

# Electronics 2015 – peak and bleak scenarios

Crystal ball gazing is always a risky business. But here are some considered 'Peak' and 'Bleak' scenarios for the UK electronics industry, based on the EIGT consultation exercise, and visions of the sector and UK plc 10 years from now if the key recommendations are taken on board (peak) or ignored (bleak) by Government and the industry.

## Government and industry (Chapter 3)

### PEAK scenario 2015

1. Government has a well-informed understanding of the electronics industry, and has a policy framework that plays to UK electronics industry strengths. The policy framework enables the industry to be 'world-class', as a star performer on the international stage.
2. Public procurement is used as a showcase for UK and world-class capability, creating an environment which catalyses innovation and generates new business opportunities. This results in improved public services, infrastructure and productivity. UK electronics capability is recognised and often favoured for public procurement, particularly for products and services supplied by SMEs.
3. Inward investors beat a track to the UK. There is a healthy balance of inward investment and indigenous investment. New businesses and inward investment improves our ability to supply global markets, and raises the industry's investor profile. Major multinationals see the UK as the 'place to be' in the long-term.
4. The Electronics Alliance is a powerful, influential and trusted voice for a rapidly evolving industry, offering strategic leadership. The sector is more focussed and devotes critical mass to technologies that play to our strengths. There is a single body which has strong capability in key cross-cutting areas, vis à vis the regulatory impact on the supply chain, new technology and research priorities.
5. The industry has leaders with vision and the ability to communicate effectively nationally and internationally, in a way that inspires industry and young people. The UK is seen as a global player in multinational technology initiatives, standards and protocols, in concert with leveraging numerous business opportunities.
6. The new generation of electronics industry companies are seen as world leaders – based on expertise in design, systems integration, exploitation of new materials and strong synergies with other sectors.

7. The financial community has more realistic engagement with the technology providers, boosting the success rate of technology spin-outs, and enabling them to grow and thrive, as well as allowing numerous companies to expand to the next level. More electronics companies feature in the FTSE 500.
8. The industry has more visibility to investors and people considering career opportunities, and the science base engages more effectively with UK companies. Managers, and the business community in general, understand better the opportunities offered by new and emerging technologies.
9. The UK has a regulatory environment that facilitates growth and innovation, as business seizes new regulatory policy as opportunities for first mover advantage. The Government gets the regulatory, tax and investment environment right, as a priority.
10. Education and research communities and policy makers work together to deliver a joined-up vision for the industry. Industry coalesces around a few major initiatives that will attract sufficient funding to have a real chance of success. Critical mass R&D attracts high value added investment, which is turned into real prototypes, products and services.

### **Bleak scenario 2015**

1. The Government takes no notice of the electronics industry. Foreign companies gain the lion's share of Government contracts, with most products imported because of the lack of UK capability. The balance of trade deficit in electronics will become increasingly negative.
2. We lose procurement intelligence. There is declining value for money in public expenditure, and public services decline.
3. The UK is no longer seen as an attractive investment location for global OEMs, because we no longer have a strong R&D base.
4. Innovation is stifled and our best technology ideas are exploited abroad.
5. The industry remains fragmented.
6. Many UK firms go to the wall due to lack of management leadership.
7. New regulations are seen as a barrier and cost-contributor rather than a revenue generator, and the UK loses competitive edge with introduction of new legislation.
8. More electronics and physics departments in universities and colleges close down.
9. The skills gap widens.
10. The financial community continues to ignore this sector.

## Market sectors and technology (Chapter 4)

### Peak vision 2015

1. UK is recognised as a major source of world-class, independent semiconductor design. The UK maintains its position as Europe's largest independent semiconductor design industry, representing 40% of the design houses and 40% of the design revenue.
2. UK electronics underpins world-class performance in other sectors, so that the GDP contribution is increased significantly.
3. The UK electronics industry shares knowledge between design houses for a new generation of semiconductors via a new e-based infrastructure. This new infrastructure acts as a magnet for innovation, inward investment and new business development.
4. UK has increased its global share by successfully addressing growth markets. We are in the Top Three nations pioneering capabilities in emerging technologies, such as organic and carbon-based electronics, nanotechnology and bioelectronics. Our electronics design capability is stronger and extends to emerging technologies.
5. We are at the leading edge in the provision of electronic solutions for environmental services, waste and water management, recycling and sustainability.
6. Public Government procurement programmes in key sectors are designed to be a major spur to growth and competitiveness across the board. For example, our transport infrastructure is seen as a national asset, underpinned by innovation using UK-developed technology.
7. We maintain or upgrade our position in active sectors (e.g. defence, system design), and make significant advances in security, ID, health, IT and other sectors.
8. The UK is territory of choice for inward investors. We also attract business R&D and their links with our universities re-stimulate UK interest in electronics.
9. Our science base is enhanced. Our bank of IP continues to grow significantly, and we make more than simply licensing revenue from it. UK companies are able to protect IP for major competitive advantage.
10. We are a major exporter into emerging export markets across Asia, while maintaining our position in North America.

### Bleak vision 2015

1. We miss the boat in gaining lead position in new disruptive technologies due to lack of appropriate networking between Government, industry and academia.
2. We fail to match growth in existing sectors and don't take advantage of regional opportunities.

3. The electronics industry fails to gain any leverage from Government procurement e.g. health, defence, and the like. This results in the UK being a follower instead of a leader in terms of innovation.
4. All innovation from our science base is exploited by global multinationals, because there isn't an indigenous UK industry.
5. Lack of IP protection in Asia places UK electronics in a worse position than other nations.
6. Most of our electronics industry moves offshore.
7. Our electronics design skills decline so previously strong sectors are weakened by lack of product/innovation renewal.
8. Foreign interests exit due to poor UK environment in terms of skills, academia, taxation, etc.
9. We lack sufficient business leaders, managers or technologists.
10. Most UK business managers remain uninformed about technology issues to a far greater extent than Europeans, and we lag far behind the Americans.

## **Innovation (Chapter 5)**

### **Peak scenario 2015**

1. The UK is seen as a leader in innovation and exploitation – considering innovation across the board, as electronics plays such a pervasive role in all walks of life.
2. The UK is recognised as a key driver for innovation and productivity, with high impact on other sectors including healthcare, security, defence and a new generation of consumer products and services. Innovative UK electronics companies feature in the Top 10 worldwide in several areas.
3. The UK is a centre of gravity for international activity in new and emerging fields.
4. Innovation creates jobs, and more importantly GDP. New initiatives promote the industry and boost recruitment.
5. There are spin-offs in other industries, as electronics is a key enabler in other sectors. The sector fosters a more entrepreneurial and less risk averse culture, with individuals and companies using their wealth to develop new business.
6. Significant, high value IP is generated. UK companies gain access to leading edge R&D, leveraging new business opportunities and partnerships at home and abroad.
7. The UK industry has strong visibility worldwide for electronics design and high value-added manufacturing capability.
8. Despite lack of manufacturing in the UK by 2015, we secure our design effort and support organisations in their R&D initiatives and service operations.

9. There is a dynamic relationship between universities and industry for commercial exploitation of new R&D, spawning new SMEs and medium-sized enterprises of all descriptions serving the global market.
10. Foreign OEMs choose to locate more high value-added departments in the UK.

### **Bleak scenario 2015**

1. The electronics industry continues to decline, with a marked fall in the number of electronics, activities and percentage of GDP.
2. Our design capability dribbles away to areas that have manufacturing strength, like South East Asia. Loss of electronics impacts on other areas of industry.
3. The UK suffers loss of prestige internationally. The standard of living falls.
4. There is a continued brain drain, as smart people go where there is activity.
5. The VCs are even more risk averse to the electronics sector.
6. There is a spiral downward that is difficult to pull out of.

### **Supply chain vision (Chapter 6)**

#### **Peak scenario 2015**

1. UK companies have access to a central databank of supply chain management (SCM) best practice. Consequently, many UK electronics companies achieve elements of best practice in SCM:
  - With better analysis and understanding of customer needs on inventory, supply flexibility, and costs associated, e.g. landed costs;
  - Better strategic decision-making regarding 'make or buy';
  - Better use of e-business, not simply for procurement.
2. The UK maintains its position as a significant EU player in the global supply chain.
3. UK companies are closely involved in design and prototyping for volume manufacture.
4. UK electronics firms are closely involved in the strategic, decision-making process for volume manufacture, sourcing and distribution. Consequently, the UK is a popular choice for location of key value-added departments.
5. The UK continues to manufacture high value-added products, though typically in low-to-medium volume.
6. The sector plays a pivotal role in new environmental and industry-related legislation, taking advantage of any opportunities and adapting products and business models accordingly.
7. Environmentally, UK companies exploit the opportunities associated with end-of-life management, e.g. for reverse logistics and repair.

### **Bleak scenario 2015**

1. EIGT recommendations are mostly ignored and the electronics industry declines.
2. Because electronics is a pervasive technology, decline in the sector results in loss of competitiveness and collapse in other sectors.
3. Production continues to move offshore, including low volume manufacture and prototypes, based on flawed analysis. Once that production is lost, the UK is unlikely to regain that manufacturing capability.
4. Design follows manufacture abroad and the UK simply becomes a sales base for electronics products.
5. New UK-developed product introduction is rare.
6. UK companies fail to benchmark against global best practice. Many firms become uncompetitive, unproductive and die.
7. Use of e-business remains an aspiration rather than a reality, and the failure to embrace e-business results in the collapse of many SMEs.
8. The UK has little or no profile in the electronics market.

### **Chapter 7: Skills**

#### **PEAK vision 2015:**

1. The sector is seen as a good place to find a career. Electronics skills are in demand – particularly in specialist and niche areas. So we overcome the cyclical ups and downs of the electronics sector.
2. The UK builds on its reputation for being a nation of improvers and innovators. We link innovation properly with IP development and funding – all underpinned by continuous people development and upskilling.
3. The education system is more synchronised to business needs and responds in a shorter, more flexible cycle in response to industry demands.
4. There is a strong maths and science base in school leavers.
5. There is far better retention of our postgraduate talent. Most of the best engineers stay in electronics as a vocation.
6. UK industry has world-class managers at every level. They are strategic thinkers and display visionary leadership to inspire the workforce, the City, potential employees and investors.
7. Management is flexible, innovative and forward thinking, harnessing changes in the global supply chain, as an opportunity rather than a threat.
8. The workforce is diverse and able to work flexibly.

9. Technologists have strong business skills, operating in a highly strategic rather than tactical way. Acting in a climate that fosters strategic thinking, companies think and plan for a long-term vision.
10. The image of the electronics sector improves and encourages regular tie-ins between education and business. Industry will be able to attract the best talent for all functions.

### **Bleak vision 2015:**

1. Whereas 7,500 UK enterprises employed about 420,000 in 2004, employment is halved by 2015 or even worse in the doomsday scenario.
2. Management and leadership skills simply aren't up to the job.
3. The UK electronics industry loses competitiveness because it does not have the skills to innovate or compete globally.
4. Training provision is out of touch with industry needs. Training budgets are vulnerable to short-term expediency.
5. The industry loses more business offshore due to global price pressure. There is an accelerated loss of employment in the sector. Those companies that survive have to do more and more to remain competitive, with continuing lack of Government support.
6. As we continue to lose critical mass, there is major loss of key capabilities on the people side. For example, most colleges and many universities cease offering any electronics courses.
7. The gender divide continues and industry sticks rigidly to inflexible employment practices, which deter men as well as women. The industry becomes increasingly out of touch with the female dimension of the customer base.
8. Industry continues to recruit in its own image and, therefore, draws limited talent from an ever-declining pool. It also denies itself innovative ideas from other sectors. At the same time, electronics is considered to be even less attractive to young people.
9. We don't get to grips with adult training in the workplace. (In 2004, most of the electronics workforce was over 25, so 93% were ineligible for most streams of training funding.)
10. There are severe skill shortages and industry does not rise to the challenge of a global supply chain. As staff grow older in the electronics sector they simply can't be replaced. There are few new entrants into the electronics business, and few design graduates. UK universities and colleges mostly train young designers for work abroad, then we lose the courses and the skill base.