

SCAF Workshop

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“Estimating for partnering and service provision”

Levering the Balanced Scorecard

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Context

- Estimating for Partnering and Services requires the cost estimator to go beyond Product Cost Estimating.
 - The range of solution options explodes
 - The subtlety of cost drivers and benefits increases
 - Trade-offs between options require more than just a cost balance
- We need to compare the real **Value** of the different options

Value

- Everyone understands value, but very few can explain it.
- We all make value judgements all the time, any decision we make is a value judgement
- Most of the time, our instinct or intuition is sufficient to make value judgements:
 - Most of the time we only have ourselves to please
 - The value implications are mostly trivial or very personal
 - We often need to make instant judgements
- Sometimes we have to take these judgements more seriously:
 - When we are accountable to others for our decisions
 - When the value implications are more significant
 - When we have time to think about it
- This is when we often go wrong...

Problems with Value Judgements

- Definition of Value:
 - Value for Money
 - Often confused with “a fair price for goods and services”
 - Cost/Input/Effort \neq Value
 - Intrinsic Value
 - Economists like to talk about intrinsic and instrumental value, but we have known since Aristotle that ultimately all value is instrumental, i.e. only of value for its contribution to something else
 - Gold may have intrinsic market value, but it was of no value to Midas
 - Water is priceless to a man dying of thirst in a lifeboat adrift on the open ocean, but water is worthless to a man drowning in the sea
 - Universal Value
 - Emanuel Kant described a system of universal values, or moral laws, that should govern human behaviour. But history has confounded attempts to find laws that can pass his test of universality.

Value is the contribution that an individual perceives that something can make towards their own objectives or goals in the given context and with their own knowledge and assumptions

Definition of Value

Value is the contribution that an individual perceives that something can make towards their own objectives or goals in the given context and with their own knowledge and assumptions

- All Value is instrumental towards something else
 - The meaning of life, the universe and everything is whatever meaning we choose to give it, otherwise it is just the relentless ticking of the universal entropy clock
- All Value is subjective
 - “beauty is in the eye of the beholder”
- All Value is contextual
 - Are you drowning or dying of thirst?
 - Peacetime or wartime?
 - How long do you think you might have to live?
- Value can only be judged absolutely in retrospect
 - Hindsight is 20:20
 - Could I have got a better deal?

Estimating Value is all about Objectives

Cue Balanced Scorecard...

The Basic Balanced Scorecard

Objective	KPI	Target performance	KPI performance	Weight	Weighted Score
Have fun	Laughs per minute	5	2	50%	$=(2/5)*50%$ $=20%$
Make Money	Savings	£1m	£10k	20%	$=0.01*20%$ $= 0.2%$
Raise kids	No. of children	2	2	30%	$=(2/2)*30%$ $=30%$

Total Score: 50.2%

Without weightings the scorecard isn't balanced – it's just a scorecard

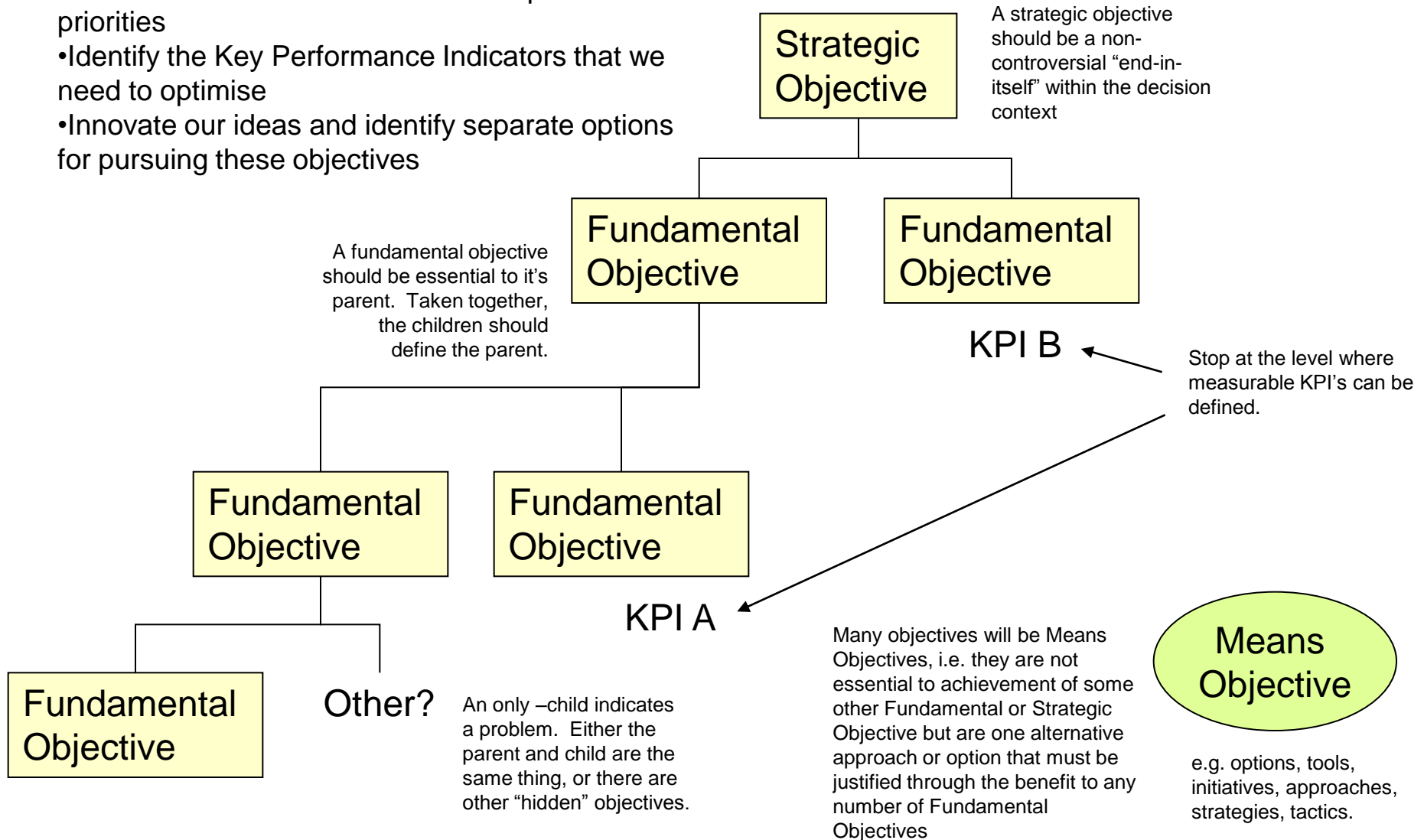
How to compile a BSC and use it for partnering and services trade-offs

- How to choose objectives and KPI's
- How to weight objectives
- How to trade-off the value of options

Choosing Objectives & KPI's – Objectives Hierarchies

Create an Objectives Hierarchy to:

- Focus on the essential output requirements
- Align our thinking to a unified set of objectives
- Create a narrative to enable us to explain our priorities
- Identify the Key Performance Indicators that we need to optimise
- Innovate our ideas and identify separate options for pursuing these objectives



Weighting Objectives - Prioritisation

Pairing Analysis is a useful way to weight the KPI's.

	B	C	D	E	F	G	Total	Weight
KPI A	A1	C1	A2	A2	A3	A3	12	30%
KPI B		C3	B3	B1	F1	B1	6	15%
KPI C		C3	C1	C1	F1	C1	10	25%
KPI D				D1	F1	G1	2	5%
KPI E					F1	E1	2	5%
KPI F						F1	6	15%
KPI G							2	5%

KPI C is significantly more important to improve than KPI D

40

Key:















3 = significantly more important to improve

2 = moderately more important to improve

1 = slightly more important to improve

The Balanced Scorecard

Weight (Wt) Performance Score (out of ten)

		0	1	2	3	4	5	6	7	8	9	10	Current State	Target
KPI A	30%												0.9	2.4
KPI B	15%												0.75	1.35
KPI C	25%												1.0	1.75
KPI D	5%												0.35	0.4
KPI E	5%												0.1	0.25
KPI F	15%												0.6	1.05
KPI G	5%												0.3	0.45

 Current State

 Target

4 7.65

So Target represents a quantifiable improvement in a dimensionless value score

Value Trade-offs

Weight (Wt) Performance Score (out of ten)

		0	1	2	3	4	5	6	7	8	9	10	Current State	Target	Option
KPI A	30%				◇	→	→	?		◆			0.9	2.4	1.8
KPI B	15%						◇	→	?		◆		0.75	1.35	1.05
KPI C	25%					◇	→	?	◆				1.0	1.75	1.5
KPI D	5%						?	←	◇	◆			0.35	0.4	0.25
KPI E	5%			◇	→	?	◆						0.1	0.25	0.2
KPI F	15%					◇	→	?	◆				0.6	1.05	0.9
KPI G	5%							◇	?		◆		0.3	0.45	0.3
													<u>4</u>	<u>7.65</u>	<u>6.0</u>

◇ Current State ◆ Target ? Option

So Target represents a quantifiable improvement in a dimensionless value score

Options can be given a dimensionless score, in this case 6.0, to compare with other options, taking into account the balance of all KPI's.

Note that not all KPI's necessarily increase.

Portfolio Analysis

- Not only can we trade on option against another, but we can combine options into portfolios.
- Portfolios enable us to combine options that individually might be rejected to create a “super option” or portfolio of options that together is better than any of the single options.

E.g. One option might offer a big increase in Availability, but requires significant investment that is unaffordable.

A second option might save significant costs, but at the expense of availability.

Individually, both are unacceptable. However, the balanced scorecard allows us to combine their features to evaluate the combination where the downside of one option is offset by the benefits of another.

Together, these two options might deliver improved Availability **AND** reduced cost.

Summary

- We need to compare the real Value of the different options
- Estimating Value is all about Objectives
- Balanced Scorecards help trade value between complex stakeholders
- Objectives are hierarchical – helps identify KPI's
- KPI's must be weighted to balance the scorecard
- Pairing Analysis is a useful way to weight the KPI's
- Scoring based on a value scale for each KPI
- Options can be given a dimensionless value score
- Options can be combined into portfolios