

A REVIEW OF THE DEVELOPMENT OF STENT AND RELATED TECHNOLOGIES

Jim Lawlor¹, Donncha Kavanagh²

1. Department of Engineering Technology, Waterford Institute of Technology, Cork Road, Waterford, Ireland
2. Dr. Donncha Kavanagh, Department of Management and Marketing, University College Cork, Cork, Ireland

INTRODUCTION

The relationship between the unique nature of new stent technology and the development of the stent industry is unclear. Previous research has not characterised the term 'new technology', and so could not investigate its unique impact on the formation and activities of a new industry.

This paper reviews the historical development of stent and related technologies, including catheters and balloons. It describes the development of interdependencies between the related technologies and the growth of the stent industry. It reports on this aspect of research being performed in order to understand the nature of the relationship between a new technology and the strategic activities of a new technology industry.

MATERIALS AND METHODS

A review of the literature and historical resources was performed to compile a richly detailed history of the stent industry. Several primary and secondary sources were exploited, both internal and external to the industry.

Primary sources comprised interviews with employees of several large stent manufacturers, including Abbott Vascular Devices, Boston Scientific, Johnson & Johnson (Cordis) and Medtronic AVE. Externally, interviews were also held with technologists, competitor employees, and ex-industry employees. Secondary information included previous case studies, and publicly available information such as annual financial reports, analysts reports and industry review databases. Further information was accessed from regulatory bodies and industry representative organisations.

RESULTS

To date this information has been used to aid in the development of a model of the relationship between a new technology and a new technology industry.

DISCUSSION

The use of this data will lead to a greater understanding of the relationship between the development of stents and related technologies and the stent industry. This relationship may then be generalised to build a greater understanding of the unique influence a new technology has on the development of an industry.

REFERENCES

- Christensen, C. M., *The Innovators' Dilemma: when new technologies cause great firms to fail*. Boston, Harvard Business School Press, 1997.
- Grandstrand, O., *Research Policy* 27: 465-489, 1998.
- King, S. B. M. I., *Circulation* 93(9): 1621-1629, 1996.