

The Ring

The Newsletter of the University of Cambridge Computer Laboratory Graduate Association

Governing Council: Chairman: Prof Andy Hopper (TH78)

Members: Stephen Allott (T80), David Colver (CHR80), Peter Cowley (F77), Richard Jebb (DAR88), Lorenzo Wood (CHR93)

Careers Committee Chairman: Peter Cowley

Members: Andrew Herbert (JN75), Sean Moran (T70), Chris Morgan (JE01)

Ring News

By the time The Ring goes to print, **Carl Dellar** (CHU PhD81) will have hosted the first US Valley Ring Drinks Party. Over 30 Computer Lab grads living in the Valley area are getting together at Carl's house on August 25th. Following his holiday in Canada, Professor Andy Hopper will be making a diversion to join everyone.

If you weren't able to make this party but are interested in future US Valley events, please let us know.

Event Calendar 2006

November 28th 2006

Time: 19:00

Venue: Peterhouse, Cambridge

Roundtable Discussion Event with Professor peter Guthrie "The role of technology in sustainability"

Peter Guthrie is the first Professor in Engineering for Sustainable Development.

A civil engineer with geotechnical specialisation by background, Peter has worked on roads in countries such as Nigeria, Lesotho, Sudan, Philippines Ethiopia, and Botswana, and on major infrastructure projects such as Channel Tunnel Rail Link, CrossRail, West Coast Mainline Route Modernisation and Birmingham, and Manchester Airports, and major building projects such as Eden Project Phase 4, and large scale schemes for the Prison Service and the Ministry of Defence. He has advised on policy matters related to waste and environment in Russia, Mauritius, Seychelles, Romania and Portugal.

He was involved in the founding of RedR, a charity that provides engineers and other personnel to relief agencies in disasters. In recognition of this initiative

Ring

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he was awarded the prestigious Beacon Prize for charitable giving in 2005.

As a former Director of consultants Scott Wilson he was responsible for the establishment of their Training Division, the management of the firm's design of the Channel Tunnel Rail Link, the setting up of the Environmental Division, and its growth over ten years to some 150 professional staff.

He is an active Trustee of the charity, ITDG (Intermediate Technology Development Group) and Chair of the subsidiary company ITC, and Trustee/Director of Engineers Without Borders (*EWB*) which is a student inspired organisation which seeks to help students make a contribution to the relief of poverty through improved awareness and field projects linked to research.

He was awarded the OBE in 1994. He was Vice-President of the Institution of Civil Engineers in the late 1990s. An invitation form can be found on page 16.

Job Bulletin Board

To post a job on the Bulletin Board, simply go to the Business & Professional link on the website and click on Job Bulletin Board. From there, click on 'Create Job Advert.'

OFFSHORE, ONLINE, OPENSOURCE

By Stephen Allott

In January of this year, Anthony Jenkins of Red Gate Software Ltd., a Cambridge software tools company, contacted me to ask if I would like to be the speaker at the first in their series of Technology Horizons seminars. I immediately agreed. Not only is Anthony charming and persuasive but I have been very impressed with Red Gate ever since I first met them in 2003 at a talk I was doing in the Computer Laboratory on software company sales management. Anthony asked me to talk about current trends in software. After a day or two, I phoned him back to say that my talk would be called Offshore, Online and Opensource.

On 26 April 2006, about 40 people came to Westminster College to hear the talk. I had never heard of Westminster College, let alone set foot in it before, so it was a delight to find how nice it was. It's located next to Magdalene College on the Madingley Road. The audience came from both the Ring membership and from Red Gate's contact list. Most were from Cambridge but a few had come up from London.

These 3 big trends in the software industry, offshoring, application service provider ("ASP" or online) business models and open source are each having a big impact. These trends are important to end users, consultants, channels and software producers (independent software vendors or "ISVs"). Most of the audience came from ISVs.

Software is now a huge industry worldwide. According to data published in Software Magazine, the US software industry has sales of £183 billion in 2003 and was growing at 14% p.a. compound. Adding in the sales of software companies based outside the US takes the figure even higher. We work in a big business. Offshoring has grown enormously, not least in India.

Employment in Indian software and IT services reached 700,000 people in 2005, growth of 19% over 2004. When you compare 700,000 people to the 5,000 to 10,000 working in software in Cambridge, you realise just how huge the Indian software industry has become. India is the bulk of the offshoring market and it's their largest export industry. Software has grown in India because of their:

- ¶ Skills
- ¶ Tax breaks
- ¶ Good legal system
- ¶ English language
- ¶ Low labour costs

China by contrast has a software industry 10% of the size of India's. Different regions around the world tend to go to different countries for offshore development. The UK and USA use India. Western Europe goes to Eastern Europe while Japan goes to China. Understanding how end users and ISVs make decisions about whether to outsource or go offshore depends on appreciating the different circumstances that can exist. I showed the audience a standard "Make/Buy" decision matrix which explains how the frequency of purchase, on one axis, and the specificity of the asset, on the other axis, determines your make/buy decision. Asset specificity simply means whether the thing you are buying is special to you. A box of matches is not specific to you. A custom designed building or a tailor made suit is specific. When regularly using commodities, your make/buy decision depends on security of supply.

R & D in a software company at scale is only 15% or so of the costs of a business. Trying to save a bit of that cost simply won't make much difference to whether you succeed or fail so, on that basis alone, offshoring won't be very significant for many of you. Early stage companies who need to focus on winning business and meeting customers' requirements will find offshoring even

less significant. The only class of ISVs where offshoring will be important will be very mature companies where all that remains is to reduce development and support costs.

Overall, offshoring is hard to do well. Many people in the audience commented that they had had poor experiences with offshoring or knew other people who had. It's also not going to make a big difference to the business success of an ISV. Consider building your own facility offshore rather than outsourcing via a contract. Overall offshoring is driving down costs in the software industry. Turning to the online (ASP) market; this is more like £3 billion p.a. rather than the £200 billion of the overall industry. ASP is small but significant. Overhyped during the dot com boom it has come back in certain key niches. Salesforce.com is the best example. For software and technology sales, this is a revolution. There are many reasons:

- ¶ Easy sign up with a low monthly user charge (vs a huge spend on your own CRM system)
- ¶ No maintenance
- ¶ Access from anywhere via a web browser
- ¶ Sales managers can easily check sales rep activity levels
- ¶ You keep the contact data if you fire your rep
- ¶ The software embodies functional process state of the art: in other words, you can use the process software used by some of the best in the industry.

In which areas will the ASP model work well? User screen entry rather than infrastructure integration; access from anywhere rather than a fixed terminal; younger companies without functional process expertise and IT operations functions seem like the best bets to me.

Summing up, in the right circumstances, ASP is a revolution in software which completely cuts out the channel. It's great for Cambridge software companies because you can develop and sell around the world without leaving the office.

Finally open source; 15 years ago I worked on the demutualisation of a large non profit data network co-operative. This prompted me to think about the logical ownership structures of natural monopolies. In history, there have been many natural monopolies whether water supply or stock exchanges. State ownership or community non profit or co-operative ownership are all well established. I remember musing that operating systems are natural monopolies and that these should be co-operatively owned. In 1992, at McKinsey where I was, no-one seemed very interested in my point. Now open source is proving this point. Open source is mostly about the success of Linux.

A 2004 Forrester survey found amongst large end users that 60% were already using or planning to use open source. Open source has arrived. The top reason for adoption is low cost. I think this is particularly the low cost of trial and development. Licence costs are only 30% of an enterprise software implementation so it's not about the absence or a licence fee. It's more about the fact that Linux runs on cheap (Intel) hardware and that Linux is the adoption of driving open source. Apache is number 2 followed by My SQL. Heavy end users like Google and Amazon are big users of Linux as is the public sector. Linux is growing in the City as well.

For ISVs, open source won't save a dying business, like Netscape, but it can be a great way of getting cheap marketing exposure. Launch an open source product. Build awareness. Then launch a proprietary version into the open source user base. I know one software company that has had 100m downloads of its open source code. Support is key for open source. Red Hat and IBM are the 2 big players in support. IBM has cleverly backed open source and appears to be doing very well with it.

Software continues to grow but is globalising and this is driving down prices. In the right niches, ASP models are dynamite. Open source is here to stay.

Stephen is founder and a Governing Council Member of the Ring. He is executive chairman of Trinamo Ltd and past President of Micromuse, a London origin software company. Stephen is also a City Fellow of Hughes Hall, Cambridge.

Ring Competition

Peter Cowley was recently sorting through piles of old paperwork and came across a Computer Science Tripos paper from June 1976. He has offered 4 pints of Abbot (see question 13) or a bottle of good wine to the person who provides the best set of answers. Please send your answers to jan.samols@cl.cam.ac.uk. Entries for the competition close on November 1st 2006. The winner will be announced as soon as the panel of judges has marked the papers!

COMPUTER SCIENCE TRIPOS Wednesday 9 June 1976 12 to 2:30

PAPER 0

Do not attempt to write on both sides of the paper at once

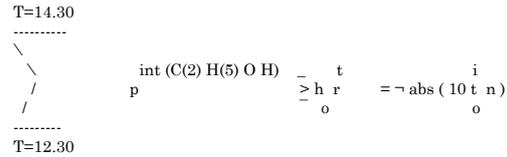
Full marks can be obtained by enclosing 4 five-pound notes with your answers.

Do not attempt more than n questions, where n is the lowest integer > 2 such that

$$n \quad n \quad n \\ x \quad = \quad y \quad + \quad z \quad \text{for integral } x, y, z.$$

1. Describe the difference between the first, second and third generation lecturers with special reference to the nostalgia invoked by mention of:

- a) EDSAC III
- b) TITAN
- c) PDP-7



2. Either

Design a WISP program to simulate a professor

Or

Show, by considering the halting problem of experience, that it is impossible to decide when a lecturer will finish.

3. Explain why it is impossible to guarantee that an interruption will not cause a synchronous unstoppable lecturer to make an error.

What precautions must be taken to minimise the risk?

4. Describe the concept of definition and undefinition at the first and second pint of ANSI standard supervisors.

Explain how to extend this to the basic standard using shorts.

5. Either

Design an efficient operating system for a large multi-access computer such as the IBM 370/165. Particular attention should be given to:

- a) A logical command structure
- b) An efficient scheduling system
- c) A cost effective currency conversion system (IBM/10P/CCU)
- d) A self-refreshing fluid allocation controller

Or

Describe the differences (if any) between a mouse, an elephant and the CAP machine

6. Discuss your stability as the result of the equation:

Show that there exists a k such that for all i > k, the solution, like, Johnny Walker, still goes strong.

Show that there exists a k such that for all i > k, the solution, like, Johnny Walker, still goes strong.

- 7. Discuss Chinese T-shirts.
- 8. "Yea, from the table of my memory, I'll wipe away all trivial fond records."

Hamlet, Act I, Scene V, line 98.
By the Bard.

Discuss in relation to garbage collection.

- 10. Is KM10 u-recursive?
- 11. Discuss the importance of altitude in writing ALGOLW programs.
- 12. Discuss the relative merits to unstructured programming of the DONT loop, the COME FROM statement, and the unassigned DONT COME FROM statement.
- 13. A physicist believes that he has discovered a new particle which he calls a querk which has the anomalous collision behaviour now described:

When two particles collide their relative velocity is unchanged, but their absolute velocities become equal in magnitude and of opposite sign. Also after a collision both particles become transparent to other particles for 1 time unit and so do not take part in any further collisions during that time, though they continue to move while transparent.

In a particular experiment, N of these querks lie on a finite straight line with absorbing objects at each end. Querks may be absorbed even if they are in a transparent state.

Discuss the special merits of the 'Eagle' as opposed to the college bar, with special reference to Ruddles and Abbot.

14. A proposed design for a committee coordinator provides the following facilities for use with in a staff meeting:

ACTIVATE LECTURER N
DEACTIVATE CURRENT LECTURER

and the following for use in interrupting dialogues, themselves regarded as non-interruptible:

ACTIVATE PROFESSOR N

The coordinator associates an alcohol level with each lecturer and always executes the most uninhibited lecturer first.

State additional facilities which must be provided to make the system usable.

15. Discuss the difficulties involved in writing a re-entrant lecturer.

16. Show that all problems in computing can be solved by dynamic -structured virtual in direction.

High-flyer in the IT crowd

By Justin Mullins

(This article was first published in the New Scientist on May 27th 2006)

ANDY HOPPER is an enigma. As head of the computer laboratory at the University of Cambridge, nobody could argue that he hasn't excelled as a computer scientist. Yet Hopper has been equally successful in his other career as a high-tech entrepreneur.

In total, Hopper has started or co-founded 13 companies, perhaps most famously Acorn Computers in 1978, the company that built the legendary BBC Micro computer on which many a budding computer scientist cut their teeth in the early 1980s.

As a measure of his success in business, Hopper flies his own six-seater Cessna aircraft from an airstrip in his back garden near Cambridge. That's unheard of for an academic. Hopper is that rare British scientist who has managed to excel in both academia and industry. The question on my mind as I travel up to meet him at his university office in Cambridge is: how has he done it?

Hopper turns out to be lively and inquisitive, with a faint eastern European accent. Born in Poland, he moved to the UK in 1964 at the age of 10 when his mother married an Englishman. He credits his stepfather with triggering his interest in computer science by giving him a train set that could be assembled and reassembled in endless combinations, just like the microprocessors he went on to play with later.

Early days

His anecdotes are revealing. Unable to speak good English when he arrived, he languished near the bottom of his class until his stepfather offered him £1 for every place he moved up the ranking. Within months he was top of the class and £27 the richer - a tidy sum in those days. "I spent the money on another train set," he says.

What to make of this? Hopper is a man who learned from an early age how it feels to make money, to be driven by money. Perhaps that explains his impressive record as an entrepreneur, but I suspect he is more complex than that.

At the University of Cambridge, where he was awarded his PhD in 1978, Hopper worked on high-speed communication networks and the chips that keep them running. He helped build one that ran at 10 megabits per second and later upgraded it to 100 megabits per second. Not bad for 1980 - that network was over 10 times as fast as a typical domestic broadband internet connection more than a quarter of a century later.

Then came the transformation from bright academic to entrepreneurial goldfinger. Hopper says the culture at Cambridge encouraged him to go a step further than simply publishing his work. "The tradition here is to have a broad perspective that includes the practical side of things. I've always been involved in the very practical end of things and my mentors have recognised the value in this." By giving people time out from their other duties to explore new ideas, the university nurtures these green shoots.

Back in 1978, no companies were manufacturing the technologies to make high-speed networks run, so Hopper set up his own company, Orbis. He then co-founded Acorn Computers. "I got lucky. By the time I was 25, I had a dozen engineers working for me. It went public before I was 30."

When Acorn was bought out by the Italian computing company Olivetti in 1985, Hopper became director of the newly formed Olivetti Research Laboratory, an industrial lab that was later funded by the software giant Oracle and finally acquired by the American telecommunications company AT&T.

It was here that he honed the management style he had developed at Acorn. "I'm very comfortable to delegate and empower those below me. I call everyone 'boss' to turn the hierarchy on its side."

This approach seemed to work. Hopper's labs produced over 200 papers, 120 patents and several successful start-ups under his leadership. His shares in these companies could have been worth millions. "But I didn't sell at the right time," he says. It is obvious that Hopper does not live on the breadline, but it is becoming clear that it is not just the money that motivates him.

Blowout

In 2002, Hopper's world took an almighty hit. The collapse of the dotcom bubble pitched his parent company,

AT&T, into troubled waters. In the midst of a global reorganisation, the company pulled the plug on Hopper's lab. "They told me only the night before. I even found two buyers for the labs but AT&T didn't want to sell. It was awful," he says. Meanwhile, his other investments in IT were suffering. "At one point, I almost went bankrupt."

Even today, Hopper cherishes the idea of once again running an independent industrial research lab. The failures of other labs, such as the now-defunct Interval Research funded by Paul Allen in Silicon Valley in the 1990s, do not dissuade him. He has the kind of confidence that is hard to knock down.

From the ashes of his research lab, he formed a number of start-ups. Hopper's favourite is RealVNC (Virtual Network Computing), which has issued over 100 million licences for software that controls one computer from another. "It's probably the most profitable company in Cambridge," he says. "When I walk into a lecture theatre and ask how many people use VNC, usually more than half the hands go up. That gives me a real buzz. It's like a drug."

There is more to come. He says VNC has some similarity to the internet telephony service Skype, which recently sold for \$2.6 billion. "Of course we have plans for world domination but I can't say too much about that." He's not even half-joking.

In 2004, Hopper returned to the University of Cambridge as head of the computer lab he runs today. The culture here is something Hopper clearly values - the university has had a huge influence in turning the Cambridge high-tech cluster into the UK's answer to California's Silicon Valley - but forces beyond his control are imposing changes. The university has recently introduced a centralised department to control intellectual-property rights. The way the university sees it, the process of technology transfer needs to be coordinated so that it can reap the financial rewards when an idea hits the jackpot.

Hopper is worried. "There is no such thing as technology transfer. It is people who transfer technology." If researchers have to think twice and consult an extra department, perhaps they won't bother. "I understand why they've done it but a barrier has popped up where there was not one before. There is no upside for us."

That's hard to accept for a man whose next company could be a mere phone call away. Hopper says that with the right idea, he could raise a quarter of a million dollars in half an hour on the telephone. At least that's how he used to do it. Today, he'd need permission from the intellectual property team. Hopper's point is that red tape often stifles innovation, and the way he works in particular.

It's not money or even wealth creation that is eating him: "My worry is that people will not be able to follow in my footsteps." It's a strange statement. He explains that he wants his students to be able to achieve success in the same way he has done, because "it's the best way of doing it".

Is it a legacy that Hopper wants to create? Is that what drives him? Perhaps for Hopper, as with many other successful men, it's not just success that's important but the acknowledgement of it. I probe for more. He strikes me as a man who could do well in Silicon Valley, the high-tech melting pot where some of the world's greatest technology companies were born. In Silicon Valley, nobody cares where your accent is from or what your parents did. In fact, I wonder why he hasn't been tempted.

"Sure, the headhunters call. I say I will take your offer seriously but you have to match what I already have. I live within a 10-minute drive of my office and I have an airstrip in my back garden. They never call back. Not even Bill Gates has that."

Equivalital

Peter Cowley (*F MA77*) has become involved in both commercializing and raising finance for the Equivalital, a physiological monitoring product that has been designed to detect trauma in military, emergency services, lone workers, the elderly and infirm, as well as provide a training tool for sportsmen. The product is being trialled and many organizations are investigating its use throughout Europe and the USA. Technically, it is light (75g) and battery powered and using various sensors, provides ECG, heart rate, breathing, temperature, activity, posture and cognitive data either in raw form or as a "physiological welfare index". This is displayed locally on a PDA/laptop or transmitted back via a military/GSM/Tetra radio system to a control/triage centre. For more details go to www.equivalital.co.uk.

Hall of Fame Profile

In the latest in the series of articles profiling companies founded by Computer Lab graduates, 'The Ring' was delighted to talk to **Suranga Chandratillake**, co-founder and CTO of **blinkx**. Suranga is a graduate of King's College.

TR: Suranga, can you run me through your career up to the point of founding blinkx?

SC: After and during College I had a number of software related jobs – I spent some time in the City and tried my hand at a couple of start-ups too. There were three really experiences that probably stand out the most – watching and helping some friends found their own start-up while at College (a very positive, exciting experience); getting laid off by Trilogy Inc in the US during the bust (a not so positive, lesson-filled experience); and joining Autonomy PLC in Cambridge (experiencing a company that did well during the boom, but understood how to maintain that success through and beyond the bust).

TR: Can you tell me why and how you started blinkx?

SC: I'd been with Autonomy for a while and was, at the time, their US CTO. Having worked on a particularly length integration (we'd just acquired a company called Virage in the US) I took a sabbatical for a couple of months. I returned to my desk and discovered I had over 3000 emails (true human emails that is – after the spam detection and after mailing lists/etc) and spent over a week just organizing the information. And that really was just organizing; I didn't actually reply to a single one until a week later. At that point I was convinced there was a need for technology to help us all deal with the information overload on not just a corporate or enterprise level (the market Autonomy focused on), but also on an individual, single-user level. That led to realising that consumer search (then and now dominated by the small box on google.com's front page) was seriously limited which, in itself, led, to the foundation of blinkx.

TR: How was the business model of the company developed?

SC: The success of Google (and Yahoo/Overture) at monetizing search very simply but very effectively has been a strong driver in the development of the business models of consumer-focused search related companies and blinkx is no different. Our conceptual approach to search (as opposed to the coarser keyword approach used by the bigger players) is yet more powerful in that it allows us to be very accurate about what someone is interested in at any given point in time. We can use that understanding of user *intent* to commercialize extremely effectively.

TR: How does your approach to video search differ from your competitors such as Google and AOL?

SC: It's a common misconception, but Google doesn't actually have video search. Google hosts video (at Google Video) and you can search through that relatively limited silo of content, but that's it – there's no ability to find a

video that actually lives on bbc.co.uk, for example. AOL's video search comes from two companies it acquired, SingingFish and Truveo. In all cases, these search technologies are limited in that they use just metadata to index and understand the video – that is they read the textual tags that content publishers add to the content. They don't actually watch or listen to the video itself *at all*. blinkx is fundamentally different – we watch and listen to every video we index in order to extract more objective information on the content.

TR: What content do you index and is it free for users? What about content from commercial providers?

SC: Our aim is to be as broad and deep as possible. Most players in the 'video on the web' space are focused on building their own walled garden of content. Google Video, Youtube, AOL all fall into this category. The problem is that the internet's all about lowering barriers to entry and while these players have great video sites today, there are already tens of thousands of other good sources of video that will only get better and more competitive. We aim, therefore, to really get content from everywhere – whether you want to watch that viral video of the skateboarding dog or you want to compare Fox News, BBC and CNN coverage of a recent political event, you can do it all at blinkx TV. In all, our index now spans over four million hours of audio and video content and is, by far, the single largest multimedia index on the web.

All of the results in our system will link to playable, free content. Some of the sites will then try and sell you more content (eg an online movie rental site might show you a trailer for free but charge more to download the whole movie), but we're pretty obsessive on the idea that every thing you click on blinkx TV will lead to a bit of actual video or audio.

Regarding actual sources of content, we both spider the web looking for any freely available video and sign various content deals to get access to content

that lives in those harder to reach places like some of the ‘dark web’ archives some sites run. We’ve been very successful at getting those content agreements in place—we have around 80 at this point including names as diverse as Reuters, HBO, MTV, YouTube and Sky News.

TR: Video search must be very dependent upon good voice recognition technology. Did you develop your own speaker independent large vocabulary recognition system and how does it differ from other voice recognition systems?

SC: You’d think, wouldn’t you? The funny thing is, although speech recognition is clearly extremely useful (and probably essential) for deep, objective search of video content, we’re the only player using it freely on the web. We actually license and use technology from my previous employer, Autonomy. Autonomy got the technology from its acquisition of a company called SoftSound. Both Autonomy and SoftSound were started by Cambridge alumni (Dr Mike Lynch OBE and Dr Tony Robinson, respectively) and both were founded upon the basis of research completed while they were at the University.

While a lot of people build voice recognition systems, most are either single-speaker (where the system trains to understand a single, given user) or multi-speaker, fixed vocabulary (where the system learns a relatively small vocabulary of, say, banking terms or train timetable information). In both those cases, the problem space is pretty small and can be attacked pretty efficiently. We, instead, have to index content about almost any topic being spoken by anyone with any accent – from a Texan Podcast on US domestic policy, to an Indian-born Brit talking about hip hop music. That’s a much harder problem and Autonomy is one of the few companies in the world to be able to solve it both accurately and at the scale we require.

There are a number of differences, but the one that matters to us is that Autonomy uses its conceptual search

technology in conjunction with the speech recognition to better evaluate what was probably said in a piece of content. Many words and phrases sound extremely similar if listened to in isolation, but if you understand the context within which the words were uttered you can make a lot more sense of it. Humans do this all the time, Autonomy/SoftSound are leading the way in applying this approach to technology too.

TR: Are podcasts also incorporated into the blinkx search engine? How would someone submit their podcast to blinkx?

SC: Yes, absolutely. It’s easy to tell us about content you want indexed – just go along to www.blinkx.tv, click on the ‘upload video’ link and then follow the prompts.

TR: What technical challenges are you working on now?

SC: There’s a never-ending battle with scale. As the internet gets faster, more people use it to distribute audio and video and we have to keep up with the volume. We already have large co-location facilities in the UK, US and China and running them all, 24x7 on a start-up budget involves lots of clever software architecture. In addition, speech isn’t the only way we want to understand video so we’re also working on a number of ways to get visual information from the videos we index.

TR: How do you see the market maturing over the next couple of years and how will blinkx respond?

SC: I think, in ten years time, most of us will look back on this period of the internet being primarily a text resource as being laughably old-fashioned. The reality is that people like video; whether it’s for professional content and entertainment or sharing moments in life with family and friends, most of us find capturing video more natural than writing or even taking photos. As the internet gets fast enough to support this desire, we’ll see a continued explosion of the available video on the web and we’ll all need a reliable place to search

through it all – blinkx TV is entirely focused on being that place.

TR: What successes are you proud of?

SC: Setting up a search company in 2004 is a taking the David and Goliath story rather to the extreme. I'm extremely proud of my team who didn't let this daunt them in the slightest and instead built (and continue to build) a great product.

TR: Finally, what is the most important thing that you have learned about business?

SC: The value of the message. I know lots of very clever technical people who work very hard at turning their ideas into reality only to see their companies fail, either during the funding process or upon launch. More often than not this is down to poor marketing, a lack of understanding of the value of PR and an inability to really communicate what the value of their product or technology is. We were lucky to have advisors who banged this particular mantra into us from day one and it's proven to be critical in our successes to date.

Hall of Fame News

Adventiq (founded by Andy Hopper) has announced details of its first product, a system-on-a-chip designed for remote KVM (keyboard, video and mouse) control of PCs and servers.

Artimi (founded by Jack Lang) has moved its worldwide sales headquarters to Taipei, Taiwan.

Bango (founded by Ray Anderson) has won a "Meffy" award at the Mobile Entertainment Forum's annual award ceremony, recognizing the impact Bango's direct-to-consumer offering is having on growing the mobile entertainment marketplace.

Winner of the Mobile Services category, the Bango Service enables brands of all sizes to promote and sell their content to mobile users around the world.

blinkx (founded by Suranga Chandratillake – see Hall of Fame Profile on page 8) has announced an agreement with both The History Channel UK and Trouble Homegrown. Users will now have access to hours of historical audio and video content on the web as well as entertainment channel Trouble Homegrown's videos.

CacheLogic Ltd (founded by Adam Twiss) has announced the closure of a US\$20mio Series C funding round led by Amadeus Capital Partners, strongly supported by existing investor 3i along with syndicate members Pentech Ventures and The Cambridge Gateway Fund.

CacheLogic will use the new funding to expand sales coverage for the company's established P2P technologies into new geographies and extend its product portfolio to provide support for the delivery of legitimate video content.

Codian (cofounded by David Holloway and Will MacDonald) has now dedicated sales and support teams in Beijing and Guangzhou to service the company's growing customer base in Northern and Southern China. Codian has been operating in China from its office in Hong Kong since January 2005.

Jeff Maynard has joined the board of **Envisional** (cofounded by Ben Coppin). Maynard was one of the founders of Netstore plc and spent many years leading the technology arms of British Airways and Cable & Wireless.

Encoded Media (founded by Tom Sillence) has moved into offices in Denver, Colorado in order to provide a better and more focused service to its growing number of U.S. customers.

Insight Studios (founded by Tom Griffiths) has won Best Web Design at UKFast Network Awards. According to Lawrence Jones, head judge at the awards, "Insight Studio's is a contemporary looking site with meticulous graphics and a page to page consistency that feels effortlessly achieved."

Insight Studios also received a commendation for their ysbryd.co.uk in the Best E-commerce Site category, becoming the only company to be awarded twice.

Linguamtics (cofounded by Roger Hale, David Milward, James Thomas and Sylvia Knight) has appointed John Brimacombe as Executive Chairman.

Ring member John Brimacombe has a track record of founding and building successful software businesses, namely Jobstream Group plc and Mforma Group Inc. His roles have included President, CEO, COO and Chief Strategist, and he has been involved in or led fund raising rounds totalling more than US\$50mio.

nCipher (cofounded by Nicko van Someren) has announced enhancements to its keyAuthority™ suite to deliver automation, scalability and availability for widespread data encryption.

Newnham Research (founded by Quentin Stafford-Fraser) has raised US\$13.25mio in a Series B extension round of venture capital to help the company expand the development and worldwide marketing of its interactive networked display software and semiconductor technology. Following this round, the company has now raised US\$21.75mio of capital.

Operis Plc (founded by David Colver) is holding an 'Introduction to Project Finance Course' on September 1st 2006. The course sets out to demystify the jargon and provide an appreciation of the commercial issues of a project finance transaction. It will be of benefit to anyone involved in a project finance contract who needs to understand the financial implications of project finance deals.

Sophos (co-founded by Jan Hruska) has been awarded the Virus Bulletin 100% award by Virus Bulletin magazine. This is the 33rd time that Sophos Anti-Virus has won a VB 100% award, confirming its position as one of the most powerful virus protection products available.

Tideway Systems (founded by Tim Coote and Duncan Grisby) will be exhibiting at Interop New York 2006 Conference and Expo on September 9th 2006. Interop is the leading destination for technology buyers and sellers.

Trinamo Limited (founded by Stephen Allott) has announced the launch of its second business unit, a technology reseller business called "Trinamo Solutions". The Trinamo Solutions Security Architecture will deliver to enterprise organisations a robust and auditable security solution from their network perimeter end-points through to the core of their applications infrastructure.

Ubisense (founded by Andy Hopper) has introduced its value-added reseller (VAR) Program to support the development and deployment of innovative tracking applications using its real-time location system (RTLS).

The Ubisense VAR Program offers solution providers worldwide significant growth opportunities and competitive advantage by utilising the Ubisense RTLS platform to rapidly deliver to market new location tracking products as well as enhance the functionality of existing solutions.

XenSource (founded by Ian Pratt) has introduced a comprehensive channel partner program for companies planning to deliver virtualisation solutions based on the Xen hypervisor.

The program is significant as it enables system integrators, hosting service providers and consultants to expand their company's core virtualisation skills by providing expertise to help end-users plan and deploy Xen virtualisation solutions based on XenSource's XenEnterprise multi-OS virtualisation platform.

Zeus Technology (cofounded by Damian Reeves and Adam Twiss) has been selected as the first technology partner for UK channel development organisation Horizon solutions, as part

of Zeus' aggressive plans to expand its indirect sales presence.

Who's Who

Samira Abbasnejad (*JN BA06*) has joined Symbian as a Software Engineer.

Joseph Akinwumi (*W Dip05*) has returned to Nigeria where he is working for Globacom Nigeria.

Congratulations to **Jonathan Ayres** (*R MA92*) and his wife on the birth of Harry on July 12th.

Robert Billing (*JN BA77*) set up Tanglewood Algorithms. He specializes in low-level software such as device drivers and kernels.

Jim Brady (*F BA05*) is a Software Engineer at IBM Hursley. He leads a team responsible for developing one of IBM's messaging products.

Joe Bullock (*F BA92*) is a Project Manager at Corpora Software.

Alexander Butterworth (*CAI BA05*) is working as an Analyst for Key Asset Management, a London headquartered hedge-fund.

Niall Cameron (*PEM BA05*) is working for Goldman Sachs as a Technology Associate.

Alastair Carter (*CHU BA04*) is a consultant at IBM Business Consulting Services.

Double congratulations to **Melvin Carvalho** (*CAI Dip96*) who came 5th in the Daily Telegraph Fantasy Football and held his own at the 2006 World Bridge Championships in Verona.

Robert Chipperfield (*G BA06*) has joined Red Gate Software as a Software Engineer.

Richard Clayton (*DAR PhD06*) completed his PhD this year and is now a Research Associate at the University of Cambridge Computer Laboratory.

Daniel Craig (*PEM BA05*) is an Associate at Sapient Ltd, a technology consultancy.

Mark Dodwell (*PET BA06*) is a Web Design and Development Consultant at mkdynamic.

Samir Feroze (*G Dip01*) is Managing Director of VeriQual, a company he founded in 2003.

Alison Fox (*M BA06*) is working at UBS in London.

Chris Galley (*CHR BA87*) is CEO of Alivox Ltd, a language identification startup.

Laura James (*CC PhD05*) is working for AlertMe, a very early stage (but generously funded) startup developing a consumer electronics system.

Easlyn Kirupairajah (*NH BA06*) is a Technical Analyst at Credit Suisse.

Martin Kleppmann (*CC BA06*) is reading for a Diploma in Composition at the Royal Scottish Academy of Music and Drama. Congratulations, too, to Martin who won the Computer Science Tripos Part II 2006 AT&T Prize for the Best Dissertation and a Microsoft Software Prize.

Merlin Mei (*W MPhil04*) is a PhD Research Fellow at the Department of Surgical Oncology and Technology at Imperial College, London.

Ian McDowall (*CTH MA81*) is Technology Architect at Symbian Software Ltd.

Rizwan Moledina (*SID BA05*) is working for UBS in London.

Kim Powell (*F BA06*) has joined Credit Suisse as an IT Technical Associate.

Sirish Reddi (*JN BA98*) is currently with NovoSupply. He previously founded TradingPartners in 2000 and grew it into one of Europe's leading eSourcing companies.

Damian Reeves (*CHU BA96*) has moved to the U.S. to run Zeus' U.S. operations.

Amit Sarna (*F BA06*) has joined Credit Suisse's Equities IT Graduate Scheme.

David Singleton (*JN BA02*) has joined Google UK as a Software Engineer.

Neil Stratford (*F BA96*) is Managing Director at Vipadia Limited, a VoIP Research and Development company he founded in 2005.

Wei Wang (*HH PhD06*) is now working as a Research Engineer at ARM Ltd.

Jing Wu (*F BA06*) has started at Morgan Stanley.

Computer Laboratory News

Professor Andy Hopper was one of forty-four new Fellows elected by The Royal Society on May 18th 2006.

Fellows are elected for their contributions to science, both in fundamental research resulting in greater understanding, and also in leading and directing scientific and technological progress in industry and research establishments.

The Royal Society said "He [*Professor Hopper*] is a world leader in computer network design and mobile computing, distinguished for his use of large industry-based research groups to develop new concepts and their commercial exploitation in tandem. His vision of 'Sentient Computing', involving the movement of people and sensors, has widely inspired academic research."

If you missed **Professor Peter Robinson** and his work on emotional inference at the Royal Society's Summer Science Exhibition in July, you will be able to see it when the exhibition travels to Glasgow between the 12th and 14th September 2006. More information about the work can be found at <http://www.royalsoc.ac.uk/exhibit.asp?id=4683>.

Job Bulletin Board Postings

(To post a job just go to www.camring.ucam.org and the Business & Professional link. Then just click on Job Bulletin Board)

Software Engineers	CamrivoX
Embedded Software	AlertMe.com
Technical Graduate Trainee	Trinamo Ltd
Sales Director	Perfiliate Technologies Ltd
Sales Reps	Perfiliate Technologies Ltd
Electronic Trading System Programmer	Arbitrage Hedge-Fund
Software Engineer – Development	Zeus Technology Ltd
Technical Author	Red Gate Software
Usability Engineer	Red Gate Software
Head of Technical Services	Red Gate Software
Web Application Developer	Start-up
Software Developer	Ndiyo.org
Architect	APT
Senior Architect	NovoSupply
Software Engineer	Linguamatics Ltd
Technical Account Manager	MX Telecom
Systems Developer	MX Telecom
Software Developer	MX Telecom
Software Engineer	APT
VP EMEA Sales	Psytechnics Ltd
Systems Architect	Orderly Software Ltd
Asterisk Deployment Manager	Orderly Software
Various	royalblue financial plc
Programmer	Cantab Capital Partners
Java programmer	Short Fuze
Various	XenSource

An Evening with Professor Peter Guthrie

7.00pm, November 28th 2006

Upper Hall, Peterhouse

The Roundtable discussion event, over dinner, is open to Ring members.

Tickets are limited and will be allocated on a first come first served basis.

To book your ticket either:

- send a cheque for £42.50 (made payable to Cambridge Computer Lab Ring) along with this form to Cambridge Computer Lab Ring, William Gates Building, JJ Thomson Avenue, Cambridge, CB3 0FD

or

- transfer £42.50 to the Ring's account (number 06117307 sort code 12-24-81) and email jan.samols@cl.cam.ac.uk along with details of any dietary requirements

8<

Please book a place for me at "An Evening with Professor Peter Guthrie"

I enclose a cheque for £42.50

Name:

Email:

Contact telephone:

Special Dietary Requirements:

In the event that I do not get a ticket initially, please put me/do not put me* on the waiting list in case of cancellations.

*delete as applicable

Latest date for refundable cancellations: Monday 20th November 2006