

**How HMRC & Aspire use an
output-based agreement
to assure value-for-money from
outsourced services**

Grant (PG) Rule (SMS)
Quantity Surveyors of Information Systems

with acknowledgements to:
Allan Edwards & Ed Brown (HMRC)
Graham Nixon (NixonBrooke)

HMRC experience puts value, first & foremost

- Output-Based Agreements quantify & make VfM visible
- Highlights link between requirements & costs
- Encourages decisions based on objective data

- Improves visibility of delivery; control of budget & time
- Facilitates early decisive action to mitigate threats
- Applicable to traditional & lean-agile projects

- Can be used for new development & legacy systems
- Fosters collaborative cf. adversarial relationships
- Incentivises supplier performance & user engagement

5 Year Review in September 2009:

- Direct costs of 3rd party 'Quantity Surveyor' gave 5:1 ROI
- Reduced support costs year-on-year by £millions GBP

Examples:

- 2 day Technical Clinic identified savings c. £400k
- 16 day audit identified savings c. £6-8m
- Review of unit-price & profile of projects at one site resulted in 33% reduction & year-on-year savings c.£2-3m
- Training provided to staff from both customer and supplier has improved understanding of the relationship between requirements, changes, costs and duration

Why this matters

The purpose of public sector outsourcing is to leverage the expertise of professional ICT suppliers to achieve the desired outcomes for taxpayers cost effectively.

HM Government's ICT Strategy

- Specify outcomes rather than inputs
- Share & reuse solutions
- Improve spending controls
- Build professional capability
- Advance agility
- Measure & improve performance
- Compare to market rates

Sustainable Procurement Act

Organisations engaged in procurement must consider the wider public interest, beyond the interests of their own organisation, in the procurement process. This includes the interests of the public, the environment, and the economy.

Section 10(1) of the Sustainable Procurement Act 2023

HM Government's ICT Strategy

- Specify outcomes rather than inputs
- Share & reuse solutions
- Improve spending controls
- Build professional capability
- Achieve agility
- Measure & improve performance
- Compare to market rates

Sustainable Procurement is...

“a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment”

Leslie Strathie, Chief Executive & Permanent Secretary, HMRC, 21-Apr-2010
<http://www.hmrc.gov.uk/about/corporate-responsibility/sustainable-proc-strategy.htm>

Proposition

When Senior Responsible Officers (SRO), Requirements & Asset Managers, and Suppliers are better informed, they are able:

- To prioritise requirements to leverage re-use
- Identify opportunities to avoid & reduce costs
- Appreciate the value delivered to users & consumers
- Understand the implications & nuances of changes

The
'Intelligent
Customer'



The
'Responsive
Supplier'

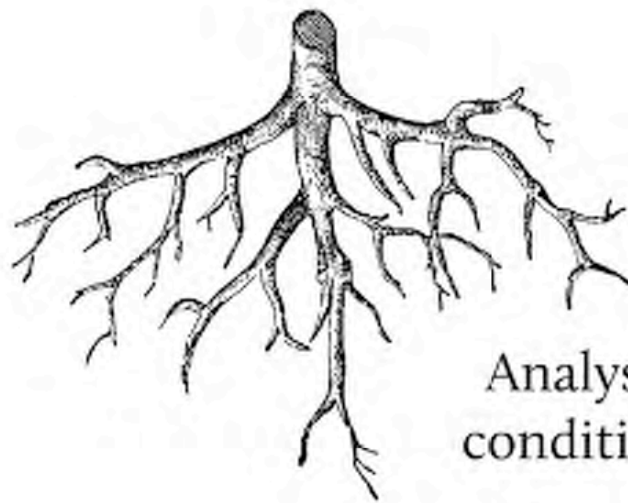
- Trust is facilitated by an independent, objective 3rd party

**To achieve VfM,
decision-makers need
accurate information**



A

Quantify the
Current State



Analyse the root
conditions & costs

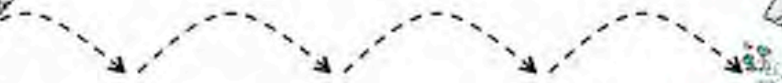


B Understand the Desired Outcomes



Clear definition of
Stakeholder Value

A



B

Determine the process steps for getting from A to B

Clear
Effective
Timely



Communicate
Communicate
Communicate

VfM also pre-supposes an understanding of market rates

Median Unit-Effort for New Development 7.69 wh/fp
Median Unit-Effort for Enhancements 9.47 wh/fp

Typical Fully-Burdended FTE day rate £360 GBP/day

Assuming:

Typical process efficiency of 65% 5.2 wh/day

Improved process efficiency of 80%..... 6.4 wh/day

Then development capacity ranges from 0.68 - 0.83 fp/day



FTE day rate = ~ £360

Unit-effort = 7.69 wh/fp

Typical Improved

	Typical	Improved	
New development	65%	80%	process efficiency
	5.2	6.4	wh/day
Productivity rate	0.68	0.83	fp/day
Unit-cost	£ 532	£ 433	GBP/fp

FTE day rate = ~ £360

Unit-effort = 9.47 wh/fp

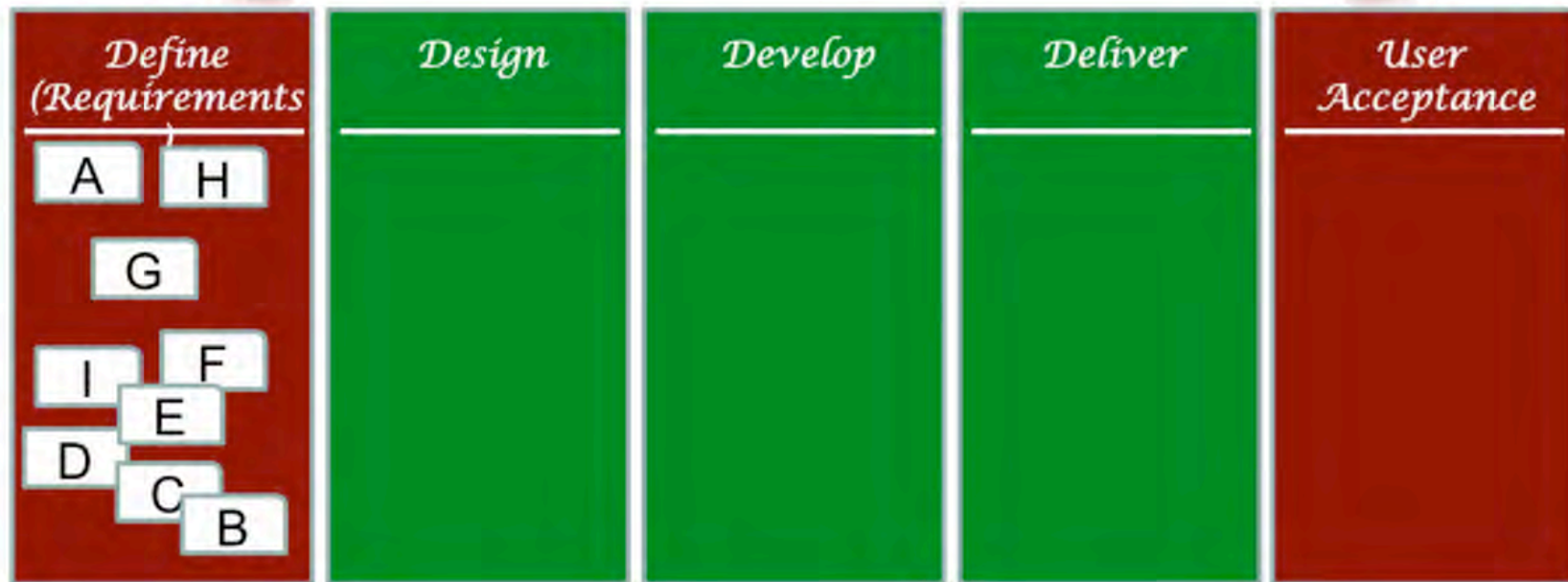
Typical Improved

Enhancement	65%	80%	process efficiency
	5.2	6.4	wh/day
Productivity rate	0.55	0.68	fp/day
Unit-cost	£ 656	£ 533	GBP/fp

Sources:

- International Software Benchmarking Standards Group (ISBSG) - www.isbsg.org
- UK IT Salary and Skills Report 2008, CNET Networks UK Ltd.
- UK IT Salary Survey 2010, Hudson Global Resources Ltd. <http://uk.hudson.com>
- ...and supplementary sources

The unit-prices agreed by HMRC & Aspire cover the predictable development & project management tasks

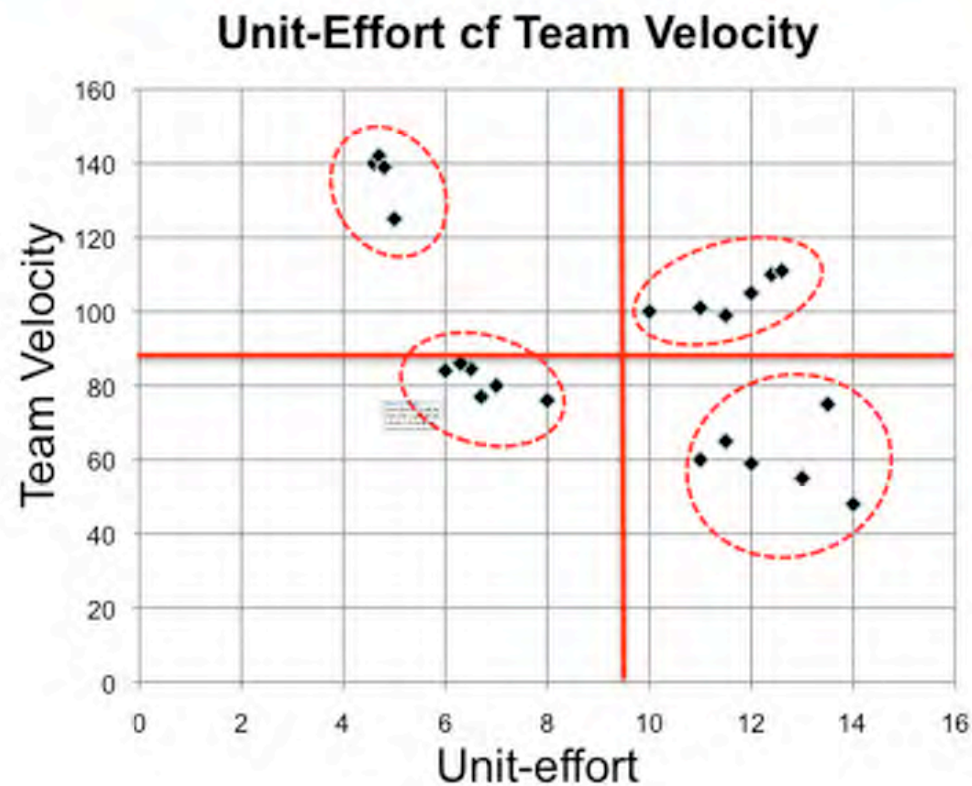


↑
'ready'

↑
'done'

separate provision is
made for other services

Analysis of past projects has been used to identify the 'types' of work likely to be performed & their related costs



Type 'A' Work

Unit-effort = 7.69 wh/fp

Unit-cost = £532 GBP/fp

Velocity = 80 fp/sprint

The rates actually used by HMRC & Aspire are commercially sensitive. Hence, the figures quoted here are derived from public domain data, based on typical (median) performance.

A Cost Driver Profile has been created to characterise each 'type' of project

SCALE FACTORS		VLO	LO	NOM	HI	VHI	XHI
	PREC		•				
	FLEX			•			
	RESL		•				
	TEAM				•		
	PMAT			•			
EFFORT MULTIPLIERS							
PRODUCT	RELY				•		
	DATA			•			
	DOCU			•			
	CPLX			•			
	RUSE				•		
PLATFORM	TIME			•			
	STOR			•			
	PVOL			•			
PERSONNEL	ACAP		•				
	APEX			•			
	PCAP			•			
	PLEX			•			
	LTEX				•		
	PCON		•				
PROJECT	TOOL		•				
	SCED		•				
	SITE				•		

Precedentedness

Flexibility

Arch & Risk Resolution

Team Cohesion

Process Maturity

Reliability

Testdata D/b

Documentation match to SDLC needs

Complexity

Required Reusability

Time Constraint

Storage Constraint

Platform Volatility

Analyst Capability

Applications Experience

Programmer Capability

Platform Experience

Language & Tools Experience

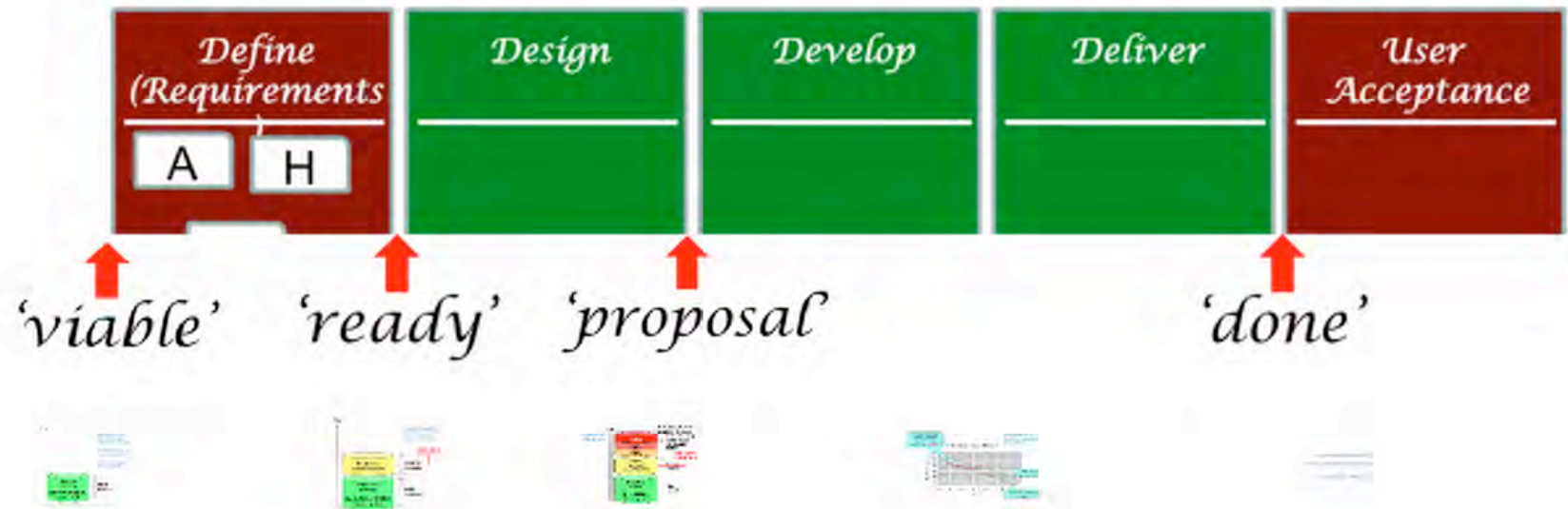
Personnel Continuity

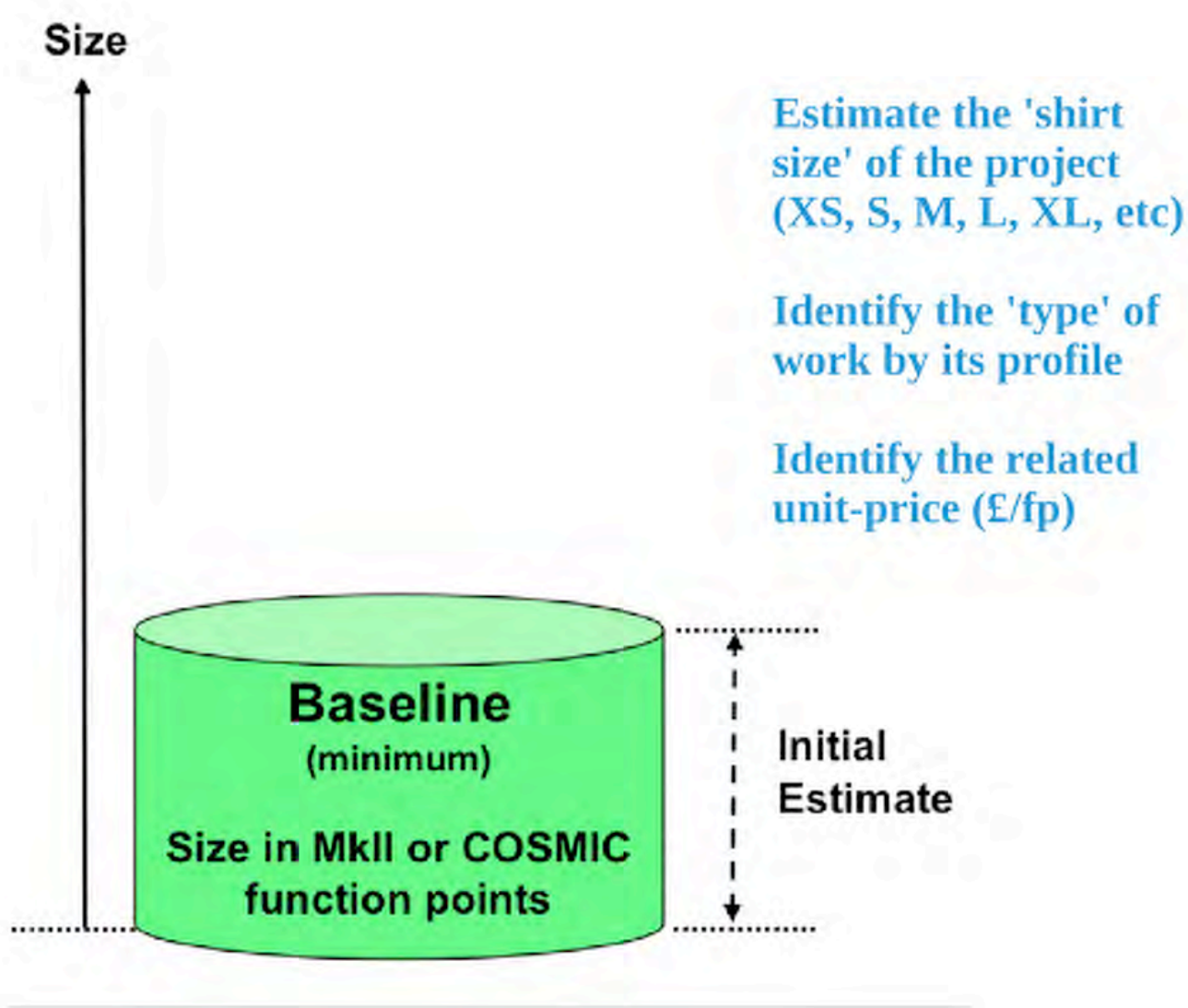
Use of Tools

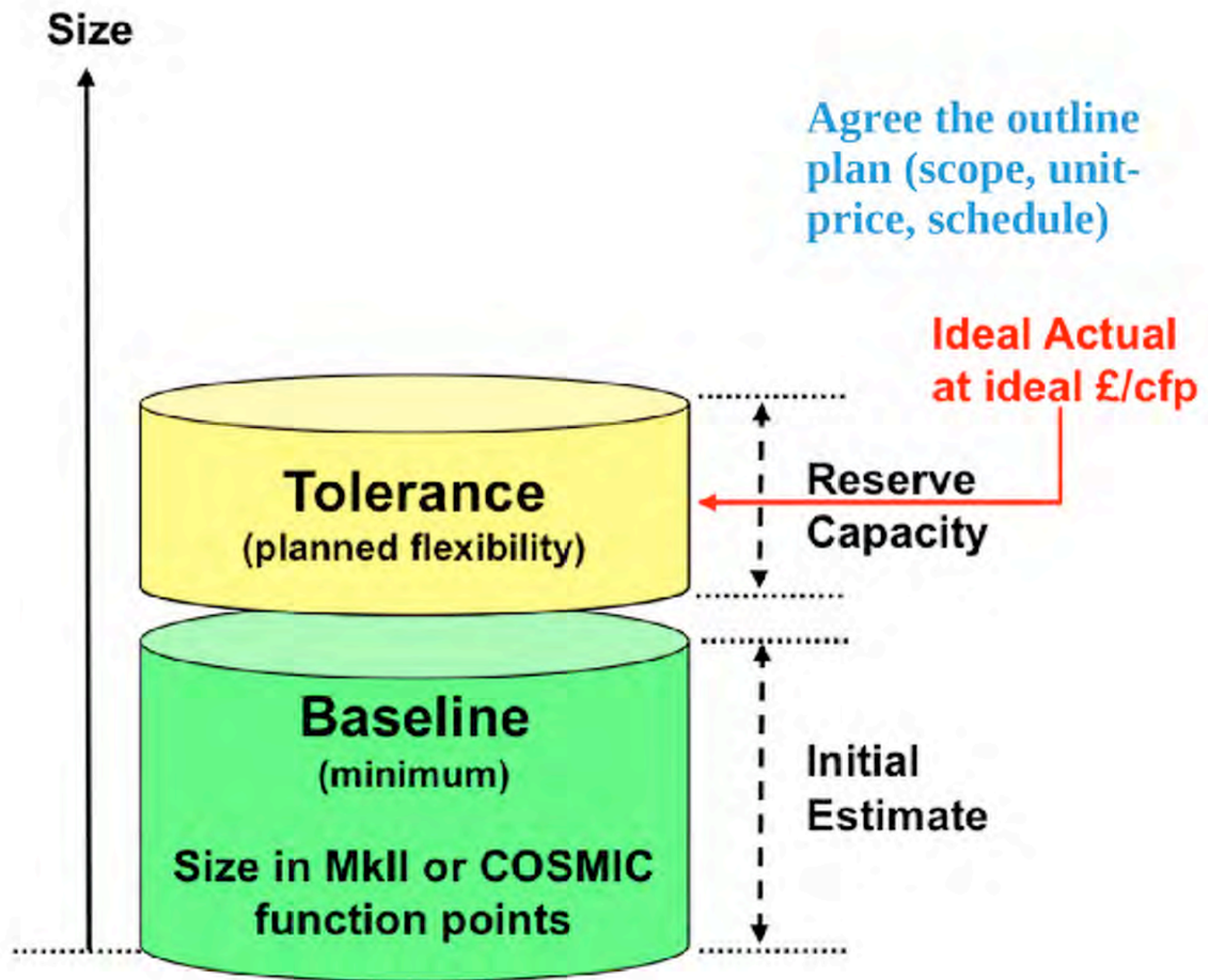
Schedule Compression

Multi-site Development

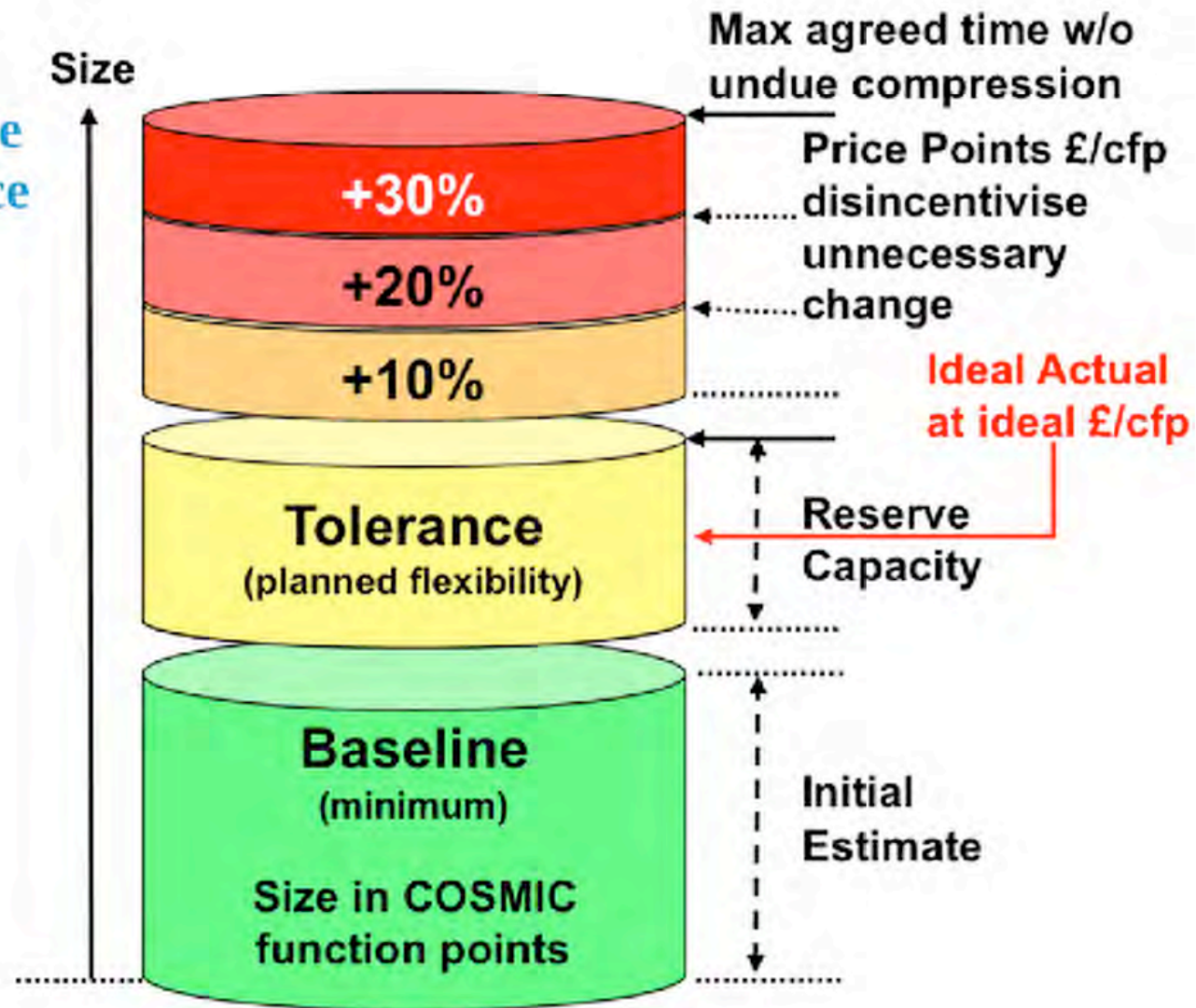
How HMRC's Output-Based Pricing Regime works in principle







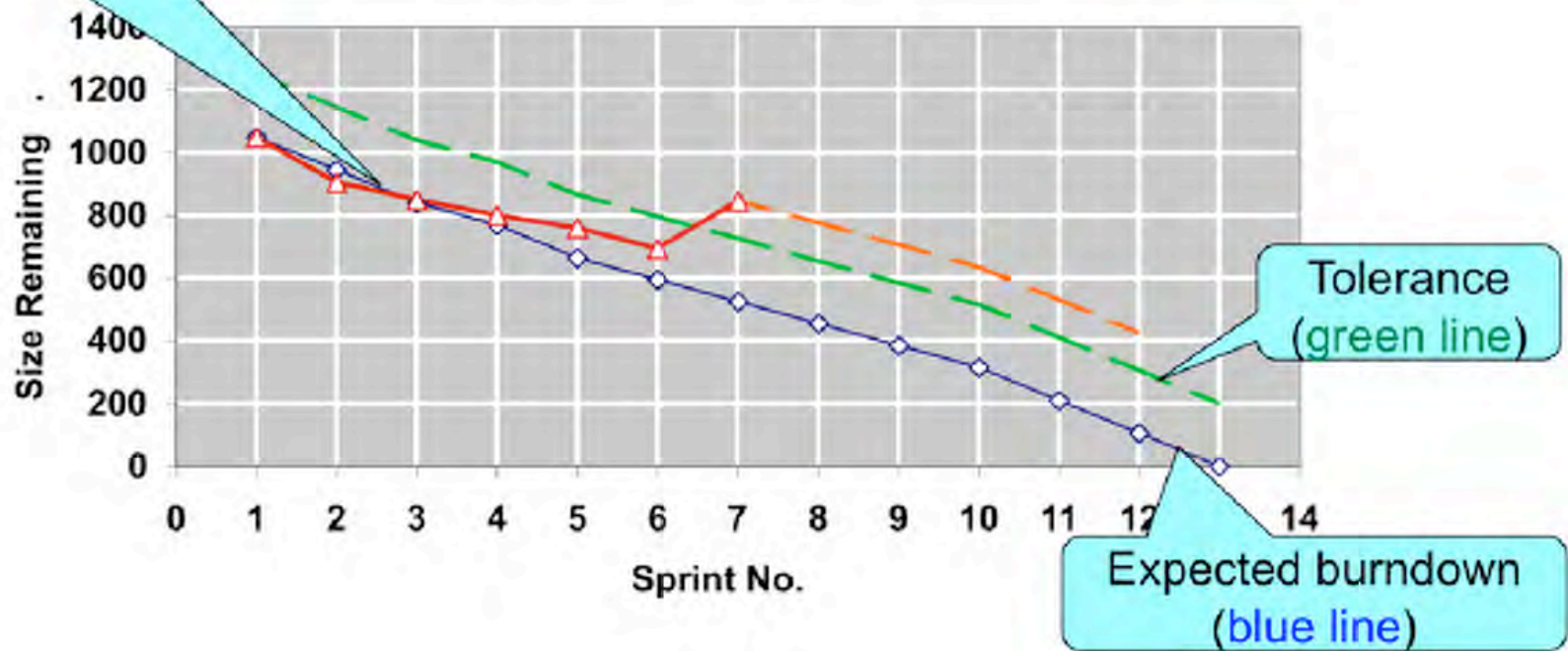
Confirm the plan & price



Scope Manager monitors size remaining (red line)

Track delivery at successive milestones or iterations

Product Backlog ... Expected Burndown



Supplier invoices calculated as:

size of functionality delivered x unit-price

i.e.

function points x GBP/fp

Advantages

- Separates pricing (how much?) from requirements (what?)
- Enables early agreement of scope, budget & schedule
- Parties can collaborate on detailed requirements unhindered
- Encourages the supplier to improve process performance
- Allows supplier to employ lean-agile practices (how?)

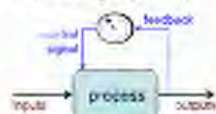
Establishes a firm, visible link between requirements & cost



Enables Requirements & Asset Managers to evaluate VFM



Clears the feedback control loop so that cost, budget & schedule can be managed proactively



Encourages engagement

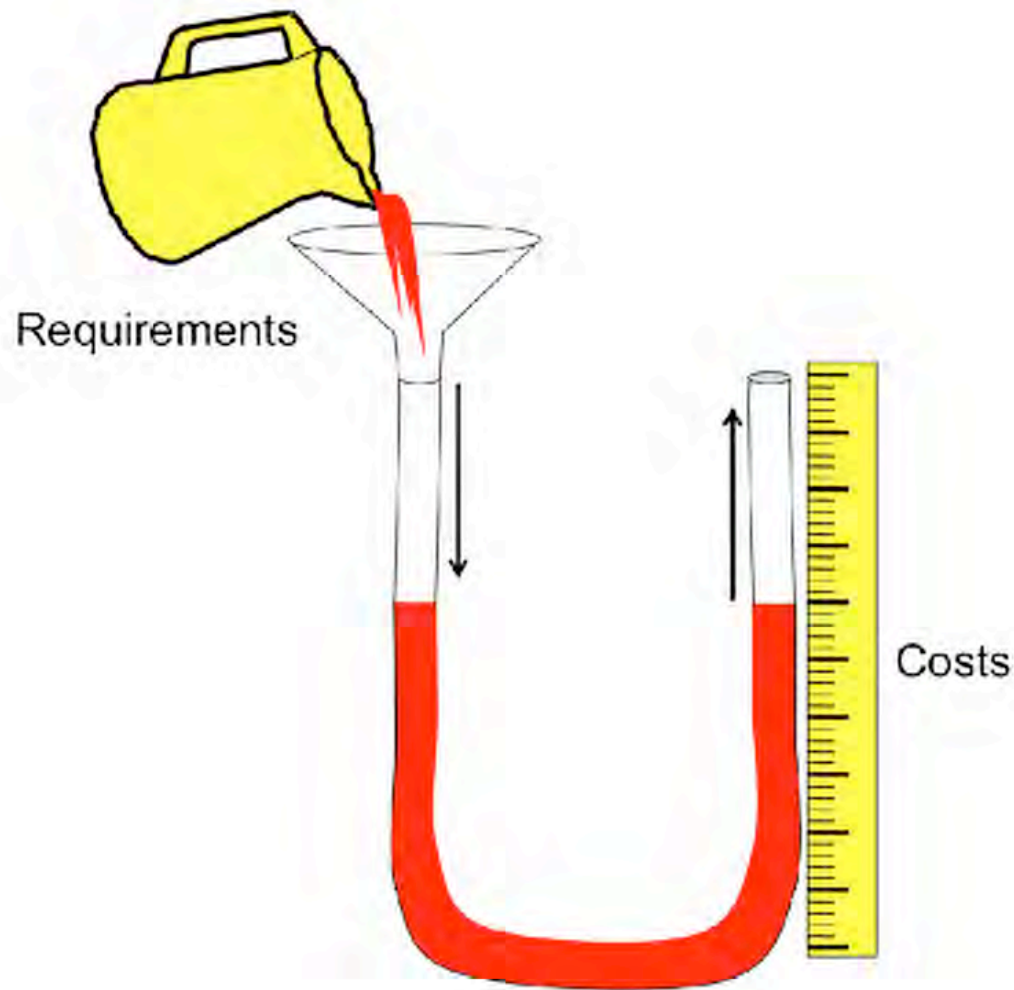


Encourages collaboration

Provides clear line of evidence **data**

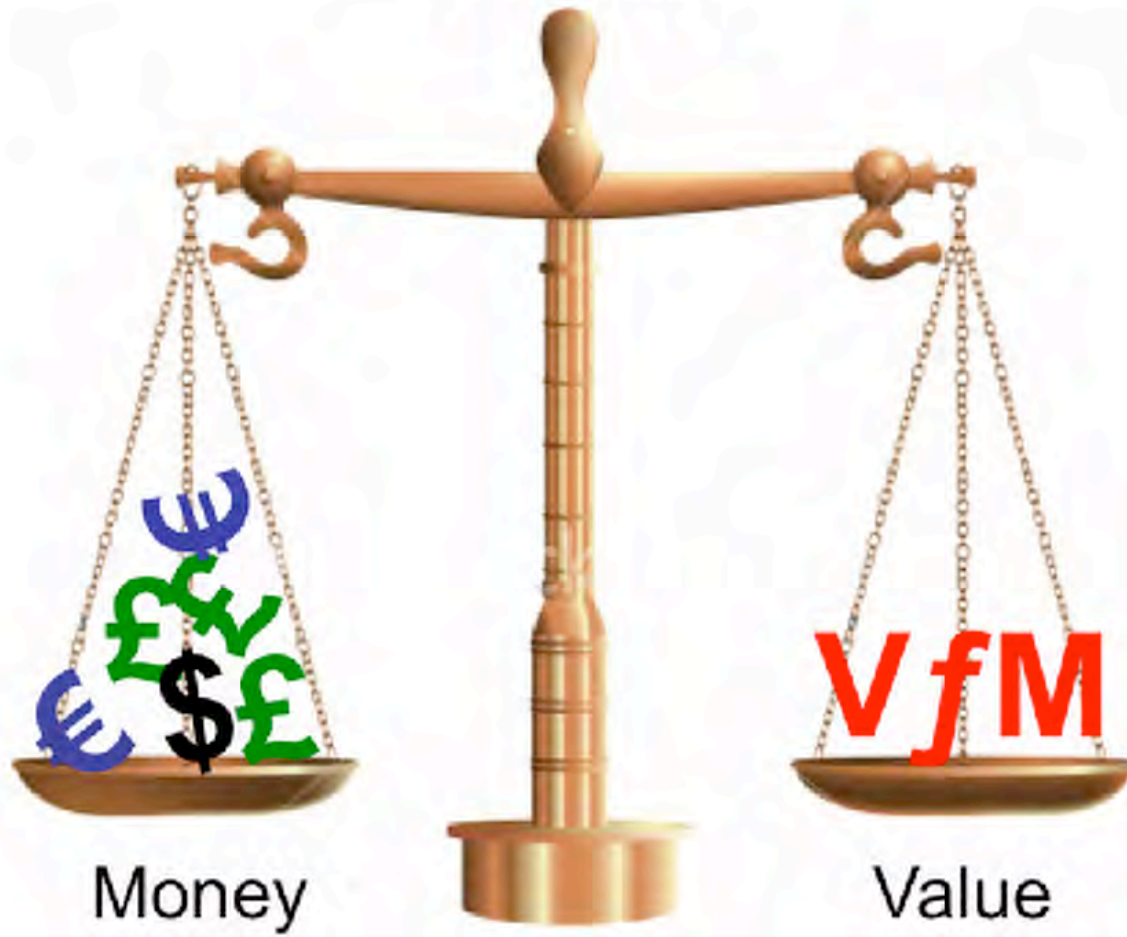
Encourages early risk factor awareness & mitigation

Establishes a direct, visible link
between requirements & costs

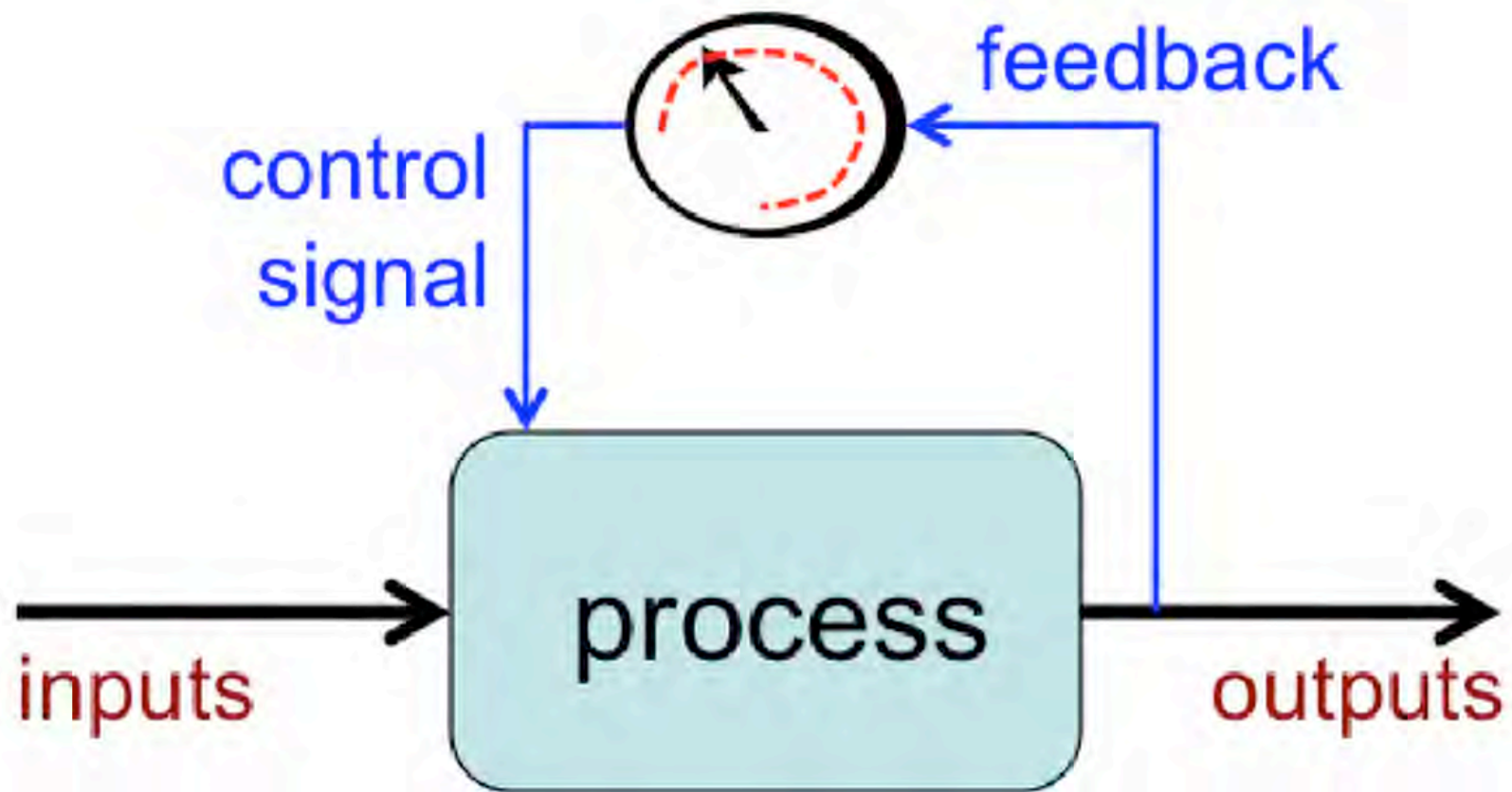


Enables Requirements & Asset Managers to evaluate VfM

Balance



Closes the feedback-control loop so that threats to budget & schedule can be mitigated proactively



Provides
objective
evidence & data



Forensic analysis defuses
adversarial negotiation

Incentivises engagement



Encourages collaboration

Responsibilities of the 'Intelligent Customer'

- SRO is responsible for long-term VfM & whole-life costs
- Be clear about requirements & priorities
- Use data to understand implications of variations in requirements, priorities & schedules
- Avoid 'gold-plating', unnecessary changes (defer commitment), schedule compression (manage scope)
- Adequately train people
- Engage & participate in the process
- Appreciate the supply-side partner's agenda

Responsibilities of the 'Responsive Supplier'

- Act as 'steward' of the customer's IPR, know-how & technical details of applications
- Charge a fair price for work fairly done
- Collaborate effectively to measure inputs & outputs
- Long-term partnership cf. 'a fast buck'
- Be willing to innovate to improve VfM
- Commit to improve process performance continuously

Role of the 3rd party 'Quantity Surveyor of IT'

- Provide trust-worthy, independent & objective advice
- Assure accuracy & reliability of measurements
- Assure an honest basis for pricing & invoicing
- Monitor scope, progress & delivery with the co-operation of the prime partners
- Assist the identification of root conditions & costs
- Facilitate resolution of issues

Lessons Learned

- It costs little to integrate measurement into the process for capturing requirements ... and its worth it!
- Trained Requirements Managers (aka 'Product Owner') are better able to express & prioritise stakeholder requirements
- Collaborative structures (eg. a joint 'Metrics Team', regular meetings) 'oil the wheels' of partnership
- Agreed practices... documented, updated, training provided ...enable value to flow successfully

Take-aways

- Output-Based Agreements work ... tried & tested
- The HMRC-Aspire pricing regime provides an exemplar of public sector supplier management
- OBA aligns with HM Gov's new ICT Strategy
- The necessary measurements are based on open, public standards that have been recognised internationally
- OBA facilitates cost control and focuses on priorities
- The method can be retro-fitted to most software work

Questions



**If you have been,
thanks for listening.**

Grant (PG) Rule
MD, Software Measurement Services Ltd.
T: +44 1732 863 760
E: g.rule@measuresw.com
www.measuresw.com

**'measure twice, cut once'
an old craftsman's adage**