

# A Society of Minds

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At the last count nearly 1BN people were connected to the internet, with almost 70% of North Americans and 35% of Europeans having access to a connection: these numbers are accelerating every year. It is thought that it will not be long before every child attending school, in the northern hemisphere, is provided with a laptop computer with fast internet access.

So what will it mean for our children to have access to the sum of human knowledge at the click of a mouse? To get some idea of the answer we need to look at the children and young adults of today. They have grown up in a world where access to knowledge is easier than it has ever been before. What changes we are seeing in these students?

As human beings, we perceive and understand the world through a model that we constructed as young children and have modified through age and experience. Our world model not only allows us to understand the world around us, it also gives us a common framework for communication, and within this framework concepts can be understood without detailed explanation. Since the industrial revolution (the last significant technology revolution), this world model has been dependent upon both our age and country of origin with most people in a single geographic area having a similar model since, in general, their early life experiences would have been much the same. And, conversely, children growing up in an isolated village in the Amazon basin would have a radically different model to children growing up in Cambridgeshire, UK, for example.

Today, when we examine our young adults we find that they do not have the geographic boundaries (physical or mental), that previous generations held. Travel outside their country of origin is far more common than ever before, in higher education they are far more likely to mix with students from across the globe and, of course, they have grown up with the ability to access vast amounts of knowledge at the click of a mouse.

The ability to access this knowledge is coupled with the ability to freely share and discuss it; not only with local communities but with groups anywhere in the world. When students are interacting through on-line discussion groups, they often have no idea where other people are physically and it does not matter, what matters is the richness of the dialogue, the exchange of knowledge and experience. Geographic boundaries are suddenly becoming irrelevant.

As a consequence, the world model that these individuals hold has evolved much more rapidly than in previous generations. What we are seeing today is a revolution, on a scale not seen since the industrial revolution and what makes this such an important point in time is that the revolution is not limited to a small group of leading nations, it is happening almost everywhere!

With the rise of wideband or 'Broadband' access to the internet, another key change has started to occur. With narrowband access you can read text and look at images, but with wideband access students can watch video and multimedia content. It is one thing to read a famous paper by a leading scientist or world figure, it is quite another to watch that person talk about their work. The subtle body language, the passion, the depth of knowledge is suddenly there for the student to see. More about the person themselves is revealed and this allows the student to modify their view of that person, and to update their world model.

For example, we are probably all familiar with 'Moore's Law'<sup>1</sup>, some of us may have even read Gordon Moore's original paper, but it is not until you watch a video interview with Gordon, where he looks back at his predictions and talks about how they came about, that you really understand the man and his work. The interview gives us context as well as knowledge. It allows us to really understand the thinking which took place, which in turn enables us to up-date our own views.

Today's students are comfortable with this new world without geographic barriers and, moreover, they are demanding an openness of communication that has previously been unheard of. Collaboration is fast becoming the way to work, with businesses building new 'virtual' partnerships to gain commercial advantage. Online collaboration between individuals is also now a major force. Wikipedia is a model that we would just not have believed possible a few years ago. If I had forecast that an online encyclopaedia would allow all users to edit its content I would have been ridiculed, but here it is and it is being seen as a key knowledge resource and a great model for effective collaboration: our model of how we can work together and share knowledge has changed overnight. There will be those who will fight against this openness, because they find it threatening, but, in the majority of cases, they will finally embrace it because the positives out-weigh the negatives, for everyone.

Governments can find this threatening, for some the thought of their populations being able to freely discuss topics with anyone else in the world, instantly and without control is of great concern and it is not just the conversation that worries them it is the possibility that their people's view of the world, their world model, will be influenced by that conversation and that this may cause them to question their governments position on key issues. In a world where all information is openly available governments find it very difficult to conceal facts!

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<sup>1</sup> Definition of Moore's law. Visit [www.intel.com](http://www.intel.com) to watch the video interview.

The world is undergoing a truly major change in both our perception of it and the way in which we communicate our thinking. Who would have believed 20 years ago that an American would spend four years training with a Russian, in Russia, for a joint mission on a space station in orbit around our small blue green sphere; that he would chat about it openly on a video link from the space station to an alumni event at MIT, that was streamed live on the internet for anyone to watch, and that students watching it would not be surprised at all by this? (see 'MIT World' for an archived copy). Events like this are happening everyday all around us.

The next ten years will see more old barriers to free communication and collaboration crumble and the ease of access to knowledge increase to a point where literally anyone anywhere will be able to call up the totality of the human knowledge base and discuss and debate it with others. We will become a global society of minds.



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Jeff currently leads an innovative research initiative involving a large number of Universities, Institutions and Business Schools across the planet, investigating the future of Information and Communication Technology (ICT). He also leads a programme, which builds links between schools and world-leading thinkers in Science and Technology. Major partners in the research include Cambridge University, MIT, University College London, Essex University and University of California, Berkeley. Prior to this Jeff was Head of BT's Internet and Multi-Media R&D programme.

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Tamsin's role is to facilitate sustainable relationships between the University and leading external organisations. Her focus is on companies in the ICT sector, bringing companies into contact with the University's diverse strengths in technology and its impact on the individual and society. Prior to joining the University in January 2003 she was a telecoms analyst with Analysis Research, commenting and advising on the Eastern Europe market. Tamsin also has extensive experience in marketing and holds a post-graduate Diploma from the UK's Chartered Institute of Marketing.

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