Tell me more about…….
Low cost, low risk, fast improvement and innovation

for products, services and processes; and better collaboration

To Start in Seconds, first see↓

Route-map – from start to implementation

Recipe – foundations for group collaboration

You can….

Further information

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A special message

Innovation is like a 'voyage of discovery'.

As you journey,
you discover and understand more about:
things
including products, services, processes;
people
such as end-users, customers, colleagues;
yourself,
your ingenuity, perseverance and humanity.

And, your story can help and inspire the next generation.

Free download:
www.nasa.gov/offices/NHHPC/events/m2m-connects.html

Some Common Assumptions about Successful Innovation

- **Innovation is about better products or new technology**
  - **Success is often by delivering better customer/end-user value**
    - Achieved through product, technology, service delivering better utility etc
    - Better value may also come through lower cost/price
- **Innovation focuses mainly on creativity**
  - **Successful innovation is more than having bright ideas**
    - Observation, data collection, analysis and insights support efforts
    - Implementation (including marketing and delivery) involves considerable effort
- **Innovations usually come from inventors and innovative suppliers**
  - **End-users often source of successful innovations**
    - Innovation moves back up supply chain or out to wider use
- **Innovation is costly, high risk and time-consuming**
  - **Efforts (from start) on enhancing value can be low cost, low risk**
  - **Careful management can reduce risks**

Why Use a Methodology?

To make innovation and improvement

- Easier
- More productive
  - Better outcomes
  - Faster
  - Lower risk
  - Lower process cost
- More fun (for everyone involved)

Extraneous Influences on Innovation

- Personal
  - Preconceptions about innovation (conventional wisdom)
    - Costly, risky, slow and product or technology focused
  - Other influences
    - Personality and upbringing/experience, paradigms (conceptual framew'rks), heuristics, rationalizations (nothing for me), language
- Organizational
  - Culture: change, risk or innovation averse
    - Slow and extra hard work to get anywhere
  - Structure, priorities and rewards not set up for innovation
    - Collaboration, flexibility, 'can do', and 'hands-on' not the norm

Paradigms and Innovation

- Paradigm, (or conceptual framework)
  - Incl: knowledge, assumptions, beliefs, expectations etc.
  - Impacts incl: on observations, analysis, decisions, research etc.
- Everyone affected by paradigms, incl: end-users, you, colleagues
- Innovation (and major change), creates new paradigm
- Finding, (and understanding) not easy, try:
  - Creating real or imaginary Value-adding Interface, analyse
  - Asking, what's new (or changed)?
  - Asking, who is impacted and how (by new or changes)?
  - Could these characterize an underlying paradigm (especially of assumptions, beliefs, expectations)?

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Tell me more about……..

Value-adding Integration (VAI)

VA Integration brings VA elements closer together in ways that add further value

- Thru' Integration of value/value-adding part(s)
  - Better end result is obtained
  - Waste/cost and workloads reduced
- Opportunities for further enhancements arise
  - Integration adds value in its own right
  - Creates new situation for further improvement
- Problems at interfaces are reduced or eliminated

Definitions

- Value: end-user defined value/worth
  - Recognized as need, want, perception, utility, functionality etc.
- Value-adding: creates or enhances value
  - Provided by utility, functionality, feature, performance etc. (existing in value-adding elements. e.g. in products or services)
- Value-adding activity/process: needed to provide value
- Non-VA activity/feature: no value to end-user
- Integration: better value-adding 'fit' or co-ordination
  - With end-user values, perceptions, needs etc.
  - Other VA activities (in a process)

Value-adding Interfaces

- Value occurs at interface - VA elements meet here
  - Between: product (or activities)/end-user; process stages or activities; parts; patients/their world etc.
  - Value can be created or lost here
  - Interfaces are often overlooked, where problems occur
- Integration changes interface or creates new interface with potential for adding more value
- Interfaces exist within end-user's 'Big Picture'

Summary – Main Principles

- Value is only added at the Value-adding Interface
  - Better integration reduces costs/wastage, enhances end-user value
- The end-user's 'world' (or Big Picture) defines 'value'
  - VAI can help in understanding end-user's 'world' and identify value
- Successful innovation/improvement arises from better Value-adding Integration with end-user's world
  - Risks from innovation are substantially reduced
- Innovative integration leads to further opportunities for adding value
  - New situation created at substantially reduced cost and risk

Low risk innovation using VAI

- Inherently low risk activity (compared to other ways):
  - Bringing value-adding elements closer together in ways that add further value/reduce costs
  - Makes much use of data and analysis of value-adding/loss
- VAI process includes stages (2, 3) to reduce remaining risks
- Use VAI process to correct any problems
  - Provides method for analysis
  - Facilitates collaboration
- Creating a VA interface:
  - Prevents some problems occurring
  - Provides mechanism for correcting problems and collaboration

Low cost innovation using VAI

- Inherently low cost (and risk) activity to 'product' (compared to other ways of carrying out innovation):
  - Not carrying out major changes to 'core' of product, service or process
  - Focus is on value-adding/loss interactions, which can be improved through minor (not major) changes
- Not making high cost investment in:
  - radical change to existing 'core' technologies
  - major change to existing production etc. facilities
- Wider (VAI) focus for improvement
  - Extends beyond narrow definition of product, or service to include customer (or end-user) experience and interactions etc.
  - Includes all value adding activities

Tell me more about……(series),
Current Titles:

Innovation
Value-adding Integration (VAI)
Carrying out VAI
Examples of VA Interfaces
Advantages of VAI – 1
Advantages of VAI - 2
Managing VAI Innovation
Green Leader Limited

Further Information - Nigel Moore, Green Leader Limited, Email nmoore@greenleader.co.uk

Tell me more about……..

Carrying out Value-adding Integration (VAI)

Carrying out Value-adding Integration

- Step 1 Develop Value-adding Integration proposals*
  (Work around value-adding interfaces: create, understand and make them work better)
- Step 2 Check proposals for technical/commercial compliance/expectations*
- Step 3 Check successful fulfilment assurance*

**Overall you are trying to :*
Identify (e.g. the problem, or opportunity)
Analyse (e.g. the problem, or opportunity)
Innovate or improve, devise a solution with added-value and/or lower costs
Make it work, in accordance with your definition of success

STEP 1 Develop VAI Proposals

- Place within 'Big picture'
  - Examine end-user (or next user) needs, wants etc.
  - Examine next activities (in process, VA or supply chain)
  - Characterize (key) interfaces (create/add V, problems)
- Use VAI tools, e.g. (as appropriate):
  - Internet
  - Integration space, Integration plan
  - Time, VA, Interface Analysis; eliminate Non-VA activity
- Achieve better VAI 'fit' (fit, form, function), or co-ordinate with (1) end-user (2) other VA activities

STEP 2 Check compliance

- Check technical/commercial compliance
  - Against requirements, specification, statutory etc.
  - Against (precise) expectations (of end-user, etc.)
  - Review cost/price and/or value for money, viable?
- Resolve any remaining issues
- If important issue unresolved consider alternatives (failure is not one of them)

STEP 3 Assurance

(successful outcome fulfilment assurance)

- Check what is proposed to deliver outcome
  - Assess risks and mitigation measures
  - Review Management plan/arrangements, resourcing, delivery methodology etc.
  - Refine and improve, reduce negative side-effects
- Unacceptable residual risks, consider alternatives

Oversight and Review

(identify and take forward strategic lessons)

- Questions arising from VAI activity (innovation creates new situation):
  - What has changed, or is changing (from most to least important, Big Picture)?
  - What needs to **now** change (links, dependencies, implications, paradigms)?
  - What should we do (how, when, next VAI steps)?
- Available to help provide answers:
  - Knowledge - existing and gained (thru' VAI Steps 1 to 3), e.g.:
    - About customers, processes and collaborating
    - What is still (largely) unknown, but important
  - Insights developed (arising from analysis of the knowledge gained)
  - Realistic predictions arising from VA Integration theory, observation, analysis
  - Lessons learned (what could be done better next time)
- Available to help move forward:
  - Action plan, e.g. including goals, program, strategy
  - VAI methodology

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Tell me more about……..

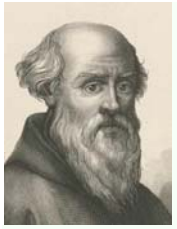
VA Interfaces – Arising through **Functionality** or **Utility** Value (to the end-user) is added through the functionality present (ability to move sand, help process of building sand-castle). VA Interfaces, sand-blade, sand-inside of bucket.

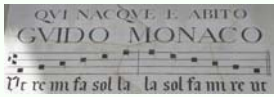
VA Interfaces – Interactions **with end-user** Value arises (or is lost) through interactions.

© Science Museum / Science & Society Picture Library, London

VA Interfaces – In **Process** (improved by G. & R. Stephenson) Value (to the end-user) is added through the process of steam production and use to move train. Various VA Interfaces include fire-water (in boiler), steam-piston, fire-exhaust steam.

VA Interfaces between **Serendipity-you**, also **end users-their worlds.** Serendipity: making fortuitous discoveries by accident. Many VA Interfaces everywhere for you to spot, study, enjoy...





VA Interface – **Between Doer and Activity** (work or play etc.), e.g. singing; value is added by singer and song. Guido of Arrezzo invented musical notation to improve the VA Interface.

'Collaboration' by kind permission of the Barth Syndrome Trust

VA Interfaces – **Collaboration** (in ways that add more value), examples; customer - you, colleagues (or other organizations) - you, 'Romeo - Juliet', Rogers & Hammerstein, multi-disciplinary medical research.

Please consider a donation toward world-leading collaborative research into Barth syndrome, a life-threatening rare disease, visit www.barthsyndrome.org, www.barthsyndrome.org.uk.

Examples of Value-adding (VA) Interfaces

VA Interfaces – **Performance** (designer R.J. Mitchell) Value (to pilot) is added through flying performance. Various VA Interfaces (value is added or lost) include wings-air, control surfaces-air, controls-pilot, engine-propeller-air.

VA Interfaces – **Subtle combinations** add more value. VA interfaces exist between player - guitar, light - dark, colours, movem't – calm, girl – off canvass; visual - enigmatic

The Guitar Player by J. Vermeer

Summary: VA Interfaces are 'places' where interactions occur that add value (for end-users). They can be conceptual, physical, environmental, aspirational, life style and/or a combination.

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Choose something that inspires you

– How many Value-adding Interfaces can you identify? Can you make them better?
- How many (problem) interfaces can you find that do nothing or only lose value? Can you remove them, make them work better or add value?

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Overview of Potential Outcomes

- Better products and public services; lower cost
- Process improvements and efficiencies
- Reduced risks associated with innovation
- Reduced wastage and environmental impact
- Improved working environment
- Help with problematic situations
- Faster (overall) research progress

Problematic Situations

- VAI can help produce better outcomes where:
  - Remote or virtual working is difficult:
    - Co-ordination, understanding, duplication etc.
  - Interface problems exist between:
    - Product - user (usability, functionality, performance etc.)
    - Stages of an overall process (delays, errors, losses etc.)
    - Patients and environment (quality of life - rare diseases)
  - Available resources and funding are limited
  - Competing at a disadvantage, typically:
    - Size, market standing, new entrant, costs

USPs of VAI

- Better products and services
  - Identifies (new) place(s) of value (at interfaces)
  - Improvement (often) low cost, low risk, in-house
  - Greater focus on customer, client
  - Reduced wastage and environmental impact
  - Further potential for adding value (at interfaces)

USPs of VAI

- More efficient activities and processes
  - Reduced non-value-adding activity, time, costs
  - Reduced interface problems
  - Improvement (often) low cost, low risk, in-house
  - Reduced wastage and environmental impact
  - Further potential for process improvement (at or near interfaces)

USPs of VAI

- Risks to successful outcome reduced
  - Assessing risks directly
  - Assessing pro-active measures – forward looking
- Applicable to new businesses
- Applicable to innovations
- Fits in with later Plan, Do, Check, Action cycle (during implementation of proposals)

USPs of VAI

- Reduces waste and environmental impact
  - Clear definition of wastage and non-VA activity
  - Wastage identified (through clear definition)
  - VAI focus eliminates/reduces wastage (and non-VA activity)

USPs of VAI

- Improved working environment
  - Reduced non-value-adding workloads
  - Less interface fire-fighting and problems
  - Less stress on individuals (emphasis on process)
  - Reduced risk of failure (below expectations)
  - Potential for more individual contribution
  - Higher morale/confidence and espirit de corps

USPs of VAI

- Simple (unified approach), flexible and fast
  - Reduced time, effort and resources to apply
  - Increased likelihood to find/correct problems
  - Promotes efficiency and adding more value
  - Reduced risk of failure (below expectations)

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Overview of Potential Outcomes

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- Improved working environment
- Help with problematic situations
- Faster (overall) research progress

USPs of VAI

- Facilitates:
  - Customer/client focus (for activities)
  - Creativity and ideas (outside existing paradigms)
    (see also next slide)
  - Analysis (into VA and non-VA elements)
  - Collaboration, co-ordination
  - Finding new opportunities (low cost, low risk)

USPs of VAI

- Creativity and thinking outside the box
  - Creates pathway into new and novel VA situations
  - Moves discussion, analysis, creativity to new situation
  - Challenges 'reality' (knowledge, assumptions, invention)
  - Provides basis for imaginative collaboration on:
    - Finding and refining product features (or utility etc) to add
    - Discovering items (eg features, utility or stages etc) to omit
    - Developing next steps

USPs of VAI

- Education and training
  - Greater understanding of end-user, next-user perspective(s), needs, wants etc.
  - Greater understanding of VA and non-VA
    - In product and service features
    - In activities and processes
    - In healthcare and quality of life issues (rare diseases)
- Helps non-specialists
- Faster learning through cross-pollination

USPs of VAI

- Easy and fast to implement
  - Flexible, can be adapted to situation
    - Apply to selected areas/problems
  - Fast training and learning
  - Integrates with existing improvement efforts
  - Uses VAI to adapt and improve application of VAI principles and methodology to each situation
    - Includes some automatic or self-adaptation

USPs of VAI

- Subtle beneficial effects present
  - For personnel to facilitate improvement activity
    - Reduces their workload, improves their work environment
  - For personnel to be proactive for assurance
  - Scalable to complexity, innovativeness of task
  - Changes mind-sets and expectations, including:
    - Attenuates insularity ('not invented here', cliquishness)
  - Better understand social/public service aspects
  - For patient/clinician dialogue (VA in healthcare)

USPs of VAI

- Innovative Pricing, Risk Management/Sharing
  - Additional information available (from VAI) on:
    - Risks to a successful outcome (contract, project etc)
    - Proactive management for a successful outcome
    - Risk mitigation measures (existing and proposed)
  - Potential to:
    - Reduce risk premium (fixed price)
    - Accurately monitor rate prices against progress
    - Risk share between buyer and supplier
    - Apportion contract to fixed and rate prices segments
    - Incentivise against goals

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How to Start?

- Use a pilot/trial (of VAI innovation efforts)
- Use for small improvements first
  - Less risk, lower cost
  - Faster to introduce
  - Experience Curve effects
- Adapt to required application(s)
  - Use VAI to improve use/suitability of VAI methods

Where to start?

- Management priorities and objectives
- Existing problem and neglected areas
- Customer facing interface(s)
- Places VAI can reduce costs and improve value

Management Overlay (Success Factors)

- Motivation (to achieve successful outcome)
  - Why should they bother, more work, no reward, risky?
- Supportive framework (by organization)
  - How supportive is existing set-up? (resources, culture)
- Competent and adequate human resource
  - How much do they know about successful innovation?
- Management deployment (focuses efforts)
  - What activities are in place to monitor, manage work?

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About us

- Green Leader Limited
  Rail electrification consulting engineers
  – 14 years of virtual operations
  – Value-adding Integration approach to business

- CEO and founder (poor hearing)
  – Engineer (electrical/electrification)
  – Voluntary work in rare diseases
    - Barth Syndrome Foundation Inc. (virtual working)

Further Information

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Barth syndrome (BTHS)

A rare, serious (life-impacting and life-threatening), genetic disorder (rare disease) primarily affecting males, resulting in a complex inborn error of metabolism.

Led by the Barth Syndrome Foundation Inc., the Barth Syndrome Community of affected families, clinicians, researchers, volunteers and donors is working globally to raise awareness, support affected families and find treatments, and a cure – their mission is a world where no one will suffer or perish from Barth syndrome.

Multi-system disorder, cardinal characteristics:

- Cardiomyopathy (weak heart)
- Neutropenia (weak immune system)
- Underdeveloped skeletal musculature and muscle weakness
- Growth delay
- Exercise intolerance
- 3-methylglutaconic aciduria
- Cardiolipin abnormalities

Further information www.barthsyndrome.org, www.barthsyndrome.org.uk

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