Potter Innovation Ltd response to Ofwat's Driving transformational innovation in the sector

Potter innovation teach a new form of study and leadership science known as Innovation Engineering (IE). Innovation is the science behind innovation and enables those who learn it to apply the tools and techniques in their organisation to drive transformational change.

IE is the only fully documented, proven, data-driven system for innovation. It has an unrivalled pedigree because it is based on the system thinking of Dr W Edwards Deming. Just as Deming's thinking transformed the art of manufacture to a science and gave rise to Total Quality Management, Lean Manufacture and 6 sigma, so Deming's thinking is transforming how organisations think about and manage innovation.

Organisations such as Proctor and Gamble, Toyota, Walmart, Disney and many more all apply the principles of IE and in the US, Innovation Engineering can be studied at over 20 universities. The most recent one being University of Houston. The UK is behind the curve. Innovation is still perceived as something of a random gamble. It does not benefit from a consistent approach. How to innovate, systematically, is not widely understood. There is even a lack of belief that Innovation is something anyone who is willing, can learn.

Ofwat's emerging strategy, "Driving transformational Innovation in the sector" highlights the need for systemic change. This is a complex environment, with increasing pressure to change and to innovate successfully to balance the demands of climate change, customer expectations and fast-paced technological change. There is a legacy of business practice and infrastructure combined with a natural aversion to risk, given the regulatory environment, that combine to create an eco-system geared to hampering, rather than enabling innovation.

With an understanding of how to innovate systematically it is possible to build the know-how, restore faith and instil optimism. Innovation Engineering turns innovation from a random gamble to a reliable system for business growth and sustained success. IE, with cross-sector engagement provides the opportunity to catalyse transformation and embed a culture of innovation in the sector.

The consultation paper questions are answered with reference to the research of The Innovation Engineering Institute, much of which is explained and evidenced in Doug Hall's book "Driving Eureka! - Problem-Solving with Data-Driven Methods and the Innovation Engineering System"

Also attached is a paper that summarises some of the common pit-falls that occur when initiating incentives for collaboration.

Q1: *What are the main barriers to innovation in the sector and why?*

A1: The main barriers to innovation are a poor system or the lack of a system altogether.

There appears to be a lack of understanding as to how to create, build and continuously improve a company culture that enables innovation. Even in a risk averse environment, innovation can come about when there is a reliable system. A system ensures leaders are trained to lead innovation, to create a culture and environment where innovation can flourish. A system ensures that employees are trained in their part and can contribute. A system brings alignment, clarity, purpose and continuous improvement.

Where is the operating manual or training programme curriculum for educating new employees? If you cannot see it written down then it does not exist and how can you blame employees for not thinking smarter and more creatively when you don't have a real enabling system?
A system for innovation is a step by step method that employees use to create, communicate and commercialise ideas.
A system for innovation is a step by step method that leadership use to align innovation strategy, evaluate ideas and enable employee engagement.
When you have a real innovation system you can then improve the reliability and effectiveness of your system.

Without a system, innovation success is a random gamble.
Evidence - The systems thinking of Dr W Edwards Deming

Q2: *Do you think that the financial support cited in section 3 is required to stimulate innovation in the sector? If so, what do you believe is the appropriate amount of funding and why?*

A2: To transform innovation from a random gamble to a reliable system requires education. When System Driven Innovation was used in the IntertradeIreland's Challenge Programme independent auditors calculated that £26 of revenue was generated for each £1 invested in training.

Research by the Innovation Engineering Institute shows that to make a sustainable and meaningful change requires 10% of the workforce to have what they call "unshakable belief" in the IE system. This occurs when employees are educated to at least "Blue Belt" certification level in the Fundamentals of IE.

UK Water has around 200,000 direct and associated workers. To educate 10% in the Fundamentals of System Driven Innovation will cost up to £20 million.

If financial support is offered to stimulate innovation, where there is no proven system to increase innovation speed, decrease risk and maximising the probability of success, then investment is a gamble and could be argued to be a poor use of funds. If investment is directed to those who operate a robust, proven system then the funding can be a driver for change. If funding is directed towards education, then positive transformation will happen.

Q3: *Do you agree that our proposed draft principles for additional financial support will effectively safeguard the interests of customers?*

A3: Principles alone are not sufficient to effectively safeguard the interests of customers.

There needs to be alignment through the sector on the most important innovation need(s). The Leadership of an organisation needs to clearly define their strategic priority and how it fits in to the whole so it is clear to everyone where they should focus their innovation effort. That way there is vertical and horizontal alignment and the interests of customers and stakeholders can be safeguarded.
The draft principles are an excellent start.

Q4: *What are your views on the collectively funded innovation competition model which we describe in section 3? What other key considerations not highlighted should we take into account in designing/implementing the competition?*

A4: Research by The Innovation Engineering Institute with over 12000 managers finds that 95% of companies don't collaborate very well. Yet the Institute's data modelling indicates that diverse collaboration will exponentially impact the quantity of high quality ideas created.

The hypothesis is that by rewarding people for hitting the numbers in a competitive environment, then innovation success will be realised. The truth is that metrics without a system simply creates stress that ignites the gaming of the competition to win.
Success with innovation requires passion and dedication from within, that is *intrinsic* motivation (See Steve Jobs "Passion in Work" Youtube video).
The promise of competitive rewards will not sustain innovators through the inevitable ups and downs that occur when trying to discover and develop a true innovation.

Successful organisations, instead use system and culture measures that quantify real and sustainable progress. An example of a system measure is the weighted value of the innovation pipeline. That is the value of all projects that are in Development and aligned to Leadership's strategic priority. For tracking progress towards an innovative culture, an excellent measure is the % of time that employees are engaged in proactive vs reactive work.

Q5: *What are your views on the end of period innovation roll out reward we describe in section 3? What other key considerations not highlighted should we take into accounting designing/ implementing the reward?*

A5: See **A4.**

Q6: *What other potential alternative mechanisms for funding/rewarding innovation not discussed do you think we should be considering?*
What financial support mechanism or combination of mechanisms should we introduce and why?
What should be an appropriate split of available funding/reward?

A6: Funds/Rewards should be provided for those using a documented system driven approach to innovation which has what we call a Define and Discover Phases prior to going to Development. These 2 phases increase the chances of innovation success by 250% yet typically only use 10% of Project Investment.
After these phases a decision can be made about whether to proceed with further investment for the 1st Phase of Development with Functional and Conceptual prototypes. Typically up to 40% of Project Investment is made here.
After that a further decision can be made to Deliver the product, service or system where the final 50% Project investment is made.
By rigorous use of Deming Plan-Do-Study-Act cycles of learning through these Phases, innovation speed can be increased by up to 6x and risk reduced by up to 80%.

By utilising such a robust system for innovation development based on over 26,000 innovations worth $17 billion, funds can be allocated on a more objective basis where there is the greatest chances of success and return on investment.

Q7: *Do you think the potential industry activities discussed in section 4 could help drive innovation? Are there other activities not identified which you think the industry should be considering?*

A7: The activities discussed in section 4 are fundamental to achieving innovation success.
Clearly defined strategy by leadership will enable everyone to be aligned on what is important to the sector and to enable collaborative work on innovation projects with the same collective goal.
In addition the sector needs to identify open innovation tools and software which enable rapid exchange of information, collaboration and research on a global basis.
Having a sector wide innovation system and people enabled to use it will guarantee that innovation will be transformed from a gamble into a reliable system.

Q8: *Do you think the proposals in section 5 will help drive innovation? Are there other activities not identified which you think Ofwat should be considering?*

A8: See **A7** and the paper attached herewith on Collaboration systems.

Helen J M Potter
Co Founder & CEO
Potter Innovation Ltd
e mail : helen@potterinnovation.co.uk
Tel: 07775706046
web site: potterinnovation.co.uk

Appendix:

The 10 Things We've Learned In our Study and Implementation of Collaboration Systems

By Doug Hall Founder of the Eureka Ranch and Innovation Engineering Institute. From his forthcoming book "Innovation Engineering, The Art & Science of System Driven Innovation"

The Innovation Engineering Institute has built a Collaboration Cafe into the IELabs portal. It includes a digital system for sharing and a human system for how to activate it. If you are building your own or evaluating commercial collaboration offerings the following dimensions are what we suggest you look for in your digital and human collaboration system.

1. Idea Competitions Kill Collaboration: Academic research and our field testing finds without a doubt that idea competitions kill collaboration. When ideas are judged with prizes for "best idea" the intrinsic motivation to share ideas and advice is replaced with extrinsic rewards. This works once or twice - but soon no one makes suggestions. It doesn't matter if you evaluate using a team of experts or via crowd sourcing of the vote - the result is the same.

Think about it. If you have 1,000 entries in your "idea" beauty pageant - you end up with one winner and 999 losers. What do you think the odds are that the losers will submit the next time you ask for ideas? Now you understand a key reason why old fashioned or new digital "suggestion box" contests rarely go beyond 2 or 3 rounds.

To ignite collaboration, we must replace competition with cooperation. Collaboration is about the group winning. Done right - ideas are built from other ideas. Let's assume that there are "bad ideas" - here's the chain reaction. Bad Idea + Bad idea + Bad Idea = Decent Idea + Bad Idea + Bad Idea = Good Idea + Bad Idea = Great Idea. If you simply reward the end - you have declared all of those who contributed along the way to be losers. AND - you have lost the ability to access the multiplier effect.

2. Bribing People to Collaborate Kills Collaboration - Related to competing for best idea is bribing people for ideas. There are hundreds of academic studies that validate that intrinsic rewards are far more powerful than extrinsic rewards. Intrinsic rewards mean a sense of meaningfulness, personal satisfaction and pride in work. Extrinsic rewards are cash payments or prizes for contributions.

You can provide recognition for ideas. But recognition must be of the group because it is the group that ignites collaboration, not the individual. For example, you can create a monthly breakfast or pizza party for those who collaborated (requesting or giving ideas) at least 6 times in the previous month. This nurtures a sense of belonging and provides an opportunity for group celebration. If you insist on giving out prizes (and frankly some companies can't resist) randomly draw winners from a hat of those who collaborated 6 or more times that month.

3. Let People Know SPECIFICALLY What You Need Ideas For: As you would expect, we did research among employees on collaboration. Surprisingly the number one barrier was "lack of alignment on what is very important"

Biggest Barrier to Collaboration

- Problem 1. Lack of Alignment on what is very important 45%
- Problem 2: Ego 25%
- Problem 3: Don't know how to collaborate (who, where, how) 16%
- Problem 4: Fear 14%

Problems and inefficiencies within organizations exceed the time available to work on them. Employees are aware of this. To generate momentum for collaboration it's

important to be clear about what you need help on and importantly why you need that help.

When this research came in we changed how requests for ideas and advice are executed in our Collaboration Cafe. We created a simple form that nudged those asking for help to fill in five boxes.

- **Request Name:** Suggestive of what you're requesting.
- **Background Narrative:** Critical background you want responders to know. It's common for this to include the narrative from the Blue Card.
- **Request:** A specific description of what you need help with.
- **Don't Request:** Things you are NOT interested in, if any.
- **Expiration Date:** This aligns others on your sense of urgency.

Clarity of request creates alignment on what you need collaboration on. When I was a Brand Manager at Procter & Gamble we needed a way to make it easy to build a display of our Bar Soap products in grocery stores. The only option appeared to be a multi-million-dollar investment in new equipment to create specialized displayable shipping cases. On a visit to one of our manufacturing plants I gave technicians working the line a specific description of the challenge. After winning their trust and support they started creating ideas. Soon we were cutting open cases, flipping around the product and voila - we had a case that could be created from existing cases. Versus the multi-million-dollar investment option the employee idea required no capital investment and a running cost of just 5 cents per case instead of $1.50.

4. Use the Pull of Mission to Vaporize the Ego Barriers: I am amazed at how scared people are to ask for help.

- •They see asking for help as a sign of professional weakness. • They see asking for help as admitting they are stupid.
- •Their sense of self-worth requires them to know all the answers.
- •They view ideas as a zero-sum game - if someone else has an idea for them, they lose.
- •"Not Invented Here" is culturally considered acceptable behaviour.

    The simplest way to vaporize ego challenges is to refocus thinking on something that is bigger and more important than the individual. When the Blue Card mission is bigger than any person or department it's easier to sacrifice one's ego for the larger cause.

Another way to help overcome the ego challenges is to inspire intrinsic motivation instead of extrinsic. This is accomplished when we are helping one another as people instead of because of the level you have in the organization.

To enable people to help people we have designed Collaboration Cafe to be a "many to many" idea system instead of a "many to one" system. Many to One collaboration systems bring ideas to a central command that screens ideas. Many to Many systems bring ideas to the person closest to the work. This means that people are directly helping people not an unidentified "someone." The result is instead of "showing off" for the boss they are supporting someone in need of help.

The simplest "booster charge" we have found for encouraging collaboration is to say thank you to those who have contributed ideas. When a request is coming to an end in the Collaboration Cafe the system nudges the requester to send out a thank you

note - using a simple click - to those who have requested. Nothing motivates more effectively than the overt, emotional, unconditional feedback of an honest thank-you. Whether it's a child, a friend, an employee or a boss, an honest and direct thank-you works miracles.

5. Design Your System to Address the FEAR FACTOR: As you learned in the Create chapter fear is crippling. When it comes to collaboration fear includes - fear of looking stupid because you need help, fear of exposing secrets inside or outside the organization, fear of being laughed at because your idea is seen as "stupid." The simple way for an adult to avoid feeling fearful is to simply not ask for help or offer help to others. If you do nothing you can't look stupid or make a mistake.

The first step in addressing fear is acknowledging that it is very real. Dissolving fear takes time. When employees perceive that the benefits of collaborating are greater then the perceived "costs" to them they will collaborate.

One way to help build courage to collaborate is to enable people to control their public exposure. We do this in the Collaboration Cafe by allowing them to create private networks for collaboration. Just as they have control over who to "friend" on Facebook or LinkedIn so too they can control who they share ideas with. Another way to build courage is to make it possible for people to respond privately to responses to the request post. This means only the person making the request can see their response - not everyone who the request was sent to.

From a human system perspective, it's important that there be clarity from the leadership of the company, division, department or work group on what can and can't be shared inside and outside of the company/department. It doesn't have to be fancy - just a simple statement of what is confidential and what is not. It also helps to make it clear who an employee can talk with to get an answer if they are unsure on a confidentiality question.

One of the surest ways to kill collaboration is to raise fear, uncertainty and doubt about information security. The most dramatic case of this I've seen was during a recent Innovation Engineering Accelerator project in Italy. Just prior to requesting help from a panel of outside experts, one of the company leaders raised the question of confidentiality. The executive leading the project explained that the outside Collaboration Cafe was private and all on it had signed confidentiality agreements with the company. Sadly, despite this reassurance when the participants had a choice virtually none sent out requests to the outside Collaboration Cafe, they only used the internal Collaboration Cafe of people in the room. Just the hint from the boss that their might be an issue was enough to kill what would have been valuable collaboration.

6. Operationally - Make it Easy to Collaborate: Make it simple and easy to collaborate. The more work it takes to share an idea the less likely people are to take the time to do it. In today's world this means you must have a digital system that is really, really easy to use. The default standard is the Facebook timeline. It must be that simple.

Importantly, your system for collaboration must run on the "computer in employee's pockets" that is their smart phone and or tablet. Make it painless for people to input their ideas, speak their ideas, send photos and or even a video in response to a request for ideas. We have found with Collaboration Care that it's helpful to have templates for different types of requests. Currently we us these four types of posts.

- **IDEA Post -** For sharing news, Ideas or Insights

- **REQUEST FOR HELP Post -** For asking for ideas, insights or advice
- **BLITZ CREATE Post -** For creating a REAL TIME online chat session to create or problem solve.
- **LEARNING REFLECTION Post -** For sharing and asking your team to share "What did you learn?"

    We've also found that in larger organizations it can be hard for people to know who to ask for help across the many departments and divisions. To make it easy to get to the right people we set up collaboration groups of experts on special areas. Classic groups include:

- **Company Innovation Cafe -** For sharing with those who have been trained in Innovation Engineering.
- **Writing Cafe** - For help with communicating ideas.
- **Research Cafe** - For help with evaluating ideas and doing forecasting.
- **Tech Mining Cafe** - For help finding technologies and vendors

A simple human system for encouraging collaboration is morning "stand up" meetings. Verne Harnish taught me about the power of these meetings. They are very quick meetings where each person in your work group gives 1 minute on what they learned the day before and 1 minute on what they are working on that day - with specific requests for help they might need to get their work done.

7. Lead from the Front - A culture of collaboration starts with the leadership of the company/ division or department asking for help. When you open yourself up to needing help you make is socially acceptable for others to ask for help.

When, as the leader, you take the lead in asking for help you start the transformation. When ideas come in you need to be active in responding, behind honest with your thoughts and encouraging of more ideas. You need to make it socially acceptable to have vigorous debate. As Edwin Land inventor of the Polaroid Camera system said, *"Politeness is the poison of collaboration."*

When you, the leader, are open to new ideas, curious about others opinions and embrace diversity of thought then others will too. This means offering ideas to others as well as requesting ideas. Offer ideas - good ideas, foolish ideas, fun ideas, bold ideas. Be a part of the process.

When it comes to leading from the front one of the best I've ever observed is Ken Grier, Creative Director of The Macallan scotch whisky. No one is more open to new ideas and learning then Ken. He is a sponge for learning and ideas. He has architected collaboration partnerships with the producer of the James Bond films, world class photographers and cutting-edge companies like Oakley. My personal take on what drives his openness to collaboration is his relentless passion for The Macallan brand. I've joked that if he got a cut he would bleed Macallan Whisky. His passion is addictive to anyone who connects with him.

8. Invest the Time to Make Collaboration a Habit - The fear and ego issues that prevent collaboration are deep seated. Simply turning on a digital portal will not change that. To make collaboration stick it needs to become a cultural norm or habit. This requires collaboration becoming a proactive idea discovery process not just a reactive fire-fighting tool.

A collaboration culture will not happen without the involvement of leadership. This means among other things asking in every meeting, every day a version of one of the following:

• Who could we learn from?
• Who could we ask?
• Who might know another way of doing this?
• Who has done something like this before?
• Who has retired from the company who we could go ask? • What vendor of ours might know about this?
• What outside expert could help us?
• Who could we get a second opinion from?

One way we have found to do this is to make collaboration among those in our company, division, department or work group employees something that happens every week. This is done by creating a rotating responsibility to post a collaboration request each week. As part of regular department or team meetings introduce the request and provide some stimulus to spark initial ideas. Post the ideas on the Collaboration Cafe digital platform to spark builds on the ideas and additional ideas from employees. To amplify participation, comment on posts. At the end of the week, sort and document ideas into "just do" - "learn more" and "archive." And most important of all write a thank you to those who participated. I fully understand that this will take an investment of some time and energy to manage this system. However, given the exponential potential for diversity to enable Meaningfully Unique ideas the pay-out on the investment of time and energy is a no brainer. And, in the process you will be creating a culture of collaboration.

9. Enable External Collaboration: Internal collaboration creates results. External collaboration transforms companies. Innovative companies like Apple, Google, Procter & Gamble and GE are among the most aggressive collaborators with experts and innovators outside of their company.

I can say with absolute certainty that somewhere in the world there is someone who can help you solve your work challenge faster and more creatively than you can by yourself.

At Procter & Gamble the process of external collaboration is called "Connect and Develop." They have turned collaboration with outside experts into a fine art. One of P&G's top Connect & Develop experts in Europe told me they often use "**inventions**" to find "**inventors**." When they are looking for outside expertise they search for patents, academic articles or entrepreneurial companies to contact. They ask the expert what they are working on now, if they can help with their challenge or if they know someone who can help. The result is they can quickly identify resources that can help them solve their challenge. Organizing vendors, suppliers and partners into an external collaboration network turbo charges your employees' ability to define, discover, develop and deliver Meaningfully Unique innovations.

The Innovation Engineering community calls external collaboration the creation of an Innovation Supply Chain. It's a set of one or more Collaboration Cafes established with outside experts, vendors or even retirees of the company. It starts with sorting vendors into those who are willing and able to innovate versus those whose mission is simply deliver low cost production. It is not uncommon for vendors who are small players in your Product Supply Chain to become major Innovation Supply Chain vendors. Similarly, it's also common for vendors who are high volume low cost

producers to not have the capability or interest in supporting new to the world development projects.

The process of engagement requires leadership engagement because policies within procurement, R&D, legal and finance will need to be adapted. Where before vendors were simply reactionary to your organization's requests for quotes - now some are innovation partners. They invest their time, energy and money in doing development for your organization and as such deserve to be compensated - especially if you desire to have their discoveries to be exclusive to your organization. To amplify their capability, you create alignment on your needs and enable them with digital tools and education.

10. WORKING SMARTER NOW - Enabling Every Employee Every Day. Dr. Dean Schroeder defines the minimum standard for effective collaboration systems as 12 ideas implemented per employee per year. The maximum he's seen is 100 ideas implemented per employee. This level of collaboration can't happen from a central command and control system.

A Working Smarter Now Blue Card is commonly set up by organizations to specifically ask for ideas by everyone in the organization. When fully implemented a chain reaction of positives occur... people believe...people become engaged.. the company can adapt faster to market changes ... the company's offerings are continuously improved... work is fun again.

In simple terms Working Smarter Now is about enabling bottom up ideas. It's about enabling those who are "closest to the work" be it building maintenance, marketing, selling, production, finance, R&D, etc. identify and address ways to work smarter right now.

Most of the front line / bottom up ideas have a low value. However, Dr. Schroeder finds that collectively these "bottom up ideas" often offer 4 times greater quantitative impact then formal "top down" projects lead by continuous improvement experts. That means up to a 400% increase in ideas for goals like cost savings, efficiency or for selling more. Enabling employees is the fastest, easiest way to increase the return on your investment you realize from your employees.

"Teamwork is the ability to work together toward a common vision. The ability to direct individual accomplishments toward organizational objectives. It is the fuel that allows common people to attain uncommon results."

Andrew Carnegie

The commercial value of bottom up employee ideas is just the start. As employees begin to trust in their ideas, and trust in the culture's willingness to listen to their ideas, they become more engaged in their work. They also become a valuable resource in problem solving transformational LEAP innovations as they are being developed.

Implementing ideas from employees is a key reason that Toyota quality and efficiency is so far ahead of other car companies. They enable front line employees to create, validate and implement ideas for working smarter.

The key to making Working Smarter NOW projects work is to have a very clear Blue Card that defines the narrative behind the need for ideas and that sets clear boundaries on what ideas can be implemented immediately versus kicked up to be larger scale CORE or LEAP Innovation projects.

Doug Hall: Driving Eureka! pages 195-203