



# AUTOMATION ON THE UPSWING

*GAMBICA's Deputy Director and convener of the organisation's Variable Speed Drives group, Steve Brambley, explains why the invention of the wheel provides valuable insight for succeeding in today's growing automation market*

**T**he wheel is considered one of humanity's major breakthroughs. However, without a decent network of roads, the invention is of little use, which is why litters were still used as transportation in Britain until the 18th century. One reason was the poor quality of roads, which made vehicles with wheels impractical, slow and sometimes unreliable.

Like the wheel in ancient times, many inventions and innovations today aren't very valuable unless they are part of a bigger infrastructure; a larger, more complex system. Just like many other technologies, industrial automation realises the most benefit when it is integrated in a systematic way. In order to be successful, businesses and governments need a coordinated, long-term strategy.

Automation can often make an attractive business case, because ROI

(Return on Investment) in this sector is quantifiable. Automation products such as Programmable Logic Controllers (PLCs) and Variable Speed Drives (VSDs) respond to an organisation's need for adaptability and energy efficiency.

By using intelligent control methods and taking input from sensors, other machines and other systems, real-time decisions can be taken automatically, to optimise the process. For instance, adapting the motor speed to meet the real-time power requirements using a VSD can often save 30% or more of the amount of energy used by industrial electric motors. This reduces costs and maximises ROI.

In order to keep the momentum and encourage manufacturing companies to invest in growth, the main requirement is political and economic stability. Building on this, automated

manufacturing players from around the world have been experimenting with leading-edge initiatives and business practices.

## **INDUSTRY 4.0**

Industry 4.0 is a new concept which was unveiled to the world at the 2011 Hanover Fair in Germany. It refers to a highly inter-connected stage in industry, a shift towards decentralised self-organising factories and a higher level of communication between machines. Some of these technologies already exist today; the shift would simply mean using them on a larger scale and integrating them in the industrial process.

Industry 4.0 would allow industrial machines to communicate with each other and the products they manufacture. It would also grant more autonomy and decision making

capabilities to individual machines and would encourage higher degrees of customisation. Alongside the German Government, Siemens has played a key role in promoting the concept and including it in future strategies of industry leaders. Industry 4.0 smart factories will represent a highly competitive advantage for manufacturers.

## INVESTING IN INNOVATION

Growth is impossible without investment. Some countries are currently more active than others in allocating funding to industrial automation. Historically, Germany is a key international manufacturing and automation player. This explains why the country currently invests ten times more than the UK in this sector.

The German federal government has made approximately €200 million available to help industry associations, research institutes and companies develop implementation strategies for Industry 4.0. Coordinated efforts and research projects such as the RES-COM project or the Intelligent Technical Systems OstWestfalenLippe (it's OWL) cluster, have already been launched.

Other areas of the globe are also following this investment trend. The Asia-Pacific region accounts for more capital expenditure on industrial automation products than anywhere else in the world, with 46 per cent of global investments in 2012, equivalent to \$76.6 billion.

Strategic investment, particularly in research and development is essential for any organisation that wants to be at the cutting edge of industry. However, few can afford to make these efforts single handed. The best way to invest in innovation is to become a part of a knowledge and business community dedicated to the common goals.

## RESEARCH CLUSTERS

Research clusters are collaborations between public and private sector entities, researchers and universities. The purpose of these clusters is to develop innovative products and services, and create a strategy for implementing them in the business sector.

Germany's it's OWL cluster unites intelligence from 173 companies, universities and research institutes. They are all working together to develop products and technologies to make businesses more competitive. The project explores technologies like

intelligent sensors, drivetrains, automation solutions through machines and networked production plants. These technologies are then made available to a wide number of SMEs via transfer projects.

RES-COM is a project founded by the German Ministry of Education and Research, which promotes a sustainable approach to limited natural resources and raw material, as well as reducing carbon footprint. The vision of RES-COM involves the conservation of resources through highly interconnected and integrated sensor-actuator-systems, be they embedded, cyber or physical.

In the UK, a similar, if recent initiative, is the Catapult Programme, which includes several technology and innovation centres around the UK. It's an opportunity for business, science and engineering leaders to work together on research and development. The purpose is to commercialise new ideas and products which will, in turn, help economic growth.

The High Value Manufacturing Catapult aims to stimulate growth in the manufacturing sector and double its contribution to the UK GDP. The centre will do so by linking businesses and research institutions and by accelerating new concepts to commercial reality. It addresses specific market needs and boosts the UK's competitiveness internationally.

## STRATEGIC PARTNERSHIPS

Building strategic partnerships with companies and countries around the world is another key way of boosting business prospects. In this context BRIC countries are valuable partners. They represent emerging markets where European manufacturers can easily offer their products and services. More importantly, BRIC economies are growing extremely quickly and strategic partnerships would result in long-term benefits for all parties involved.

A successful example comes from Germany in the form of funding for the Industrial Automation Training Centre (IATC) in Panchkula, in the north of India. The public-private partnership is supported by the German government, Siemens and IAG Automation. IATC offers a wide range of high quality industrial training programs which particularly focus on automated industries and emerging technologies. The target group covers all levels of working professionals and engineering students, while also providing training



for disadvantaged strata of society.

IATC is the result of a strategic partnership which goes beyond the business world and has a positive social impact. It is an example of shared knowledge which empowers all the parties involved and can represent a building brick for a long-term relationship.

Similarly, the UK government is encouraging such initiatives within different industry sectors including automotive, technology and professional or business services. Trade and membership bodies, like the UKTI, CBBC (China British Business Council), CLPA (CC Link Partnership Association) and GAMBICA can also provide practical knowledge and networking when building strategic international business relations.

An invention is often useless without a supporting environment, just like investments could be hit and miss, unless integrated into a long-term strategic plan.

Roads are an excellent example of what can be achieved through cooperation and selflessness. Similarly, the future of automated manufacturing relies strongly on partnership and the ability to work together with other individuals, organisations and governments to create sustainable growth and common progress.

**Tel: 0207 642 8080**



*GAMBICA is the Trade Association for Instrumentation, Control, Automation and Laboratory Technology in the UK. It has membership of over 200 companies including the major multinationals in the sector as well as smaller and medium sized companies.*

*The Association's primary objectives are to further the successful development of the industry and to promote the competitiveness and profitability of member companies.*