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Where Science Fiction Meets Reality

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Glossary

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Jeff Patmore's role combines the contemporary with the futuristic; from the exploration of applications supported by new and emerging technologies to the analysis of the conceptual. Jeff leads The Strategic University Research Programme at BT Exact. It is the organisational means by which BT collaborates with some of the leading academic institutions around the world - in the USA the Massachusetts Institute of Technology (MIT) and University College Berkeley (UCB) - in the UK, Cambridge University, Essex University, Goldsmith's College, University College London and many more.

Jeff's previous role as head of BT's Internet and Multimedia Research Programme was an ideal springboard into the futuristic role in which he is now immersed. To me, as a frequent visitor to his office, he unerringly demonstrates a thirst for learning and an enthusiasm to articulate and demonstrate how variously described technologies could be deployed to advantage. His office bookshelves are stacked with journals, academic papers and books, and he regularly reviews video summaries of technology propositions from academics around the world.

I asked Jeff to explain BT's rationale for collaborating with academia, given the pre-eminent status of its own world-class research laboratories. "Even with our significant resources we cannot hope to explore the full breadth of some rapidly expanding fields which may affect our business in the future. Neither can we hope to test all the business applications these technologies may support. Collaborating with universities - undergraduates and postgraduates - expands our capability, and the research results in a synergistic and highly valuable collaboration for both parties."

Disruptive Technologies, the network for the 21st century, wireless-communications, and location-based services are some of his topics of focus.

His role at BT is business critical in this unpredictable, faddish and dynamic world. Jeff's work takes him into what the outsider may view as the realms of science fiction. In reality, there is always a serious business objective behind his interests and BT sponsored research is never 'blue sky'.

However, an innovation that recently caught his attention was demonstrated with spectacular visual effects and digital stereo.

In the film Minority Report, set in the year 2054, Tom Cruise plays the part of a policeman (Captain Anderton) working in the pre-crime department. Anderton's remit, as one might conclude from the department name, is to prevent the occurrence of criminal activity. His specialism is the prevention of murder and he is assisted by the predictive powers of a small team of psychics called 'pre-cogs'.

The pre-cogs communicate by projecting a series of visions for Anderton to view, select and manipulate. Anderton's role is to sift through these visions, discard some, request new, acquire clarification and ultimately interpret them.

The visions are presented in an auditorium style environment and Anderton selects those he believes relevant and manipulates them - moving his hands and arms up, down, and around in a rigorous visual language, bringing visions forward, intensifying some and discarding others. He runs through this process until he can identify where the potential crime will happen, who will commit the crime and how to apprehend the assailant - before time runs out and it actually takes place.
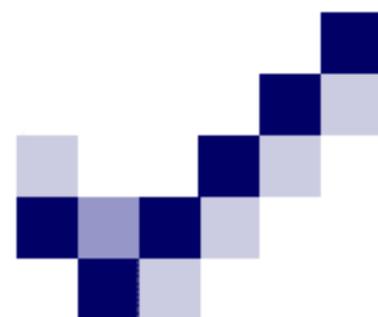
That's the science fiction, and now for the reality: the visual language that the fictitious Captain Anderton uses was developed by an academic from the Massachusetts Institute of Technology (MIT) and is the basis of ongoing BT sponsored research. The application that Jeff is analysing with BT scientists in collaboration with MIT relates to computer interaction using a common visual language in environments unsuitable for a keyboard, mouse or voice.

And while that's all still in the early stages of research, some technologies which have the potential to provide lifestyle enhancements are already being implemented in test environments today. Jeff explained: "Take Radio Frequency Identification (RFID) tags". They first appeared in tracking and access applications during the 1980s but 21st century technological advances and lower cost of manufacture have revealed their feasibility for contemporary use. "For us, the development of new applications based on RFID tags is an important area of research".

Supply chain management is one of the obvious applications and some retailers are already running trials. Bar codes have their limitations. On a higher plain, BT is part of a consortium exploring a range of sophisticated applications from personal security to recycling and re-use of materials. Wireless communication and location-based services are the technologies here and Jeff's Strategic University Research Programme is playing a major role.

However, Jeff's big focus is on Disruptive Technologies. It's a term based on the principle that every so often in any business, massive change occurs and the rules of that business shift to another paradigm. The Internet is an example. It provided (and provides) great opportunity to spawn new businesses and reduce costs, and it can also impede, disintermediate, or destroy other businesses. There are numerous examples from ticketless airlines (which spawned budget airlines and disrupted established carriers) to voice-over-IP-technology (which is providing increased opportunities for some telecom operators and a reduced income for others). Another example is online book retailing and the disruption this has brought to established literary retailers. Nothing stays the same forever.

With its arms outstretched to universities, the major objective of BT's Strategic University Research Programme is to provide the company with advance visibility or early warning, achieved by creative thinking and innovative output from a technological, business process, product and service perspective.

Unencumbered by ongoing, everyday commercial pressures which may cloud the visibility of opportunities, academia provides BT with stimulating interaction and fresh thinking. It's a business critical contribution when one considers the number of markets to which BT provides communications products and services, and therefore the number of markets which are vulnerable to change and the focus of competitors.

Bottom line, BT faces challenges similar to many other large businesses and it has similar objectives to address them: to move resources from areas of lower productivity and yield, to areas of higher productivity and yield, by the means of creative business thought and innovation.

The challenge is, how? Hordes of companies throughout modern history would have navigated differently had they known what was going to happen next. The objective of Jeff's Strategic University Research Programme is to provide BT with just that - knowledge and foresight.

Acknowledgement

This article was written by Richard Walker, Managing Editor, Ragtime.

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