

How can you maintain integrity when accounting for software development costs?



SMS UKSMA- 15<sup>th</sup> October 2009

Software Measurement Services



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Your presenter



P. Grant Rule,  
Managing Director, SMS

As a founder of the UK Rightshifting Network, with over 35 years experience in the field of softsystems, I am committed to leading firms in learning how to be more effective at creating value and achieving desired outcomes for all stakeholders.

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This talk is about ...in extended understanding & value streams sustaining such as value... outsourced partnerships



- Outsourcers & outsourcees can simplify contracts, and reduce costs & risks by focusing on value and by using Outcome-Based Agreements
- To understand value we must determine what constitutes 'value' for all stakeholders
- Maintaining & sustaining integrity and a wealth-creating value stream requires an holistic analysis of value
- Clear communication of desired outcomes allows alignment of incentives with goals
- Suppliers should behave as 'stewards' of their customers' intellectual property
- Objective measures of output assure customers they will receive value-for-money and their desired outcome

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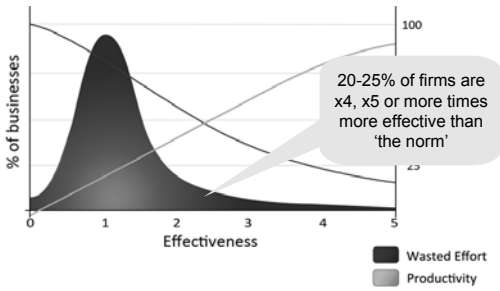
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Myth #1: being as effective as 'the norm' is good enough in an age of global competition



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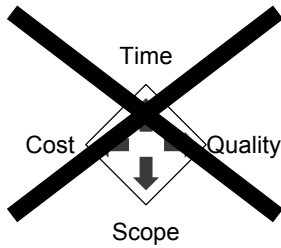
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Myth #2: firms must trade-off cost, quality, time & scope... you can't have it all at once



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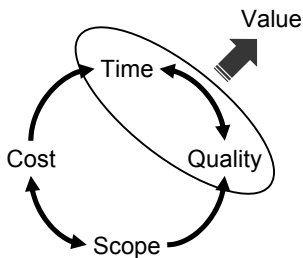
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A focus on value pulls speed & quality... avoids non-value-adding work, preventing defects



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# So what do we mean by 'value'?



- If 'value' is the key to faster delivery, driving costs down & quality up, we'd better understand what 'value' means

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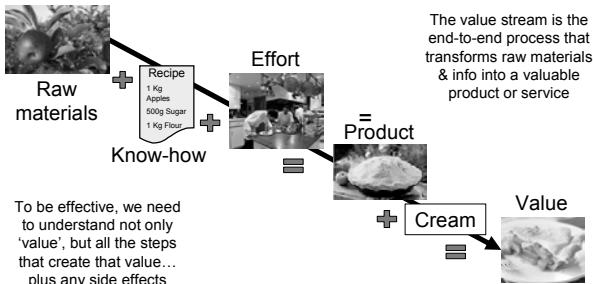
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Value is defined and pulled by the customer's stakeholders' desired outcome.



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The value stream(s) **are** the business... to understand we use a standard balance sheet

- Assets
  - Cash + debtors (liquid assets)
  - Fixed assets
  - Stock
- Liabilities
  - Creditors
- Capital

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## Integrity demands the balance sheet accounts for all the contributions that sustain business

- Cash →
- Production →
- Raw materials →
- Know-how →
- People →
- Income & expenditure
- Facilities & equipment
- Natural resources
- Intellectual property
- Culture

When we consider all the stakeholders, not least the business itself, it is evident that the desired outcome includes creating a value stream that can sustain the delivery of value over time

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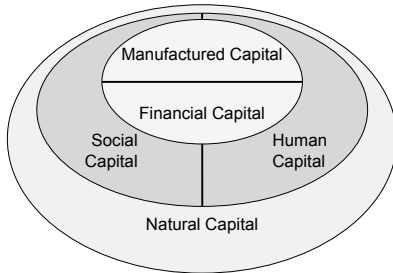
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## Humans derive value from five types of capital that sustain & improve the quality of our lives



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## The Five Capitals model

- Financial Capital ('treasure' - a means of exchange):
  - Finance has an important economic role as a means of exchange, but it has no inherent value. It represents natural, human, social or manufactured capital (e.g. as shares, bonds or banknotes) and facilitates trade.
- Manufactured Capital ('the built environment' – including softsystems):
  - Products, fixed assets & infrastructure e.g. tools, machines, buildings, roads, etc.
- Human Capital (including intellectual property):
  - People's health, talent, education, know-how, guidebooks, instructions, skills, creativity, motivations & morale... all of which contribute to productive work.
- Social Capital (the institutions of 'civil society' and community):
  - Institutions that help people maintain & develop human capital in partnership e.g. families, communities, businesses, trade unions, schools, voluntary organisations, local and central government. Community spirit, team spirit, loyalty, culture.
- Natural Capital (renewable & non-renewable resources):
  - Any stock or flow of energy or renewable and non-renewable resources; sinks that absorb, neutralise or recycle wastes; natural processes & cycles that regulate the environment, growth & decay, etc.

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## Each capital has matching debts and flows

### Five Debts

- Financial debt : represents labour and/or tradeable assets
- Physical debt : aka technical debt – incomplete or missing quality, defects that will need correction
- Knowledge debt : aka ignorance – lack of know-how needed to achieve some goal
- Social debt : unfair social conditions, poor education, inadequate healthcare, unemployment, inter-community tension, disloyalty to family & community, favours owed
- Environmental debt : pollution, damage to the natural regulatory cycles, disruptive change to habitats, non-sustainable land use

### Five Flows

- Cash flow : invoicing, accounts payable
- Trade : flow of made goods
- Knowledge flow : training, education, communication, creation & loss of intellectual property
- Community spirit : human interactions, will to cooperate & collaborate, exchange of favours
- Flow of natural resources : H<sub>2</sub>O, CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub> cycles; growth & decay; population dynamics; oil & gas cycle; tectonic movement; evolution;

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## How can we ensure our enterprises deliver value?



- By managing the balance sheet to grow & sustain wealth creation in all five capitals
- By avoiding hidden debts
- By thinking holistically & continuously improving the end-to-end performance

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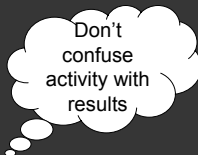
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## Dysfunction is avoided through objective measurement



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|--------------|-----|------------------|
| • Facts      |     | • Myth           |
| • Evidence   | cf. | • Opinion        |
| • Visibility |     | • Hidden agendas |

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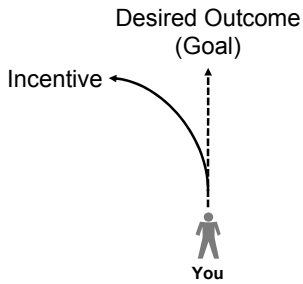
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To achieve the desired outcome, activities must be aligned with the intended direction of travel




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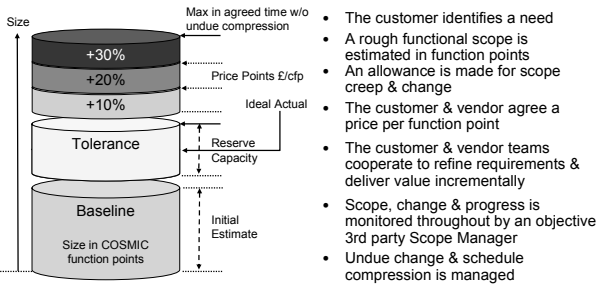
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Outcome-Based Agreements align incentives to suppliers with the customers desired outcomes



- The customer identifies a need
- A rough functional scope is estimated in function points
- An allowance is made for scope creep & change
- The customer & vendor agree a price per function point
- The customer & vendor teams cooperate to refine requirements & deliver value incrementally
- Scope, change & progress is monitored throughout by an objective 3rd party Scope Manager
- Undue change & schedule compression is managed

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The supplier is 'steward' of the customer's intellectual property, providing competencies & capabilities not otherwise available

- Customer responsibilities – define & prioritise 'business value':
  - Establish & communicate a clear vision and direction of travel
  - Retain control of the intellectual property (IP) that constitutes their business
  - Transfer know-how to the supplier by proven, approved processes
- Supplier responsibilities – for a 'customer-intimate' partner:
  - Gain, sustain & improve know-how of the customer's business over time
  - Maintain know-how of the customer's systems (IP) to agreed standards
  - Make the customer's IP available for audit at any time
- Key elements:
  - Capture, verification & publication of necessary & sufficient know-how of systems to be 'stewarded'
  - Effective suppliers can quote a fixed (unit) price if relevant know-how is available
  - An approved & agreed process for the return of 'stewarded' IP to the customer with warranties at termination for any reason of the outsourced partnership

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## The Basic OBA Method has four phases designed to enable work to start quickly

1. Demand Phase	<ul style="list-style-type: none"><li>• <b>OUTCOME:</b> Identify the need, the business case and the business value with stakeholders</li><li>• <b>CONTEXT:</b> Determine an outline architecture (i.e. N x sub-systems), context, purpose, etc.</li><li>• <b>SIZE:</b> Assess the size range using Rule's Relative Size Scale (S, M1, M2, L, XL, etc)</li><li>• <b>PROFILE:</b> Quantify non-functional requirements / project type to assess impact on price/tp</li><li>• <b>PRICE:</b> Determine an acceptable range for the unit-price, total price and duration</li></ul>
2. Select & Negotiate Phase	<ul style="list-style-type: none"><li>• <b>RFP:</b> Issue a Request For Proposal (minimise risk using at least 2 vendors)</li><li>• <b>EVALUATE:</b> If the risk warrants<ul style="list-style-type: none"><li>• Conduct capability evaluation of vendor (CMMI-DEV)</li><li>• Conduct appraisal of customer acquisition practices (CMMI-ACQ)</li></ul></li><li>• <b>AGREE:</b> Agree a simple, short contract<ul style="list-style-type: none"><li>• Expected scope = baseline + tolerance</li><li>• Unit price regime for expected scope + price for late changes</li></ul></li></ul>
3. Value Delivery Phase	<ul style="list-style-type: none"><li>• <b>DESIGN:</b> Cooperate to develop detailed product architecture; compile Product Backlog</li><li>• <b>PRIORITISE:</b> Prioritise items in the Product Backlog; determine size of high-priority items</li><li>• <b>DELIVER:</b> Iteratively develop and deliver value (using agile methods e.g. Scrum)</li></ul>
4. Review Phase	<ul style="list-style-type: none"><li>• <b>REVIEW:</b> Conduct a retrospective of results quarterly, half-yearly, annually<ul style="list-style-type: none"><li>• Frequency depends on risk, customer satisfaction, level of cooperation, etc.</li></ul></li></ul>

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## Summary:

- Value pulls speed & quality, reducing costs
- Understand value if you want to create it
- Consider all 5 capitals... and 5 flows & debts
- Objectivity & visibility mitigate against waste
- Outcome-Based Agreements align the customer & supplier activities to 'True North'
- Value, Value Stream, Pull, Flow, Perfection

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Think holistically,  
deliver  
incrementally



- From concept to consumption

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Questions?



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SMS are specialists at  
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If you have been...  
...thanks for listening



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