

SERIOUS PLANNING FOR SERIOUS RECORDS PROJECTS

some specific tools for considering multiple
dimensions of long term qualities and costs

IRMS 14th Annual Conference

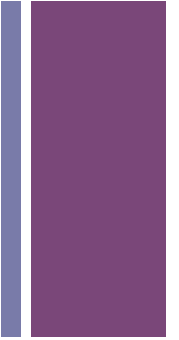
Formerly known as Records Management Society

3–5 April 2011, Hilton Brighton Metropole <http://www.irmsconference.org.uk/>

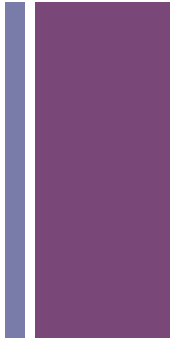


- Stakeholder identification, their values and needs

■ How many critical stakeholders do you have?



+ Your 'Stakeholders'



- Their *values* are the key to your project requirements
- The key to getting it right, the first time

+ All Real Stakeholders:



- Many (30-40) multiple stakeholders to consider in a medium sized project:
- not just 'user' and 'customer'.
- This is a Business Analyst responsibility:
 - but how well is it done in practice?
- We believe it is done badly,
 - and have constructive advice for doing it better.

+ 'Stakeholder' *My Definition*

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'Stakeholders' are:

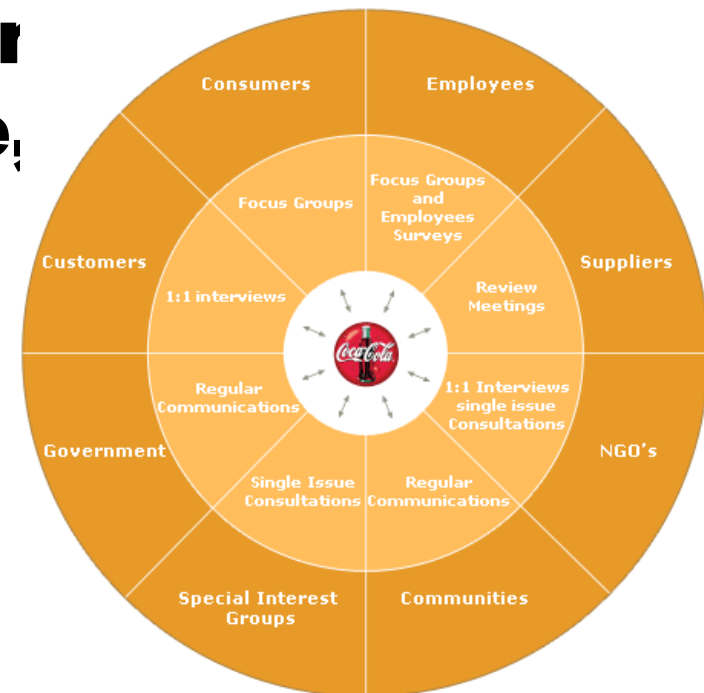
Any person, group or *thing*

**that can determine our system
degree of success or failure,**

by having an opinion about

**system performance
characteristics and**

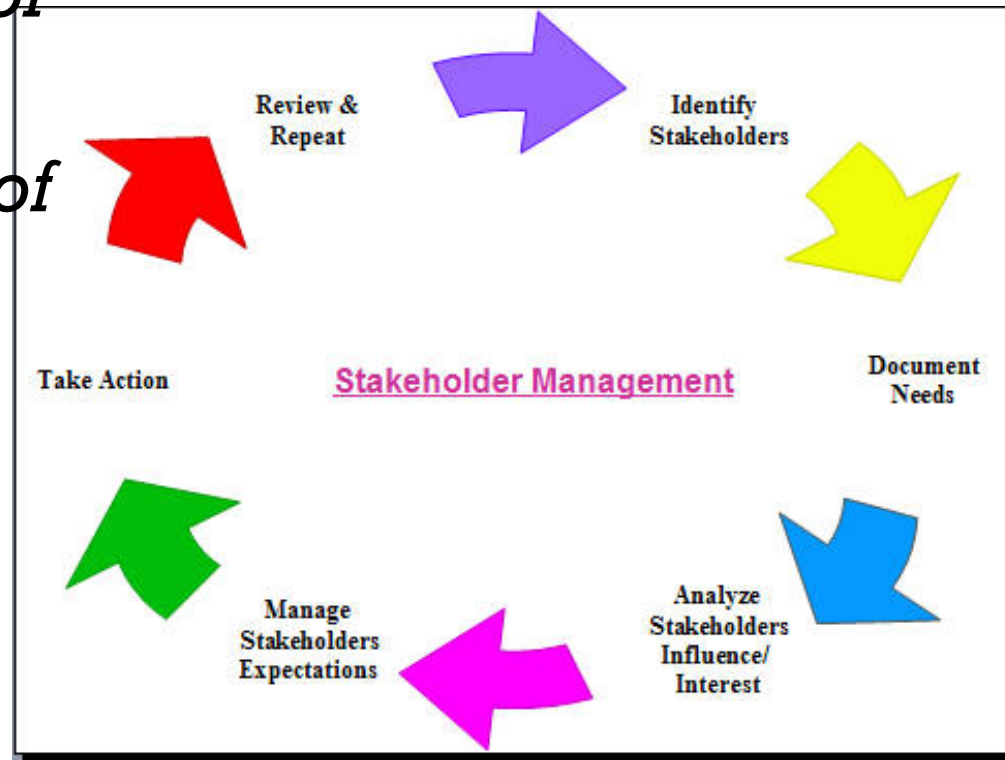
system lifecycle constraints

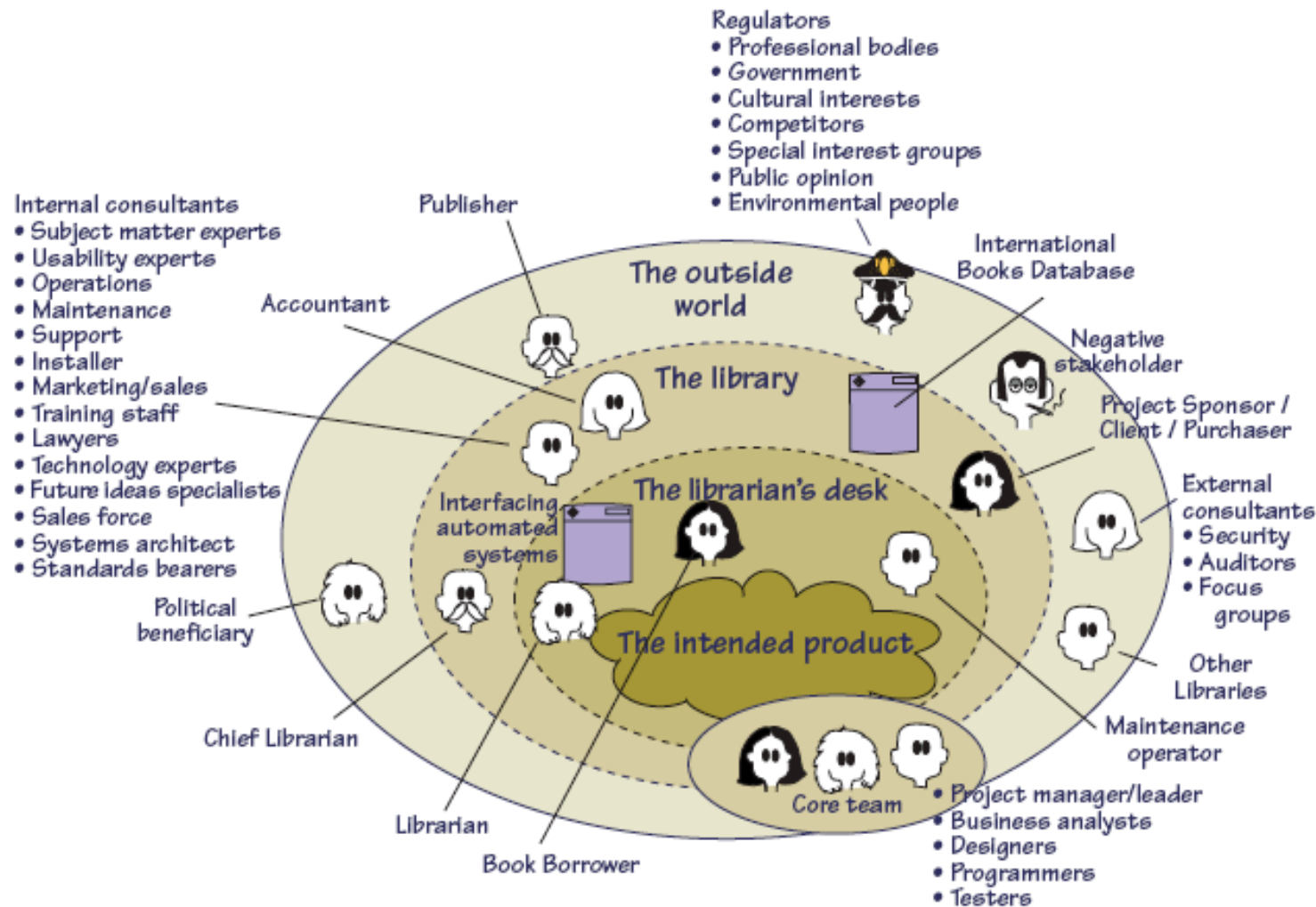


+ Stakeholder Interests

For example they might have an interest in

- 1. Setting the objectives for a process.***
- 2. Evaluating the quality of the product***
- 3. Using the product or system, even indirectly***
- 4. Avoiding problems for themselves as a result of our product or system.***





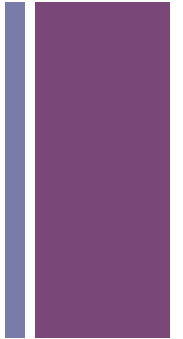
Suzanne Robertson & James Robertson

Figure 1: A Stakeholder Map for the Library Loans project

Copyright The Atlantic Systems Guild, Used with Kind Permission.



Top Level Most-Critical Requirements:



how to *quantify and clarify*
the top few

critical

improvement objectives



Words from a Lord!



Lord Kelvin's PRINCIPLE OF 'Improvement Objective QUANTIFICATION'

"In physical science the first essential step in the direction of learning any subject is to find principles of numerical reckoning and practicable methods for measuring some quality connected with it.

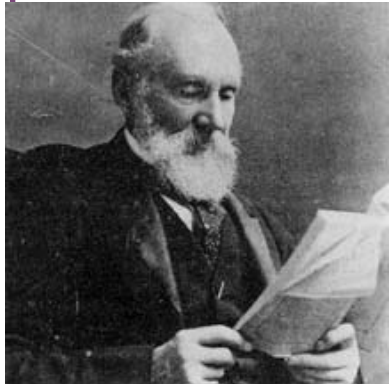
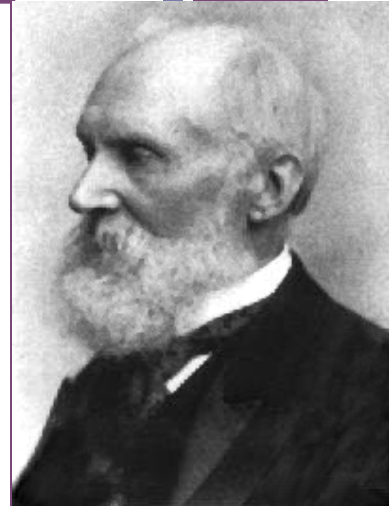
I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it;

but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind;

it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of Science, whatever the matter may be."

Lord Kelvin, 1893

From <http://zapatopi.net/kelvin/quotes.html>



+

But many people (you?)
are quite sceptical of this
idea of '**quality quantification**'

11

Cannot be done

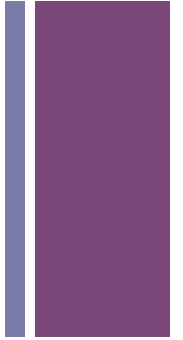
Nobody ever did it

Too difficult to do

Too difficult to 'measure'
accurately
reliably



My Dutch Students told me



“You can’t quantify

‘Love,

Tom!’”

+ Descartes *'Big Trick'*
for helping us quantify
'complex' concepts, like **'love'**

- *Break your 'objective' down into its component parts*
- *Maybe more than one level of breakdown*
- *Quantification may become more obvious*





Love Attributes:

Brainstormed By Dutch Male Engineers

(French *Women* might have a different 'model')

■ **Kissed-ness**

■ **Care**

■ **Sharing**

■ **Respect**

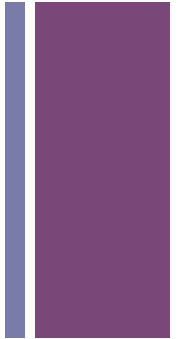
■ **Comfort**

■ **Friendship**

■ **Sex**

■ **Understanding**

■ **Trust**





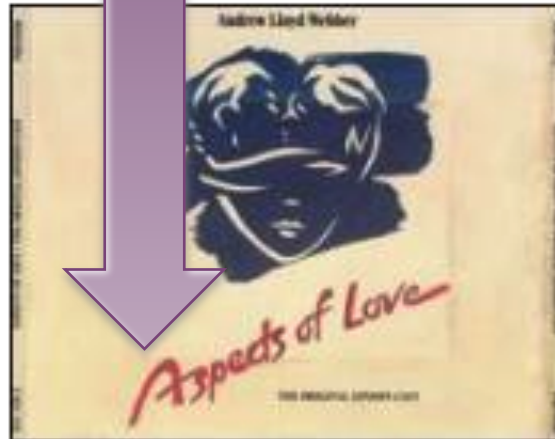
Notice that the 'Arts' have long understood that 'Love' has multidimensional attributes!

- Kissed-ness
- Care
- Sharing
- Respect
- Comfort
- Friendship
- Sex
- Understanding
- Trust

Support
Attention
Passion
Satisfaction

...

...



+ Which aspect do you guess they chose to *quantify* first?

- Kissed-ness
- Care
- Sharing
- Respect
- Comfort
- Friendship
- Sex
- Understanding
- Trust



Which aspect do you guess the *men* chose to quantify first?

■ NO! Not **THAT** one!

- Kissed-ness
- Care
- Sharing
- Respect
- Comfort
- Friendship
- **Sex**
- Understanding
- Trust

+ Which aspect do you guess they chose to quantify first?

- Kissed-ness
- Friendship
- Care
- Sex
- Sharing
- Understanding
- Respect
- Trust
- Comfort



Trust [Caroline]

■ Other aspects of Trust:

■ 1. 'Truthfulness'

2. Broken Agreements

3. Late Appointments

4. Late delivery

5. Gossiping to Others

- **Love.**Trust.Truthfulness

Ambition: No lies.

Scale:

Average **Black** lies/month from [defined sources].

Meter:

independent confidential log from sample of the defined sources.

Past Lie Level:

Past [My Old Mate, 2004] **42** <-
Bart

Goal

[My Current Mate, Year = 2005]

Past Lie Level/2

Black: Defined: Non White Lies



The British are too shy to confront ideas like 'love' and 'sex' directly

■ They use
Euphemisms

■ Like 'Camararderie'



Camaraderie (Real Case UK)

Ambition: *to maintain an exceptionally high sense of good personal feelings and co-operation amongst all staff: family atmosphere, corporate patriotism. In spite of business change and pressures.*

Scale: probability that individuals enjoy the working atmosphere so much that they would not move to another company for less than 50% pay rise.

Meter: Apparently real offer via CD-S

Past [September 2001] 60+ % <- R & CD

Goal [Mid 2002] 10%, [End 2002] <1% <- R & CD

Rationale:

maintain staff number, and morale as core of business and business predictability for customers.

+ My 'Christian' Friend

- Lawrence Day. Seattle Washington
 - Divinity Doctor (hobby)
 - Lay Preacher
 - President <Christian Fellowship Association> (USA)
 - Web business processes, Boeing
- “Love (a central Christian value) is not quantifiable”
 - Not in Bible
 - Little guidance from God and Jesus about Love Engineering



+ Silence for 6 weeks

- But then an email appeared from Lawrence
- “Humble apologies Tom
 - But, you were right.....

+ Love: Biblical Dimensions ←- Lawrence Day, Boeing

“The biblical citation (Book of First Corinthians) I included gives the quantification of the term "love" (agape in Greek). The ‘quantification’ for love would be as follows: ...”

----->



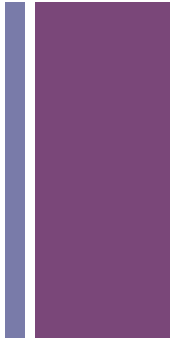
A person who loves acts the following way toward the person being loved:

- 1. suffereth long**
- 2. is kind**
- 3. envieth not**
- 4. vaunteth not itself**
- 5. is not puffed up**
- 6. Doth not behave itself unseemly**
- 7. seeketh not her own**
- 8. is not easily provoked**
- 9. thinketh no evil**
- 10. Rejoiceth not in iniquity (=an unjust act)**
- 11. rejoiceth in the truth**
- 12. Beareth all things**
- 13. believeth all things**
- 14. hopeth all things**
- 15. endureth all things**
- 16. never faileth**



A Paper on 'Love Quantified'

http://www.gilb.com/tiki-download_file.php?fileId=335



Love Quantified

By:

Lawrence E. Day

for

Dr. Larry Beebe

And

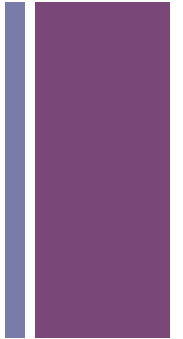
Dr. Raghu Korrapati

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Love Quantified	
Table of Contents.....	
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Quality Transformed to Quantity	
Knowledge of a Personal Quality	
Desirements (Quality) Turned Into Requirements (Quantity).....	
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Examples of Objectives (ICO)

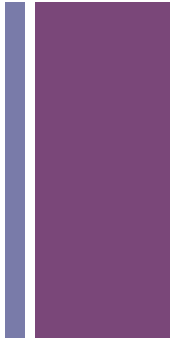


- Authoritative Arbiter (Info Rights)
- High Quality Outcomes
- Relevant Outcomes
- Timely Outcomes
- Responsive Approach
- Outward-looking Approach
- Committed Staff
- High Performing Staff
- Good Regulation Model
- Great Place to Work
- Great Place to Develop



Might these be clarified, quantified?

- Authoritative Arbiter (Info Rights)
- High Quality Outcomes
- Relevant Outcomes
- Timely Outcomes
- Responsive Approach
- Outward-looking Approach
- Committed Staff
- High Performing Staff
- Good Regulation Model
- Great Place to Work
- Great Place to Develop



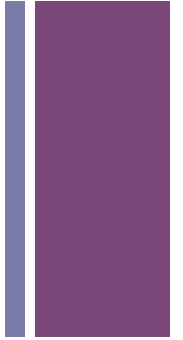
+ So what kind of quality improvements might Records Stakeholders be interested in?

- ❖ Theft Security
- ❖ Damage Robustness
- ❖ Index Completeness
- ❖ Accessibility
- ❖ Maintenance Costs
- ❖ Transportability





How might we define these better as requirements or objectives?



- Theft Security:

- Ambition

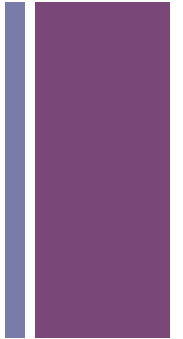
- Scale

- Past

- Goal



How might we define these better as requirements or objectives?



■ Theft Security:

■ **Ambition: A large increase in theft security without cost increase**

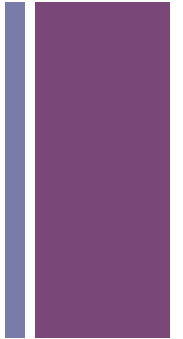
■ Scale

■ Past

■ Goal



How might we define these better as requirements or objectives?



■ Theft Security:

■ Ambition: *A large increase in theft security without cost increase*

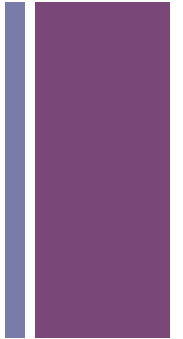
■ Scale: ***the probability of successful theft of defined [Items] by defined [Thieves]***

■ Past

■ Goal



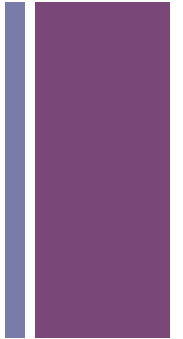
How might we define these better as requirements or objectives?



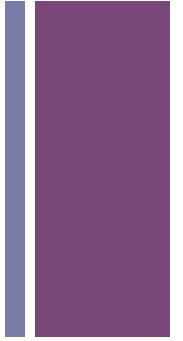
- Theft Security:
 - Ambition: *A large increase in theft security without cost increase*
 - Scale: the probability of successful theft of defined [Items] by defined [Thieves]
 - Past **[2011, Items = Highest Value, Thieves = Organized Bands]** **50%**
 - Goal



How might we define these better as requirements or objectives?



- Theft Security:
 - *Ambition: A large increase in theft security without cost increase*
 - Scale: the probability of successful theft of defined [Items] by defined [Thieves]
 - Past [2011, Items = Highest Value, Thieves = Organized Bands] 50%
 - **Goal [2012, Items = Highest Value, Thieves = Organized Bands] < 1%**



Clarity

Is not this objective a
lot clearer than
the initial statement?

+ Some other “Scale” Examples?

Theft Security: Scale: **the probability of successful theft of defined [Items] by defined [Thieves]**

Damage Robustness: Scale: **probability of defined [Damage] to defined [Items] using defined [Shipping] and defined [Packaging]**

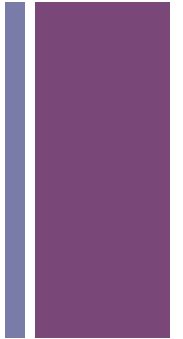
Index Completeness: Scale: **the % of defined [Concepts] for defined [Items] found by defined [Index]**

Accessibility: Scale: **time needed to access Original Version by defined [Curator] in defined [Location]**

Maintenance Costs: Scale: **Annual Cost as % Maintenance Budget for defined [Items]**

Transportability: Scale: **Total Cost of Safe Return Transport for defined [Items] to defined [Institutions]**

+ OK so that was a bit much at once



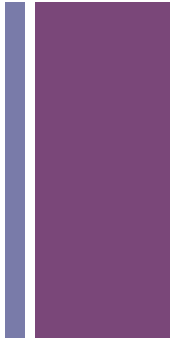
But

My point is
that there is *some* reasonable
and useful quantification for
any critical objective you can
list



How do 'find' a quantification idea?

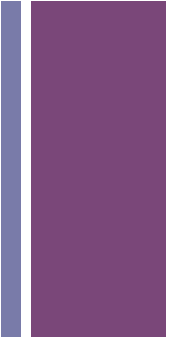
- Use your domain knowledge, and common sense, and don't give up, ever
 - Experts find some ideas in a few minutes
 - Better ideas evolve with experience and reflection
- Google it
 - Somebody has already solved the problem!
- Oh yes, don't forget Descartes' Trick.
 - Break it down to a list or set of factors first.





- Evaluating alternative strategies for satisfying objectives:

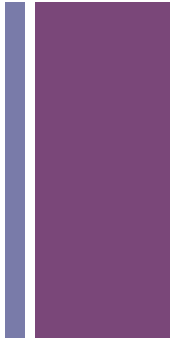
- a quantified approach, the *Impact Estimation Table*





Impact Estimation is - a tool

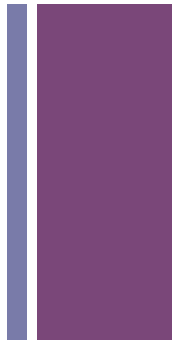
- a way to estimate the impact of any alternative solution,
 - on your own quantified objectives
- you can evaluate the stuff
 - on the stands in the next room!
- but, a *prerequisite* is that you have quantified your *own* objectives
 - If you do not clearly now what you want, and have agreed it with others
 - It is difficult to judge any solution.





How we might do it so well:

Solutions



You *can* compare apples and oranges

Objectives

<- Alternative Strategy Tags ->



<u>Eater Acceptance</u> "50->80%"	70%	85%			
<u>Pesticide%</u> "5%->1%"	50%	100%			
<u>Shelf-Life</u> "1 week->1 mo."	70%	200%			
<u>Vitamin C</u> "50mg->100mg"	50%	80%			
<u>Carbohydrate</u> "100 mg->200mg"	20%	5%			
Benefit Sum	260%	470%			
<u>Relative-Cost</u> Local currency	0.50	3.00			
Cost Sum	0.50	3.00			
Benefit to Cost Ratio	5.2	1.57			

"Evidence"
for these numbers
is, of course, available
on a separate sheet
(but not here now)

Impact Estimation: A Graphical View of the Principle

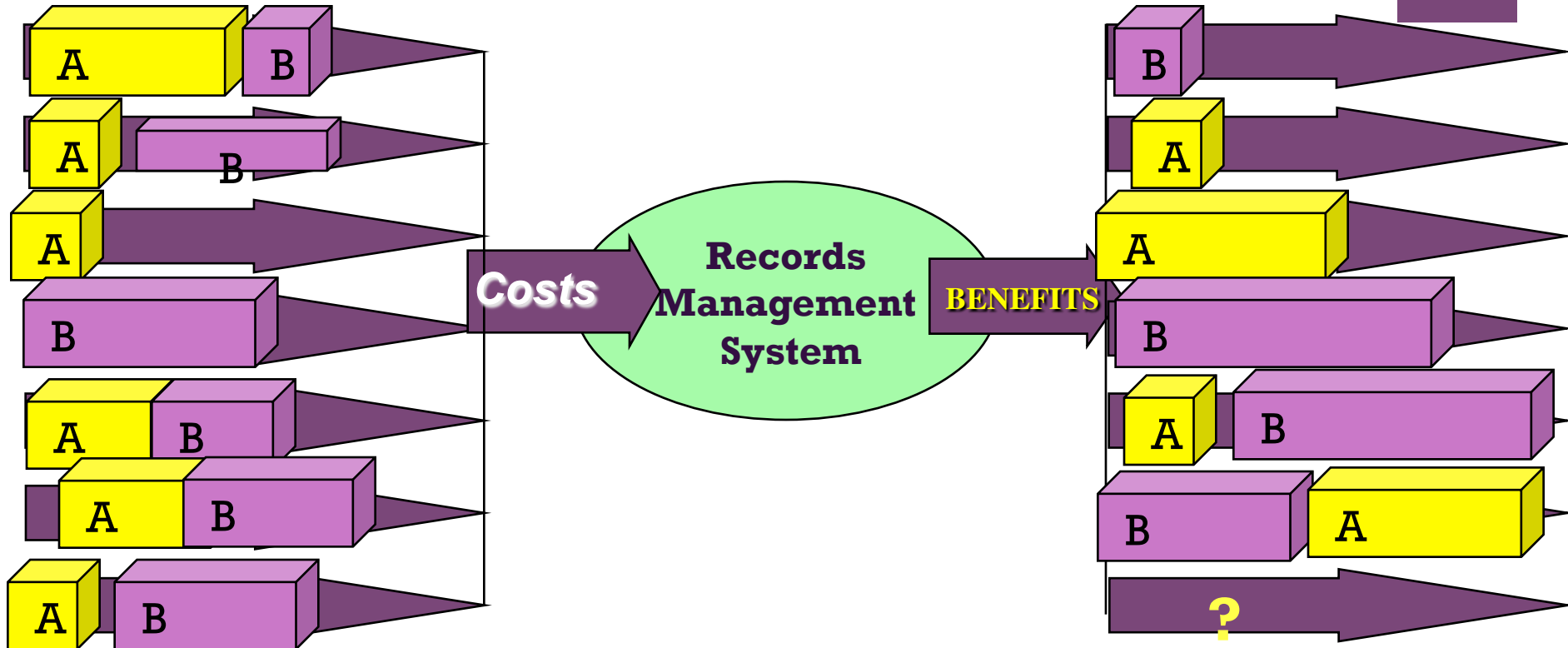


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The
candidates

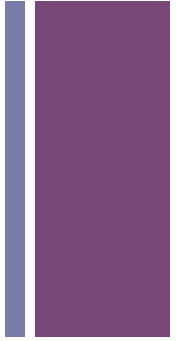
Design Idea
A

Design Idea B





The evolutionary approach

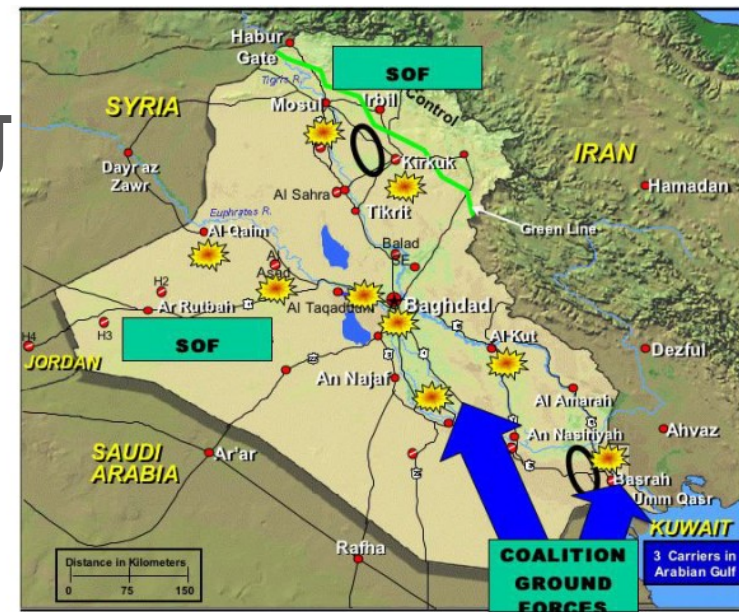


- to estimating and controlling costs,
- and delivering benefits and value.

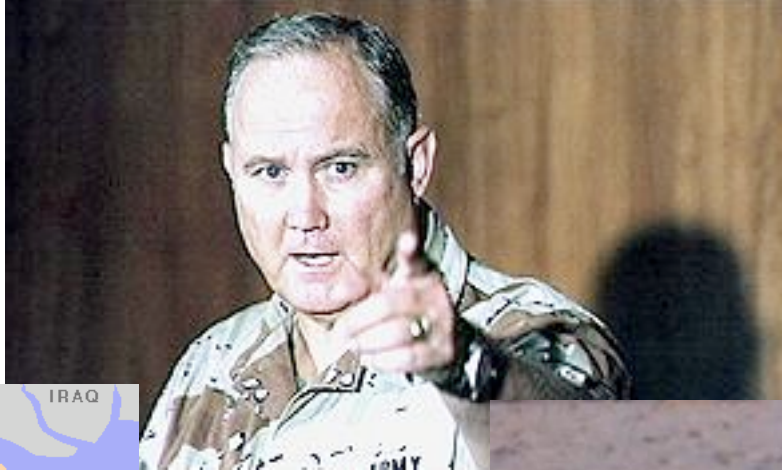


And Now A True 'War Story'

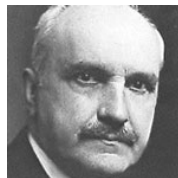
- About Why A Bad Records Management System Requirements
 - Can lose a war in Iraq
 - Or at least make it drag on for years



+ The Persinscom US Army Personnel 'Records Management System'



**"He who does not learn from history
Is doomed to repeat it" (Santayana)**



**A President who understood that
'a bird in the hand is worth two in the Bush'**

+ Our Evo Planning Week at DoD



US Army Example: PERSINSCOM

A detailed table with multiple columns and rows, likely representing an impact estimation table for various objectives and strategies. The table is yellow and contains numerical data.

Requirements
and Architecture

Requirements
Design
Quality Control
(Construction/Acquisition)
Testing
Integration
Delivery -> Stakeholder
Measure & Study Results



- **Monday**
 - Define top Ten critical objectives, quantitatively
 - Agree that these are the main points of the effort/project
- **Tuesday**
 - Define roughly the top ten most powerful strategies,
 - for enabling us to reach our Goals on Time
- **Wednesday**
 - Make an Impact Estimation Table for Objectives/Strategies
 - **Sanity Test:** do we seem to have enough powerful strategies to get to our Goals, with a reasonable safety margin?
- **Thursday**
 - Divide into rough delivery steps (annual, quarterly)
 - Derive a delivery step for 'Next Week'
- **Friday**
 - Present these plans to approval manager (Brigadier General Pellicci)
 - get approval to deliver next week



US Army Example: PERSINSCOM: Personnel System

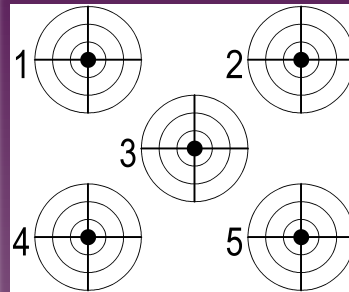


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STRATEGIES →

OBJECTIVES

Customer Service
? → 0 Violation of agreement
Availability
90% → 99.5% Up time
Usability
200 → 60 Requests by Users
Responsiveness
70% → ECP's on time
Productivity
3:1 Return on Investment
Morale
72 → 60 per mo. Sick Leave
Data Integrity
88% → 97% Data Error %
Technology Adaptability
75% Adapt Technology
Requirement Adaptability
? → 2.6% Adapt to Change
Resource Adaptability
2.1M → ? Resource Change
Cost Reduction
FADS → 30% Total Funding



Monday
← The Top Ten
Critical
Objectives
Were decided



Sample of Objectives/Strategy definitions

US Army Example: PERSINSCOM: Personnel System



■ *Example of one of the Objectives:*

Customer Service:

Type: Critical Top level Systems Objective

Gist: Improve customer perception of quality of service provided.

Scale: Violations of Customer Agreement per Month.

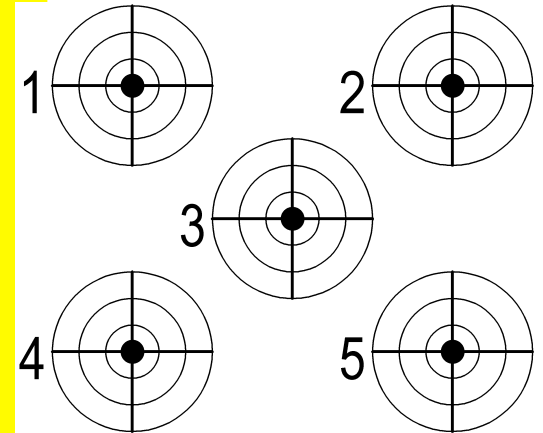
Meter: Log of Violations.

Past [Last Year] Unknown Number ← State of PERSCOM Management Review



Record [NARDAC] 0 ? ← NARDAC Reports Last Year

Fail : <must be better than Past, Unknown number> ← CG

Goal [This Year, PERSINCOM] 0 "Go for the Record" ← Group SWAG





STRATEGIES → OBJECTIVES	Technology Investment	Business Practices	People	Empowerment	Principles of IMA Management	Business Process Re-engineering	SUM
Customer Service ? → 0 Violation of agreement	<div>  <p> Tuesday The Top Ten Critical Strategies For reaching the ← objectives, were decided </p>  </div>						
Availability 90% → 99.5% Up time							
Usability 200 → 60 Requests by Users							
Responsiveness 70% → ECP's on time							
Productivity 3:1 Return on Investment							
Morale 72 → 60 per mo. Sick Leave							
Data Integrity 88% → 97% Data Error %							
Technology Adaptability 75% Adapt Technology							
Requirement Adaptability ? → 2.6% Adapt to Change							
Resource Adaptability 2.1M → ? Resource Change							
Cost Reduction FADS → 30% Total Funding							



Sample of Objectives/Strategy definitions

US Army Example: PERSINSCOM: Personnel System



A Strategy (Top Level of Detail)

Technology Investment:

Gist: Exploit investment in high return technology.



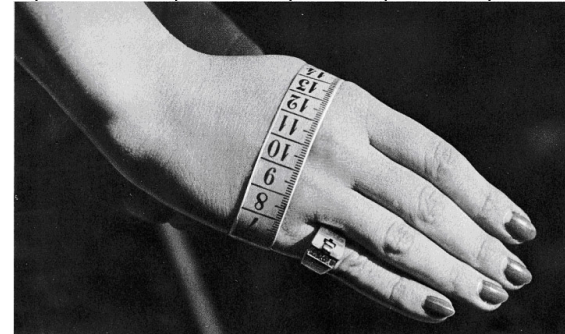
Impacts: productivity, customer service and conserves resources.
... (much more detail)

+Wednesday:

Day 3 of 5 of 'Feasibility Study

- **We made a rough evaluation**
 - **of how powerful our strategies might be**
 - **in relation to our objectives**
- **Impact Estimation Table**
 - **0% Neutral, no \pm impact**
 - **100% Gets us to Goal level on time**
 - **50% Gets us half way to Goal at deadline**
 - **-10% has 10% negative side effect**

STRATEGIES → OBJECTIVES	Technology Investment	Business Practices	People	Empowerment	Principles of IMA Management	Business Process Re-engineering	SUM
Customer Service ? → 0 Violation of agreement	50%	10%	5%	5%	5%	60%	185%
Availability 90% → 99.5% Up time	50%	5%	5-10%	0	0	200%	265%
Usability 200 → 60 Requests by Users	50%	5-10%	5-10%	50%	0	10%	130%
Responsiveness 70% → ECP's on time	50%	10%	90%	25%	5%	50%	180%
Productivity 3:1 Return on Investment	45%	60%	10%	35%	100%	53%	303%
Morale 72 → 60 per mo. Sick Leave	50%	5%	75%	45%	15%	61%	251%
Data Integrity 88% → 97% Data Error %	42%	10%	25%	5%	70%	25%	177%
Technology Adaptability 75% Adapt Technology	5%	30%	5%	60%	0	60%	160%
Requirement Adaptability ? → 2.6% Adapt to Change	80%	20%	60%	75%	20%	5%	260%
Resource Adaptability 2.1M → ? Resource Change	10%	80%	5%	50%	50%	75%	270%
Cost Reduction FADS → 30% Total Funding	50%	40%	10%	40%	50%	50%	240%
SUM IMPACT FOR EACH SOLUTION	482%	280%	305%	390%	315%	649%	
Money % of total budget	15%	4%	3%	4%	6%	4%	
Time % total work months/year	15%	15%	20%	10%	20%	18%	
SUM RESOURCES	30	19	23	14	26	22	
BENEFIT/RESOURCES RATIO	16:1	14:7	13:3	27:9	12:1	29:5	



MEASURING HAND FOR GLOVE SIZE

DoDef. Persinscom Impact Estimation Table:



MEANS

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ENDS	<i>Technology Investment</i>	<i>Business Practices</i>	<i>People</i>	<i>Empowerment</i>	<i>Principles of IMA Management</i>	<i>Business Process Re-engineering</i>	<i>Sum Requirements</i>
Customer Service ? <-> 0 Violation of agreement	50%	10%	5%	5%	5%	60%	185%
Availability 90% <-> 99.5% Up time	50%	5%	5-10%	0%	0%	200%	265%
Usability 200 <-> 60 Requests by Users	50%	5-10%	5-10%	50%	0%	10%	130%
Responsiveness 70% <-> ECP's on time	50%	10%	90%	25%	5%	50%	180%
Productivity 3:1 Return on Investment	45%	Means → Ends Impacts 100% = Goal level on Time				53%	303%
Morale 72 <-> 60 per month on Sick Leave	50%					61%	251%
Data Integrity 88% <-> 97% Data Error %	42%					25%	177%
Technology Adaptability 75% Adapt Technology	5%					60%	160%
Requirement Adaptability ? <-> 2.6% Adapt to Change	80%	20%	60%	75%	20%	5%	260%
Resource Adaptability 2.1M <-> ? Resource Change	10%	80%	5%	50%	50%	75%	270%
Cost Reduction FADS <-> 30% Total Funding	50%	40%	10%	40%	50%	50%	240%
<i>Sum of Performance</i>	<i>482%</i>	<i>280%</i>	<i>305%</i>	<i>390%</i>	<i>315%</i>	<i>649%</i>	
Money % of total budget	15%	4%	3%	4%	6%	4%	36%
Time % total work months/year	15%	15%	20%	10%	20%	18%	98%
<i>Sum of Costs</i>	<i>30</i>	<i>19</i>	<i>23</i>	<i>14</i>	<i>26</i>	<i>22</i>	
<i>Performance to Cost Ratio</i>	<i>16:1</i>	<i>14:7</i>	<i>13:3</i>	<i>27:9</i>	<i>12:1</i>	<i>29:5</i>	

+ Thursday: Day 4 of 5 of 'Feasibility Study'

- We looked for a way to deliver some stakeholder results, next week, using

■ 1 1 1 1 1 1 ('Unity' Method)

- 1% increase, at least
- 1 stakeholder, at least
- 1 Objective (Ends)
- 1 Strategy (Means)
- 1 week value delivery
- 1 Function ('inquiry')

STRATEGIES → OBJECTIVES	Technology Investment	Business Practices	People	Empow- erment	Principles of IMA Management	Business Process Re- engineering	SUM
Customer Service ? → 0 Violation of agreement	50%	10%	5%	5%	5%	60%	185%
Availability 90% → 99.5% Up time	50%	5%	5-10%	0	0	200%	265%
Usability 200 → 60 Requests by Users	50%	5-10%	5-10%	50%	0	10%	130%
Responsiveness 70% → ECP's on time	50%	10%	90%	25%	5%	50%	180%
Productivity 3:1 Return on Investment	45%	60%	10%	35%	100%	53%	303%
Morale 72 → 60 per mo. Sick Leave	50%	5%	75%	45%	15%	61%	251%
Data Integrity 88% → 97% Data Error %	42%	10%	25%	5%	70%	25%	177%
Technology Adaptability 75% Adapt Technology	5%	30%	5%	60%	0	60%	160%
Requirement Adaptability ? → 2.6% Adapt to Change	80%	20%	60%	75%	20%	5%	260%
Resource Adaptability 2.1M → ? Resource Change	10%	80%	5%	50%	50%	75%	270%
Cost Reduction FADS → 30% Total Funding	50%	40%	10%	40%	50%	50%	240%
SUM IMPACT FOR EACH SOLUTION	482%	280%	305%	390%	315%	649%	
Money % of total budget	15%	4%	3%	4%	6%	4%	
Time % total work months/year	15%	15%	20%	10%	20%	18%	
SUM RESOURCES	30	19	23	14	26	22	
BENEFIT/RESOURCES RATIO	16:1	14:7	13:3	27:9	12:1	29:5	



+ Next weeks Evo Step??

- **“You won’t believe we never thought of this, Tom!”**
- **The step:**
 - **When the Top General Signs in**
 - **Move him to the head of the queue**
 - **Of all people inquiring on the system.**





*UNITED STATES ARMY
PERSONNEL INFORMATION
SYSTEMS COMMAND*



CERTIFICATE of APPRECIATION

is awarded to

MR. TOM GILB

for

SELFLESS AND DEDICATED SERVICE IN SUPPORT OF THE PERSONNEL INFORMATION SYSTEMS COMMAND. AS A MANAGEMENT CONSULTANT IN RESULT DELIVERY PLANNING, HIS PATRIOTISM, PROFESSIONAL COMPETENCE AND PERSONAL SACRIFICES ARE HIGHLY COMMENDABLE. TOM GILB'S DEDICATION AND THE EXCEPTIONAL MANNER IN WHICH HE PERFORMED HIS DUTIES HAD A DIRECT AND SIGNIFICANT IMPACT ON PERSINSCOM'S MISSION. HIS OUTSTANDING CONTRIBUTIONS AND DISTINGUISHED SERVICE REFLECT GREAT CREDIT ON HIM AND THE UNITED STATES ARMY. CONGRATULATIONS FOR A JOB WELL DONE.

30 AUGUST 1991

Personnel Information Systems Command

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Commanding

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for more detail and these slides

