Computers of tomorrow to be powered by wind and sun

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"Innovative approaches to global-scale monitoring, generation of information and interpretation and analysis are needed to realise this goal, together with new technological and legislative frameworks.

"Our research embraces the use of sensors to provide information needed to better manage traffic flow, while maintaining the privacy of individuals."

Digital alternatives to physical activities

There has already been a major shift to the digital world in our daily lives at work and at home, reflected by the wide scale adoption of electronic messaging, digital media and the web.

In the future there may be greater changes so that the primary way we operate for the purposes of wealth creation and entertainment is in cyberspace, says Prof Hopper.

"This will reduce the impact of our activities on the physical world while allowing societies to grow sustainably. New tools, environments and infrastructures are being conceived that will make an accelerated shift to a digital world that is enticing, effective and rewarding for us all."

Arguments continue to rage over whether global warming is happening and whether we should act, but the Computer Laboratory research team has no doubts about the difference computing can make to the planet.

Prof Hopper said: "Computing has had a huge impact on the way we work and spend our leisure time. In the last 10 years alone, the Internet has revolutionised communications and miniaturisation has put immense computing power literally in the palm of our hands.

"While these advances have delivered exciting opportunities, there have also been accidental side effects that already contribute to greater sustainability.

"Take the MP3 player. It's a handy way to store and access all of our music, but it has also reduced the number of CDs manufactured and shipped around the world. There are many such examples. Imagine what could be achieved if the power of computing was truly focused and harnessed to deliver real environmental change.

"But computing is not the solution in isolation. We need to work closely with other disciplines such as materials, biology, economics and environmental science. Only by pulling together these areas of expertise can we hope to make a positive impact on our environment and the way we live."

Autonomy unveils upgrade

Autonomy Corporation, a global leader in infrastructure software for the enterprise and this newspaper's reigning 'Business of the Year,' has announced a further technology upgrade.

The Cambridge company has unveiled advanced features for its Pan-Enterprise Search platform, IDOL (Intelligent Data Operating Layer).

CEO Mike Lynch said: "Despite standardisation efforts, information is scattered across the enterprise among different vendors' software, in different formats, and among numerous servers and laptops.

"Autonomy's Pan-Enterprise Search platform is the only FRCP-compliant enterprise search platform available in the market, delivering a single unified and vendor-neutral platform for searching all file formats and media-types for legal and business purposes."

New features include:-

• Drag and Drop Personalisation – a next-generation functionality enabling users to personalise their information delivery by dragging content of interest into a custom box.

• IDOL Deep Video Indexing Advanced Features – Autonomy has further enriched its rich media support by providing powerful technologies for DVI and analytics. DVI differs from other technologies and uniquely tackles the challenge of asset identification and management through its use of groundbreaking methods and technology.

• Geo-Cluster Maps – IDOL has enhanced its support for geo-efficiency by providing visualisation tools to represent document density per location, allowing the administrator to quickly assess usage patterns and make informed decisions about load balancing.

• Intent-Based Ranking – this ranks results not simply based on popularity, keyword matches or other legacy algorithms, but automatically tailors the results to the user's purpose and the specific query, making search more effective and efficient.

• Interlinking – By automatically identifying sub-areas of the document for which there are relevant links, IDOL creates a seamless delivery of related information to the user.

• Multi-Dimensional Index & Query Throttling – By using a multi-dimensional index to provide valuable information to the distribution components, IDOL precludes bottlenecks and unbalanced peak loads during the indexing and query process.

Business needs super-fast fibre link

by Tony John

Frustrated industry leaders meeting in Ipswich warned that the progress of scores of UK businesses could be held back by technical, economic and political hurdles restricting fibre-to-the home (FTTH) technology deployment.

The Centre for Integrated Photonics Ltd (CIP), an East of England Development Agency owned hi-tech business based in Martlesham, saw around 40 delegates from major players in the industry, government and universities come together to discuss the issue.

The one day workshop examined how ready the UK is for the rollout of a Next Generation Access (NGA) Network. The workshop examined why the UK is lagging behind other European countries in rolling out a broadband network capable of offering up to 1Gbit/second capacity, a huge increase on today's broadband speeds.

Stephen Holton, CEO of CIP Ltd said: "A high bandwidth fibre-optic network to each business and home is a vital element for business competitiveness and will transform the access to video services such as IPTV, Video-on-demand and social networking websites like YouTube."

The Centre for Integrated Photonics at Martlesham, Suffolk

It was concluded that whilst the technology problems have been solved, there is an uncertainty in the regulatory position causing UK investors to be wary of long term investment – even if it is low risk.

CIP, which has gone from strength to strength since it was bought from US company Corning Inc by EEDA in 2003, is the leading R & D company in photonics, the technology behind modern telecoms networks.

High speed access is now available in South Korea and Japan, with trials in many other countries. The infrastructure required is a fibre-optic cable dedicated to each household or business, to replace the copper wiring that the UK has at present. However, first trials are only just being planned in the UK.

Gerlas Van den Hoven of Genexis, a Dutch SME which makes and installs NGA networks in the Netherlands, said that once customers experience the enhanced service offerings of very high speed broadband they were willing to pay a premium and service take up was extremely good.

Denmark and Sweden are also leading the way in Europe and the French government is promising legislation this spring to roll out NGA in France.

Holton concluded: "It is clear that there is a strong and growing demand for very high speed broadband that can only be delivered by the deployment of fibre-to-the-home. Without this infrastructure, there is the very real risk of a negative impact on businesses, in particular the creative industries in the UK."

'Real time' digital discipline makes it the four R's in UK education

Pioneering software is revolutionising teaching and improving behaviour in UK secondary schools.

i-behave is an electronic behavioural management system that allows teachers to record pupils' good and bad behaviour as it happens and instantly involve a network of parents and teaching staff via automated emails.

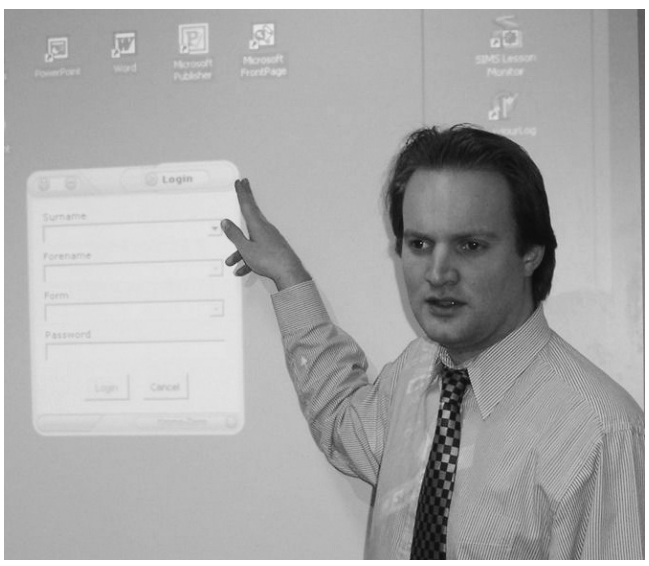
With 'Real-time' digital discipline in use academia can now rightly claim that the four R's are dominating UK education.

The network can involve parents, form tutors, key stage coordinators and where necessary, the senior management team.

All incidents are centrally recorded and schools can use the data to analyse best practice and areas for improvement by time, teacher and subject and share this information quickly to drive the improvement agenda.

The innovative system, created by UK-based Isis Software in conjunction with Chesterton Community College, Cambridge, is radically transforming behaviour in UK schools.

i-behave enables high-profile monitoring of behaviour throughout the school day as it happens; streamlining the recording of behavioural data. It gives teachers the convenience of easily recording good and bad news with teaching staff able to digitally log behavioural incidents in seconds.



Writing's on the wall for behavioural trends, says Richard Kirkby

Due to it's ease of use, i-behave – already in place in many UK secondary schools, also massively increases the amount of good news going home to parents (one school reported sending 15,000 items of good news to parents during the year – an average of 15 per pupil).

The immediate reward of praise by several parties for good behaviour encourages students to work extremely hard to achieve well in lessons. Parents and pupils are responding to the positive behavioural management approach offered by this hi-tech teaching aid.

One head remarked: "i-behave has drastically transformed behaviour at our school. Even the most challenging students work consistently hard to achieve the reward of a 'good news' email. On a daily basis we get emails back from parents thanking us for the good news they have received."

Jon Ford, assistant head teacher, Chesterton Community College, Cambridge said: "i-behave designers have identified and addressed the need in schools to act quickly when pupils are 'dipping' to get early intervention in place Identifying trends of behaviour.

"The system also crucially enables the celebration of pupils' achievements and applies consistent, accessible behavioural management."

Isis software director, Richard Kirkby added: "Chesterton Community College approached us looking for a system that would not only monitor and analyse behaviour but also help encourage praise from teachers and importantly for this to be instantly communicated to parents.

"At every step we tried to make the system simple to use so as to encourage its use and held the efficiency of recording as a key priority. Teachers historically feel that they should record incidents of poor behaviour but simply do not have the time to do this for low level good behaviour – we wanted to make a system that would change this."

The cutting-edge software is uploaded with student names and groups and is configured to fit the whole school behavioural management policy (covering a comprehensive list of all levels of behaviour from rewarding a helpful pupil to sanctions that warrant exclusion.)

The new system also prompts the user with the school's appropriate reward or sanction. The fast, efficient, flexible system can send instant praise e-mails to pupils giving schools the power to communicate to anyone who needs to know how a child is behaving daily.

One school head told Business Weekly: "In the past year, since implementing i-behave, we have recorded 27,000 good news events and sent home 19,721 emails to parents. We now have a ratio of good-bad behaviour of 5-1 which has dramatically increased since we introduced the electronic system."

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