



Innovative liquidity solution

Adding compelling value to business processes

In times of financial prudence, credit scarcity, retrenchment, solvency risk and everyone demanding more for less, how can business organizations grow their business and profits? How can compliancy in best business practice mean reduction in facility costs? Are there still opportunities to do things better? What if you could add remarkable value to your company products? Or indeed remove an entire manufacturing process? Can innovation in technology really deliver cash savings?

Almost every business organisation (and Government Department) today is unaware of nano-coatings; thin film coatings that are up to 100 000 times smaller than the diameter of a fly-hair! These smart fluids including varnishes and related paints can offer incredible functionality to products; assets and infrastructure, saving businesses and cash strapped Local Authorities billions of pounds in revenue costs.

Smart fluids change surface chemistry, adding value, strength, diversity and functionality. Classic chemistry is unaltered, just our understanding of what happens is new when one controls atoms and molecules at the molecular scale and consolidating new ingredients for stability in robust fluids.

So how can our busy CEO's, SME's and Senior Government Employees benefit from knowledge of these applications?

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Smart fluids (paints, varnishes & thin film coatings) offer every business something new and positive. From enabling entire building and food processing units, health centres to be cleaned (with 75% reduction in aggressive cleaning materials, 40% reduction in water usage, 40% reduction in labour), to preventing wear and fatigue in all moving mechanical parts like lifts, (bearings, gears and pistons). Imagine no mechanical wear! It's not just farmers and drilling rigs that can benefit here. Anyone with large transport fleets can benefit with savings of around 11% in fuel, less maintenance and reduced emissions. Frankfurt Airport reduced the costs of aircraft generators by a reasonable margin by being aware of metal protect fluids. And savvy wind turbine owners and operators know how to keep their blades clean, their gears working and electronics in good shape by being ahead of the game in smart fluid functionality. Some big insurance companies already have their entire buildings protected against employee cross-infection. Hospitals can learn from the risk prevention specialists!

What if we could add this magic protection to CCTV cameras, making the internal heat resisters impervious to corrosive moisture? How much would that save the UK taxpayer? Additionally, one could add more functionality to legacy CCTV's, say the ability to detect radiation! Would that reduce hospital costs and provide superior security to London commuters?

Water and electronics don't normally mix. Would it be good to protect all electronic equipment (+ cables) from the menace of water, moisture and dust? What is the fire risk associated with corrosive cabling in old buildings and underground infrastructure? Sometime the obvious is slow to reach the decision maker. It took bar-codes fifty years!

Imagine sound proof barriers and heat shields at the end of a painter's brush! No more heavy and costly insulation: just a few coatings of paint and bingo your home, office, mobile-fridge, ServerSite or warehouse is energy efficient and BREAM compliant. Could this save your plant and engineering processes revenue? Look at the possible savings in material costs alone.

From textiles to steel, wood, glass, concrete to paper, jewellery and leather, even ceramics; you name it and there are coatings that can add magic functionality. Surfaces can be made super-repellent to water, oil, dirt and grime. In fact most of these materials can be rendered positively antimicrobial also, reducing the risk of MRSA/C.Diff etc. Would this save the NHS revenue?

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What about the food sector? How can these fluids increase hygiene, reduce costs and improve business processes, from grower to processor and onward to supermarket and consumer

Could we improve packaging, could we add additional value? Hundreds of applications exist to enhance seed and root development, to remove risk of drought or over-watering, to prevent toxic river-discharge, and remove bacterial damage to seeds, to eradicate spider-mite in poultry farms, to enhance hygiene across every level of breeding and production

That life can be enhanced for transport infrastructure and city dwellers there is little doubt. Air and enhanced water quality via nano-filters are coming. Hygiene on public transports will improve. Light and colour will improve as materials are selected for new intrinsic value.

Roads will last 100 years, not 20. Bridges will become anti-corrosive. Wood will be naturally protected much like the broccoli leaf and in time deflect termites and dirt. Lots of preservatives and external coatings that sell annually will be redundant. Property by the sea will be painted perhaps once in twenty years, or longer.

The manipulation of materials at the molecular scale offers amazing hope in the fight against disease. Prevention of course is better than cure and our ability to see early stage cancer or cell degeneration offers scope not just to fight disease but extend life itself far in excess to what we imagine today.

Innovation is a step by step process. The big eureka moment is a myth. Whilst today surface coatings offer remarkable value for business process efficiency, tomorrow this technology will transform everything we experience throughout every step of life. So whilst human cell innovation and research is happening now, the market is already offering thin-film coatings that can add compelling value to your business today. Why wait and waste revenue! Smash the mindset that locks innovation and change within your business. Give your cleaning staff a microfiber cloth for Christmas! Remove every item of polish, bleach, wax, detergent and aroma snake-oil from your cleaning cupboards and start to clean environmentally, saving revenue in the process. The knowledge you receive from surface coatings will create numerous alternative innovations as you deploy this new science to every aspect of you commercial and personal life.

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**About the author:**

Dermott Reilly is passionate about making technology deliver. He worked in the food sector for many years where he had hands on experience of wastage and inefficiency in that sector. Over the last decade Dermott spearheaded a number of projects where emerging technologies helped improve business and quality of live. Dermott has four patents registered and helps companies drive innovative projects forward. He is Training Manager EMEA for RFID4U and Strategic Consultant for emerging technologies.

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