

Capsule Resume Of Chris Farrell Ph.D.

Dr Chris Farrell is a practitioner and an innovation professional with twenty-five years industrial experience - in developing, and managing the development of new products and their manufacturing technologies; many described in his patents, and destined for both the goods and service sectors of the U.S. economy.

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 they continue to contribute today.

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 who 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 continue to contribute today. 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, 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 response to NASA's 'faster, better, cheaper' - in 2000 he created Sure Products Today[™] to guide the practice of rapid product development.

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

He founded Technology Matters in 1999, originally for providing expert analysis and subsequent testimony in several products liability disputes, but for Business Innovation Analysis since 2004.

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

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 has published technical papers in peer-reviewed journals, written for New Scientist and holds eighteen patents.

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).
- Retortable Plastic Container, U.S. Patent 6,520,362 (2003).
- Container Coating For Increasing Product Outage, U.S. Patent 6,247,603 (2001).
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- 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).
- Shelf-Stable Plastic Package Options for the Microwave, Activities Report of the R&D Associates, **40**, No.2, (1988).
- 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).
- Drying Agent in Multi-layer Polymeric Structure, U.S. Patents 4,464,443 & 4,425,410 & 4,407,897 (1984, 1984, 1983).
- Teeth Work Like Shock Absorbers, New Scientist, **89**, No.1244, (1981), 676.
- Conformational Relaxation Time in Polymer Solutions by Elongational Flow Experiments, Polymer, (1980), **21**, 1292.
- 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.