Plan

PV

**SYSTEMS MODEL**  
(Systems Architecture)  
Design View (Specifications)

Data Model

Application Architecture

FV

Distributed Systems Architecture

FV

Human Interface Architecture

FV

Master Operations Schedule

PV

Program Initiatives

**TECHNOLOGY MODEL**  
(Technical Architecture)

Physical data Model

Function Screen Objects

Systems Architecture

Human/Technology Interface

Event Requirement Planning

PV

Workbreak Structure

**COMPONENT MODEL**  
(Component Architecture)  
Builders

Data definitions

Program Libraries

Network Architecture

Security Architecture

Production Floor Control

PV

Task Package

Functional View = FV    Process View = PV

**RESOURCES**

Database Technology

Network Technology

Software Technology

Communications Technology

Process Technologies

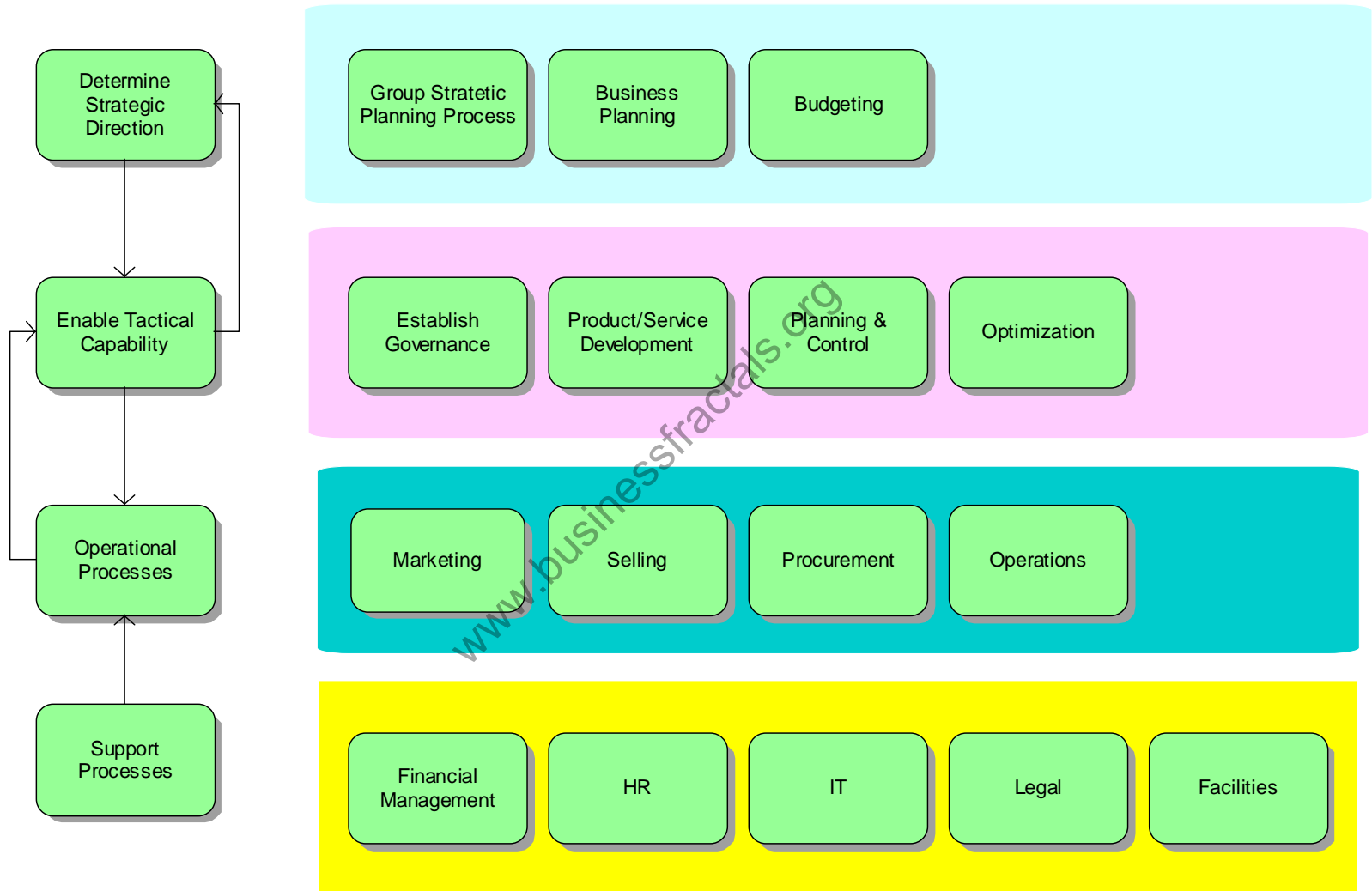
Information Processing

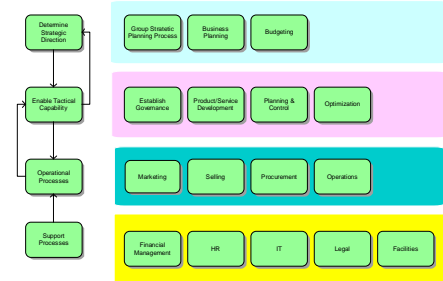
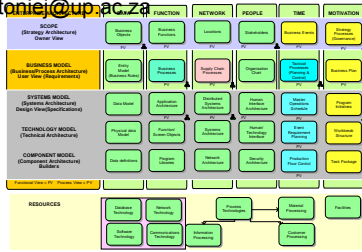
Material Processing

Customer Processing

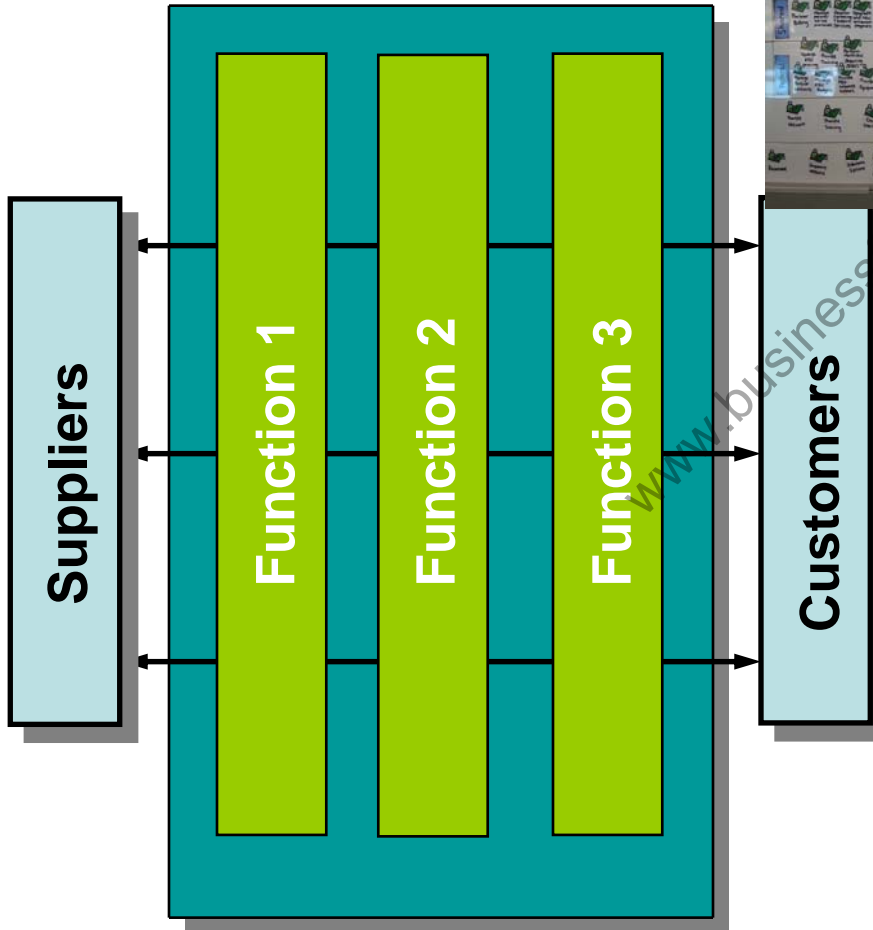
Facilities



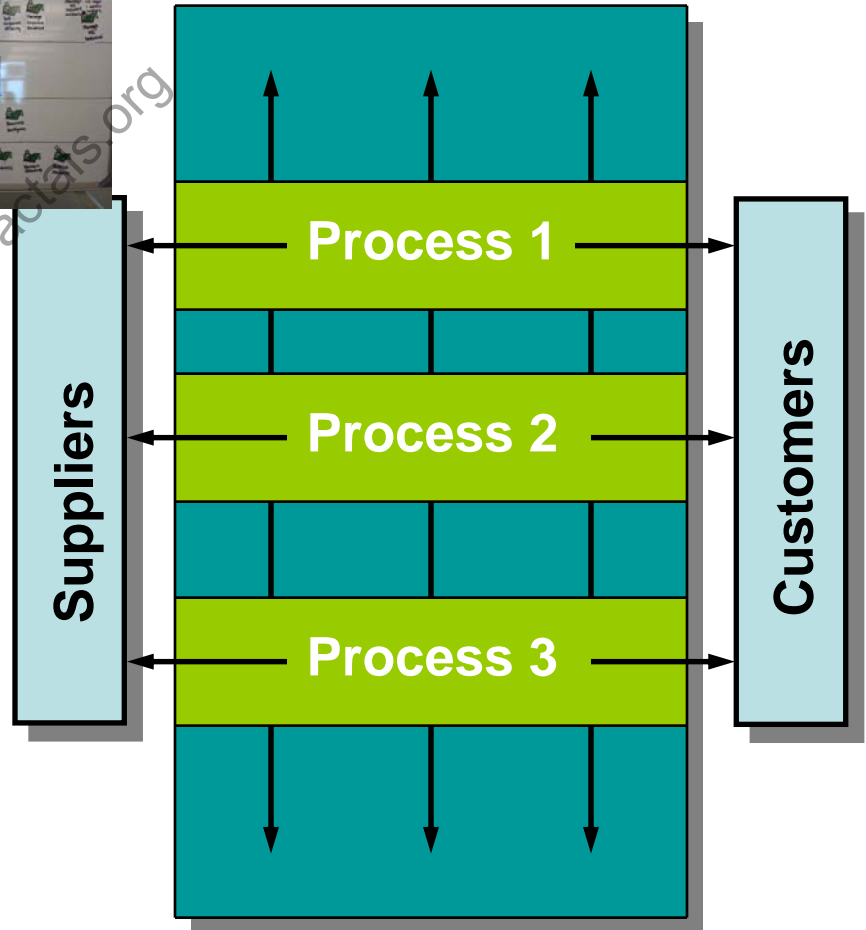




### Functional View



### Process View



Introduction - why?

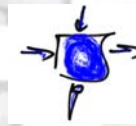
Systems thinking & Business Fractals



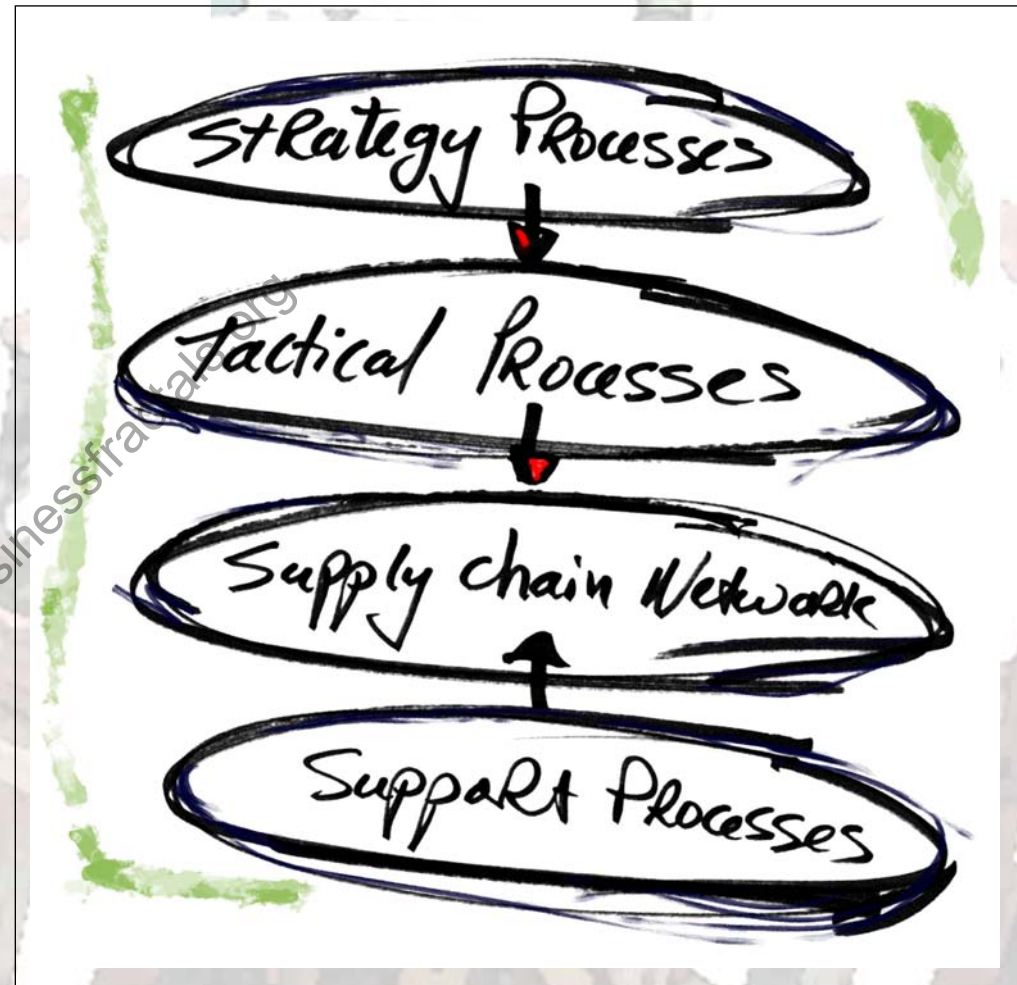
Enterprise Architecture Context

Conclusion

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The Business Process Model deals with four main process groupings. Strategy Processes main concern is to create and deliver a business plan with functional targets and objectives to Tactical Processes. Tactical Processes ensure that the required capacity exists to manage all events in the business system. This it does through the planning and control of capacity and events in the supply chain network. The Supply Chain Network Processes include all processes that move raw material to the final product and service to the customer. The fourth group, Support Processes, provides process support for the other three process groups in the business system.



# ROE

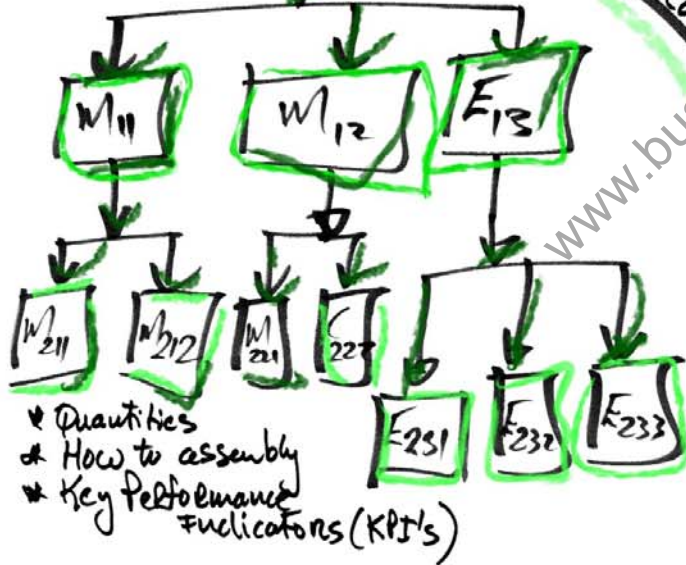
Activity

Output = **Selling Benefit**

Product/Service offering

"An Event can be material, Information or customer"

**Bill of Events**



can be of type  
can be of type  
can be of type

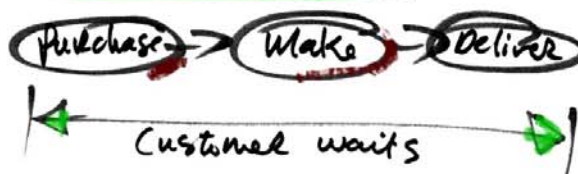
**Make to Stock**

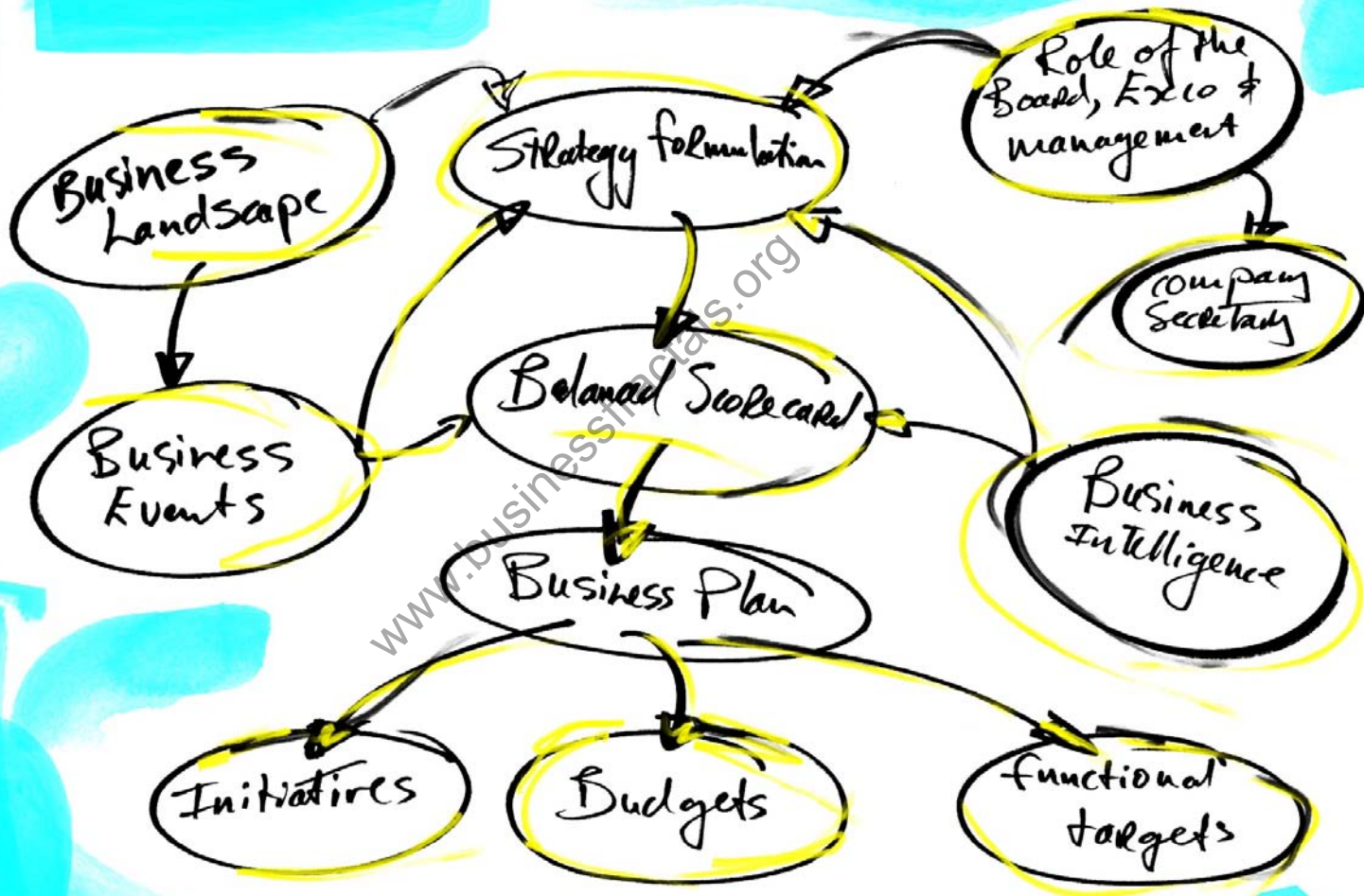


**Assemble to order**

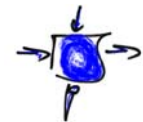
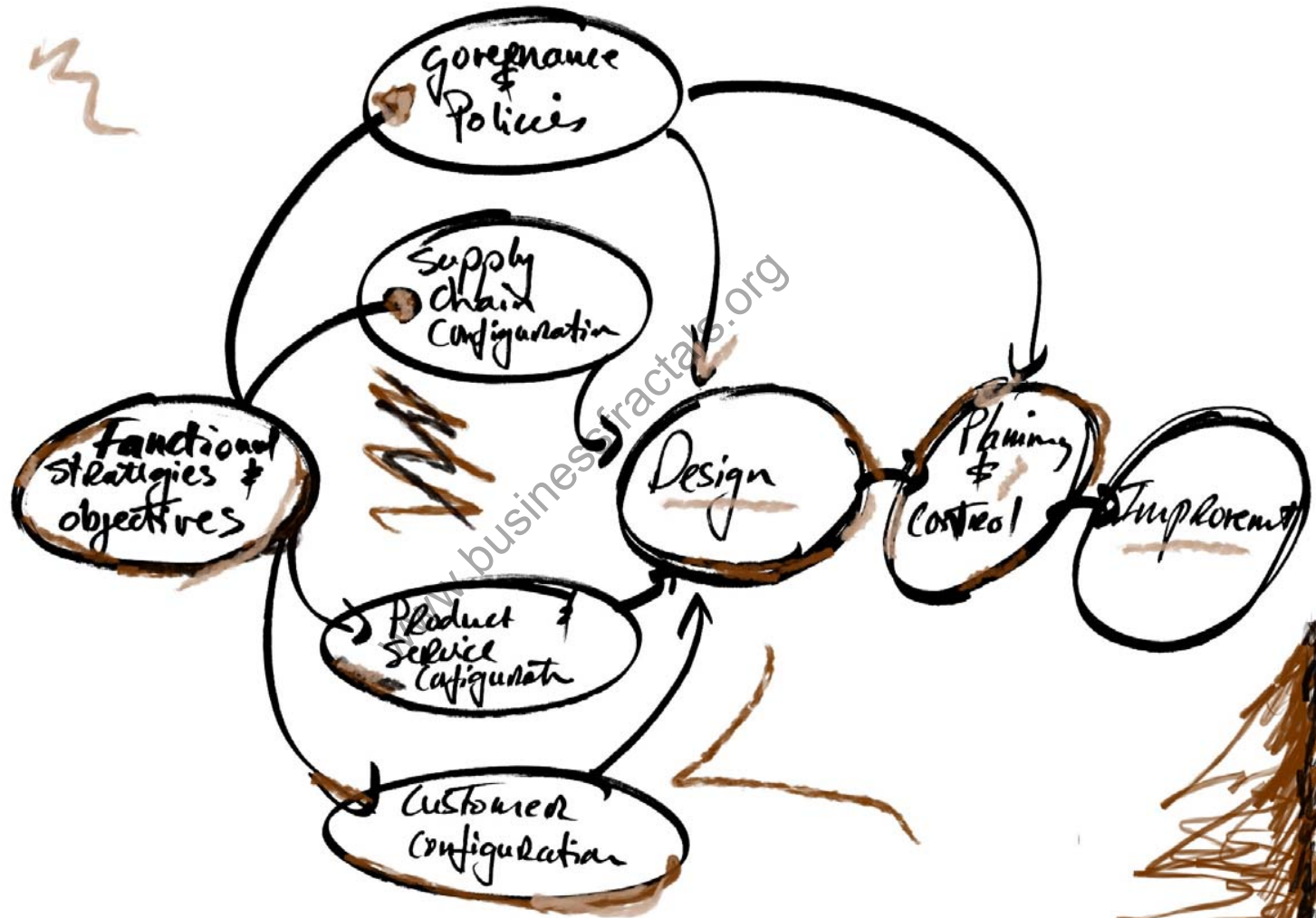


**Make to order**

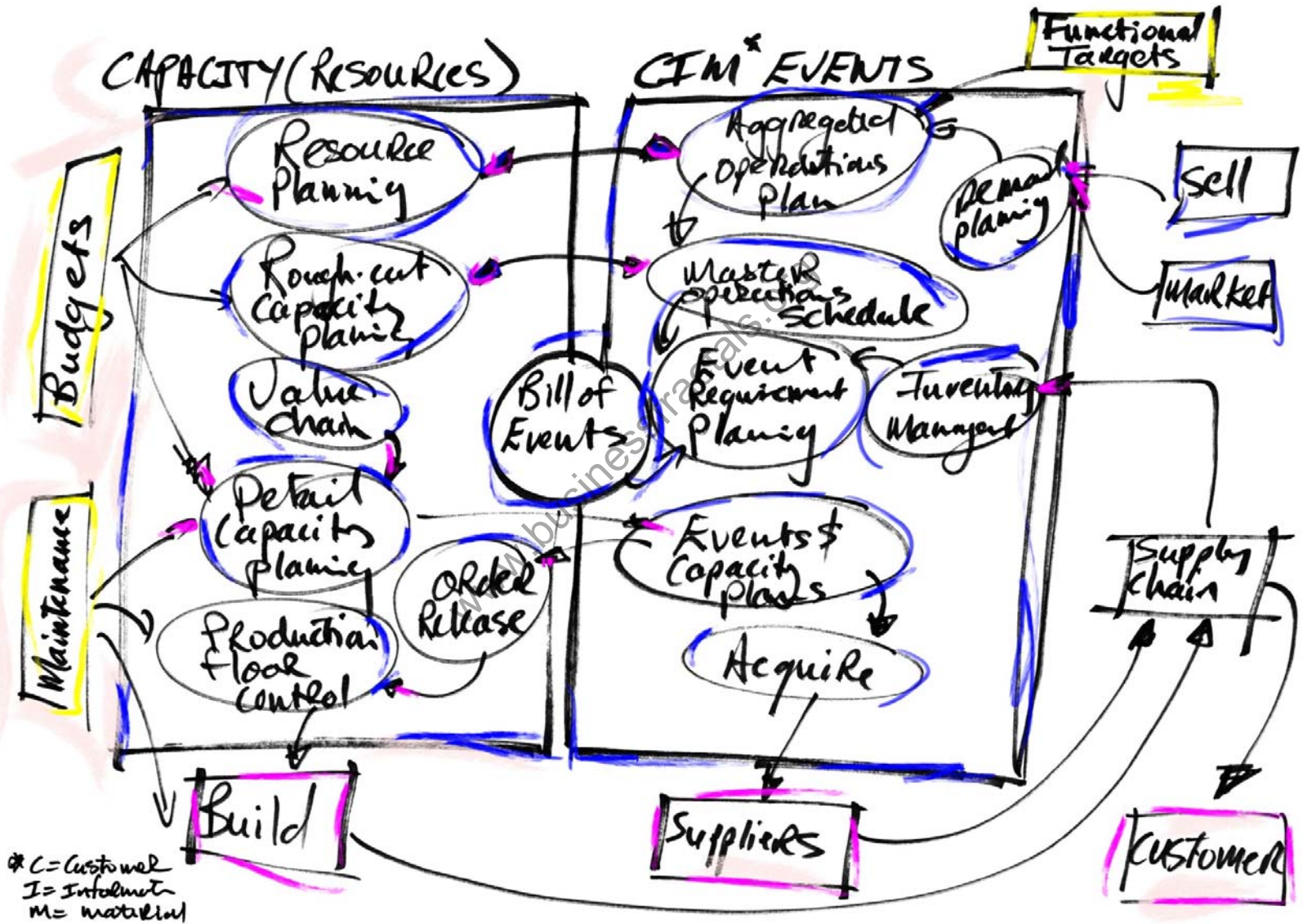








# Tactical Processes: Planning and Control





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*Antonie*

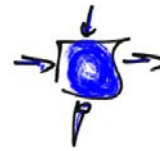
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