

## Capsule Resume

Chris Farrell Ph.D., M.Sc., Cert. Ed., B.A. (Cantab.).

Dr. Chris Farrell is a practitioner and innovation professional with twenty-five years industrial experience - in developing, and managing the development of new products and their manufacturing or service technologies.

In 1978 he became one of the original members of the OMNI technology group at American Can Company. This team executed a bold strategic initiative within the company to replace steel food cans with plastic. He was instrumental in establishing new materials and processes for this very low cost fabrication technology that involves co-injection of five-layer polymer melt streams with subsequent blowing into final shape. He developed novel material combinations, the machine control system, and processes to solve previously unknown cosmetic defects. Five patents relate to this technology and contributed 83MM dollars of new sales between 1987 and 1992; and more since then.

An influential technology forecast he made to American Can's corporate technology strategy began his lifelong fascination with using mathematical methods to gain technology foresight, leading him on the path towards Business Innovation Analysis.

In 1988 he created the OMNI new product development group that designed new sizes, shapes and patented features suitable for convenience eating after microwave heating. These products contributed about 14MM dollars in new sales to 1992, and more since then. He advanced the technology further by replacing the eighty-five year old double-seamed metal lid with plastic. Through consumer research he identified designs that better satisfy user requirements, developed sealing and opening methods and lead the development team. The commercialized version won a packaging award in 2001, from DuPont.

From 1992, as a Director of R&D at Baxter Healthcare, he promoted a new process for materials selection for medical devices. Integrated with manufacturing processes and industrial design, he implemented it through an innovative 'engineer & professor' cooperative training program in conjunction with Northwestern University. It won a Corporate Technology Award. He was the architect of a Right Products Right® process for reducing the incidence of medical device recalls - an acute issue at that time. Several hundred engineers have been trained in its methodology.

In 2001 he went on to create Sure Products Today™ for NASA. Against the recommendation of NASA's Chief Engineer it was not adopted (the shuttle Columbia accident occurred in 2003).

From 1996 to 2003, he lead the design and development of a patented retortable plastic bottle suited to contain school milk products, without refrigeration at Consolidated Container Company. He also led the team that formalized their product development process.

He received his B.A. from Cambridge University (Christ's College) in 1971 and his Ph.D. from Bristol University in 1977.

He has served on the Board of Directors for the Product Development and Management Association and on the Industry Relations Advisory Board of Northwestern University.

He founded Technology Matters in 1999, initially to provide expert testimony in products liability lawsuits and later for their prevention through Sure Products Today™, but since 2004 for developing what has become TechMatt™ Business Innovation Analysis. He became an ASTRA Senior Research Fellow in 2010.

## Selected Publications of Dr. Chris Farrell

- How To Measure Innovation in the Products and Services of Firms and Use it to Explain GDP Growth for the Second Half of the 20th Century, U.S. Department of Commerce (2007)  
[www.techmatt.com/techmatt/Farrell0308.pdf](http://www.techmatt.com/techmatt/Farrell0308.pdf)
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- Container Coating For Increasing Product Outage, U.S. Patent 6,247,603 (2001).
- Technology and New Products – Exploring the Connections, Product Development & Management Association, Visions, October 1998, **XXII** No 4, 21-25 and Visions Editorial Perspective, April 1999, **XXIII**, No 2, 4.
- Survival of the Fittest Technologies, New Scientist, **137** (1859), 35 (1993)
- A Theory of Technological Progress, Technology Forecasting & Social Change, **44**, 161-178 (1993)
- Container with Foldable Handles, U.S. Patent 4,974,742 (1990).
- Container and Seam Ring for Container, U.S. Patent 4,940,158 (1990).
- Polymeric Structure Having Improved Barrier Properties and Method of Making Same, U.S. Patents 4,816,342 & 4,470,944 (1989 & 1988).
- Characterization and Control of Organic Flavor Molecule Absorption into Polyolefin Containers, Industrial Engineering Chemistry Research, **27**, No.10, (1988).
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- Oxygen Scavenger, U.S. Patents 4,702,966 & 4,536,409 (1987 & 1985).
- Laminate Structure for Collapsible Dispensing Container, U.S. Patents 4,626,456 & 4,526,823 (1986 & 1985).
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- Teeth Work Like Shock Absorbers, New Scientist, **89**, No.1244, (1981), 676.
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- The Observation of High Polymer Chain Extension with Two Counter-Rotating Rollers, Colloid and Polymer Science, **256**, 966, (1978).
- Measuring Micro-Death, New Scientist, **77**, No.1086, Jan (1978),138
- Doctor's Orders, Sunday Times Magazine, Feb.27, (1977).
- Direct Ram Extrusion of Polyethylene: A Correlation Between Chain-Folding and Tensile Modulus, J. Mat. Science, **12**, (1977), 966.
- Rubber Elasticity, Physics Ed., **11**, No.6, (1976), 390.