iMeme Speakers: Q&A

1.) Lee Thorn
**   Chair**
**   Jhai Foundation**

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

I think it is the growth and utility of the Internet. In 1998 I asked Pam Hardt-English, the founder of Resource One, where I met people like Lee Felsenstein in the early 70s, why I should help bring computers to rural villages in Lao PDR. "Why is it worth the expense?" I asked. She thought a long time, then said, "Education and business. Through the Internet, most people will begin to imagine for the first time how wide and varied our world is. This wondering will lead to deeper education. And everyone will be using computers and the internet for business. If you cannot, you will be left behind."

My father worked with computers in the '50s. I had a small vision of how computers could be useful. But the Internet was unimaginable.

2) What, for you, has been the most surprising infectious idea of the past year?

I would say that is Jhai's own. It is that economic development and improved education and health care can be vastly accelerated using information and communication technology. However, this can only be successful if done sustainably.   Sustainable development can only be achieved if people in villages "own" the process of development through reconciling and self-interested dialog with people who listen carefully and with utmost respect.

3) What really drives innovation in technology?

Expressed needs -- fully understood -- of ultimate end users drives innovation. This means best-case innovation is not driven by ideas thought up in isolation from end users or by projecting one's own needs. Great innovation is driven by conversation with people who really need help in getting their needs met. This is usually for concrete reasons having to do with education, health and livelihood.

2.) Richard Barton
Chairman and Chief Executive Officer
Zillow.com

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

The early PC was revolutionary. It put unfathomable computing power in the hands of the little guy. It radically enhanced people's productivity and creativity, and changed the way they were entertained. It was a revolution. Then this device took a radical turn when it became connected to networks of others and it became the most important communication device in millions, now billions, of lives. To me, the implications of PC moving from a productivity and entertainment device to being a communication and distribution platform were unexpected or perhaps un-appreciated. I am responding with my PC to an email that you sent me, David, right now. This email will be sent to you and then turned into the content of an article or a blog post that gets distributed over the network to potentially millions of people. I now spend the majority of my working life "doing email." When I started my business career, there was no email. Email is a revolution in and of itself and it is just one of the many emerging uses of the PC as a communications device for digital "society."

2) What, for you, has been the most surprising infectious idea of the past year?

I am a little conflicted here, but the viral/buzz appeal and attraction of Zillow has surprised and pleased me hugely, obviously. It's really hard to find a cutting edge Web site that isn't wholly "owned" by the young, hip folks that are the children of most of us. We generally scratch our heads and wonder what these kids are doing with all of this Facebook, Bebo and SMS. Zillow is one of those cutting edge applications that has really captured the imaginations of adults. Another great viral idea is www.geni.com a viral family tree site.

3) What really drives innovation in technology?

Super sharp people who are told, "You're crazy, you can't do that."

3.)   Steve Fambro
Chief Executive Officer
Aptera Motors

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

Well, I would have to say the ever-increasing ubiquity of powerful computers. Besides being connected and allowing people to exchange messages, data and to use the Internet, it's done something else. It's increased the technical/scientific/engineering capability of single engineers by orders of magnitudes. Properly used, and I stress "properly," computers are not just abstract boxes on desktops for email and surfing the net, they are powerful "force multipliers."

For example, at our company we're heavily leveraged in CFD, computational fluid dynamics. Every single part of our vehicle that touches the air has been through countless revisions to lower the drag. Fifteen years ago, even ten years ago, our only alternative would have been to use a wind tunnel, an expensive and lengthy affair. It's unlikely we could have afforded anything other than a small 1/4 scale tunnel, and at $10,000 per day, which is a typical rate, we wouldn't have got very far.

But, NASA and Boeing and other big giants have these tools, too. However, what's remarkable now is that small companies like Aptera can afford the same tools that these giants have. A small company, armed with these tools, but without a bureaucracy, can turn around key engineering decisions in days or hours, not months or years. The proliferation of these tools is a great equalizer with the bigger companies. What took 100 engineers to do in the 1940's can be done by several engineers, or maybe even one lone engineer, depending on the task. It's truly remarkable.

Consider this, in the early days of Aptera, we first hired a particular NASA facility to do some CFD analysis for us. We later discovered the software they were using and simply bought it. There! We had the same CFD software as NASA. Of course, we later hired away a lead aerodynamicist from the software company, but the point is, in some context, we have the same resources as NASA.

2) What, for you, has been the most surprising infectious idea of the past year?

I'd say it's been the revival of the electric car. It's cool; they can be sexy and efficient, and they make a lot of sense as a tool to help stop pollution of all sorts: Particulates, hydrocarbons, and even noise. They've always been around, even before most gas cars, but now... now they're "in" and I think they're here to stay. Public interest and the clean tech investment climate have begun the process of mainstreaming electric cars.

3) What really drives innovation in technology?

Investment and need. So many great ideas stay just that: ideas, locked up in some engineer's or scientist's mind. It's venture capital more often than not funding and driving this. Without money, most innovative ideas never see the light of day.

4.)   Eva Chen
       Co-founder and CEO
       Trend Micro, Inc. (USA)

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

Computerized video games. I never imagined that the computerized game could become something for my mom's generation, and could link with health and exercise ... but the Wii phenomenon really surprised me. When my mother's doctor prescribed a Wii console at home for my mom to exercise every day to cure her back pain and occasional depression, it turned out that she really liked it! What an unexpected technology turn in my lifetime -- from the invention of Pong for bored boys, through to the Wii for active grandmothers!

2) What, for you, has been the most surprising infectious idea of the past year?

Instant two-way communication was the infectious idea ever since the Internet came alive, because it unveils the fundamental nature of the human being who wants to be connected, is afraid to be alone, and wants to be heard. So the most infectious ideas during the past decade have always had something to do with two-way communication -- cell phone, email, instant messenger, SKYPE, blog, SMS, YouTube, MySpace and more. But for the past year, unfortunately, it is Web threats that have taken over and taken advantage of these advances. Hey, the idea of making money by using other people's computers has spread, through the use of Web downloaders, rootkits, spambots, clickbots, and phishes, and that industry has grown from nothing to estimates of more than eight billion dollars in two years. You must admit, it is literally and figuratively a very infectious idea!

3) What really drives innovation in technology?

What drives people to innovate in technology is the need to overcome human limitation -- people cannot fly, so innovation leads to the airplane; people cannot see the world past a wall in their room, so video and TV are created; people cannot hear farther than a mile, so the phone is innovated; people cannot memorize more than a book of names, so here comes a PDA ... it is all about overcoming the human being's limitation!

Therefore, to drive innovation in technology, we have to enable our teams to understand people's basic limitations. In my opinion, the best way to achieve and instill that understanding of people's limitation is to put a cross-functional, cross-national, cross-cultural team together, which enables them to see things from a different perspective, through a different angle, and that is when innovation happens! So, when I pull a Mixed Team together in the InnovationLab at Trend, and I hear a German engineer say to an American salesperson: "What? You mean you never can understand what that log means?" Or I hear an Asian marketing woman say to a hardware designer: "Don't you see I cannot lift that box? It is too heavy for my hands!!" Then I know that the innovation breakthrough is coming up!

5.) Mark Lewis
Executive Vice President and Chief Development Officer
EMC Corporation

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

Air travel. With so many scientific and engineering breakthroughs made in medicine, genetics, robotics, the Internet and software, aviation is a surprising laggard, especially when it comes to commercial airline travel. We are basically no better off today than in 1959, when Pan-Am put into service some of the first Boeing 707-321 turbojet-powered airliners. Sure, the new Airbus A380 sports multiple decks and carries nearly 500 passengers. But aside from its breakthrough size and creature comforts, it's still just a big airplane.

What ever happened to supersonic speeds? Whatever happened to a sustainable business model for such a vital global industry? Unfortunately, the technology innovations in air travel seem to be hampered not by engineering limits, but rather by economic feasibility.

When Air France and British Airways retired the last of their Concorde jets from service, didn't it feel as if commercial aviation were taking a step backwards instead of forward? Here was the fastest passenger jet in the world (Mach 2, 1,350 mph) that could condense a 7-8 hour trip between London and New York to just three and a half hours. Yet the commercial aviation industry hasn't come up with anything to replace it. Why? The planes are too expensive to operate and maintain. So instead of breakthrough technology in commercial aviation, we've got a broken business model that is practically stifling the technological innovation and advances that could otherwise be possible.

Looks like my dreams of a three-hour Boston to San Francisco flight are woefully far off. Contrast this with the huge technological advances that are happening almost daily on the Internet -- it's affected the world forever, and continues to do so. What started out as a three terminal network has become a global information resource and commerce hub of unimaginable proportions.

For a time you could easily be forgiven for thinking that the Internet had peaked, especially if you look back on the dot-com bust of the nineties, but that's when another wave of Internet-related innovation started to appear. We saw the emergence of disruptive technologies like voice over IP and instant messaging. We also saw the evolution of alternative business models like ASP's and the birth of open source.

And for me, that Internet-driven innovation shows no sign of slowing. We're seeing a maturation of the software as a service model, we're seeing the emergence of ubiquitous wireless connectivity, and we're seeing new forms of Web services that foster a new generation of content creation and collaboration. We can now upload our photos and use them to publish our own books. We can more easily create and share our own music and videos. The digital media space is really exploding, and not just on desktop computers. There is a new breed of mobile phones and PDA's for us to consume that content. And there's a whole new breed of home media devices, too. So for me, I see a very exciting future ahead. And none of this could have been possible without the Internet and its related protocol.

I wish we could say the same for air travel -- a global industry in dire need of some disruptive innovation.

2) What, for you, has been the most surprising infectious idea of the past year?

Television programming -- in the conventional sense, not in the YouTube sense -- delivered online. Companies like Apple, Joost and Babelgum have joined major networks in offering programming on-demand, and its growth has been faster than I would have thought. High bandwidth connections delivered to the home have long promised alternative entertainment, but content aggregators seem to be delivering it better than commercial content producers.

In hindsight, I shouldn't have been surprised at all. TiVo showed the world that people want to watch TV when they want -- not when networks want them to. Now that platforms are allowing subscribers to watch how they want, whether it's on a desktop, laptop, or mobile device, and what they want by choosing from hundreds of channels, online programming will continue to grow.

3) What really drives innovation in technology?

Innovation is more about execution than most people think. There are dreamers and doers -- the trick is to connect them!

The most exciting thing to accelerate this, and something I believe has fundamentally changed R&D forever is the explosion of online collaboration. It has flattened the old R&D silos, greatly enabling global teams to leverage ideas and information, supercharging the discovery and development lifecycle.

And the amazing thing is that R&D teams can more easily than ever look outside their own companies to connect and share ideas and research with communities of interest, including scientists, academics, partners and customers, to exploit the same kinds of social and professional networks popularized by MySpace and LinkedIn. The collaborative and social dimension of this major shift now greatly enhances the ability of distributed R&D teams to drive the exploration, discovery and application of new innovations that will accelerate and shape future technology advances.

The ability to discover shared interests with researchers you've never met and cultivate those interests using increasingly sophisticated tools such as wikis, blogs and RSS feeds enables the crossover of information needed to develop innovative solutions in response to complex, real-world challenges. Effectively, this enables the doers to execute on the dreams of the dreamers.

**6.)   Geordie Rose
         Founder and CTO
         D-Wave Systems Inc.**

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

The one that's had the most impact on me personally is quantum computation. Leading the process of turning the foundational formative ideas into real computing machines has led to a cascade of surprising and unpredictable turns.

2) What, for you, has been the most surprising infectious idea of the past year?

That quantum computers are now sufficiently advanced that they are one click away from anyone with an internet connection. This was far in advance of most prognostications.

3) What really drives innovation in technology?

The mix of unreasonable ambition and desperation unique to start-ups. As a corollary to this, sources of capital to fund ambitious risky blue sky projects with huge upside are a key part of this. This I would characterize as "investors willing to fail" -- explicitly embracing the high risk, high reward philosophy.

**7.)   Bruno Wu
        Chairman
        The Sun Media Investment Holding Group of Companies**

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

I never thought search technology would turn itself into the bridge to all content, connecting all passion and interest and securing such a scalable business model, and it has become the darling of the investment community. When I was at Sina, we already had search, but we failed to capture this opportunity.

2) What, for you, has been the most surprising infectious idea of the past year?

Online magazines in China have become the epitome in China. My wife started one in November of 2005, and it has grown to 40m women visitors a month. The whole of China has started the online magazine frenzy since then.

3) What really drives innovation in technology?

Easier and more pleasant usage by consumers should be the driving force behind most of the technology innovation.

8.)   Sol Trujillo
Chief Executive Officer
Telstra Corp. Ltd.

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

Technology and turn in life -- for me it is two things, the internet and wireless. They rule how I conduct business and most of my personal interactions, whether it be communicating, being informed or being entertained -- just like some of us talked about in the '90s. Interestingly, we now see this everywhere in a very indiscriminate fashion.

2) What, for you, has been the most surprising infectious idea of the past year?

The most infectious idea this year has to be the self-generated content phenomenon. The platforms where everyone or anyone can express themselves in virtually any media form to anyone or anywhere in the world without "formal" agreements has been amazing.

3) What really drives innovation in technology?

Ideas that solve problems or meet needs, environments that enable/allow, platforms that have no constraints, the desire to make a difference or to change things, and, ultimately, the ability to monetize the idea or innovation.

9.)   Yusuf Mehdi
Senior Vice President and Chief Advertising Strategist
Microsoft Corporation

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

Despite the time I have spent working on Microsoft's browser and related set of technologies, the Internet continues to take the most unexpected turns in terms of its impact on people, business, and software applications. The very basic capability of providing worldwide access to information as a corporation or as an individual publisher has been something that I knew would happen someday, but never at the speed and with the impact that it has had in terms of how information is created, shared, and consumed.

2) What, for you, has been the most surprising infectious idea of the past year?

The most surprisingly infectious idea for me personally is the work Microsoft is doing with our SeaDragon incubation: http://labs.live.com/Seadragon.aspx. It hasn't gone mainstream yet, but the promise of what this technology will do for the future of web navigation, ecommerce and advertising, and applications like Photosynth which are now in development is limitless. The hyperlink structure of the web is powerful, but the ability to create more immersive experiences with some of the SeaDragon technology has me almost giddy.

3) What really drives innovation in technology?

People and ideas drive innovation in technology. The ability to write software is hard but is something that is broadly available to people with a personal computer. The innovation comes from the individual who can surpass others in terms of their focus on the customer, their ability to dream and conceive of great new ideas, and ultimately the ability to take the conceptual idea and architect it into a real piece of software.

10.) Padmasree Warrior
Executive Vice President and Chief Technology Officer
Motorola, Inc.

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

For me personally, the technology that has taken the most unexpected turn in my lifetime is what I refer to as "the device formerly known as the cell phone." I still remember many predictions that by 2000 there would only be about a million cell phone users. Boy, were they ever wrong!

Today there are about 2.9 billion mobile device users, i.e., roughly half the planet uses this technology for so much more than a phone call. Today people call people, not places! Today a new language called text speak is practiced across the globe with the characters "<3" meaning "love" the world over. This new speech crosses language and cultural boundaries, bringing us closer. Today's mobile phone retailing at less than $40 has more processing power than the spaceship that first put man on the moon; and the 13-year-old using it may well know more than the 1969 Apollo engineers!

The mobile device of the future will be your persona. It will carry your mail and keep your calendar, it will be your wallet and the jewel you wear, it will be your camera and television, it will remind you when you forget, it will entertain you with music and games, it will help you get there from here, it will show things that you may miss, it will understand and talk to you, it will allow you to share your experiences and your worlds – and all this as easy as a simple phone call.

The first call from atop Mount Everest, the farmer in India earning a livelihood using SMS, the lifesaving weather information for fishermen in Africa via the mobile, the videos and TV shows that people watch in Korea and Japan on their commute -- no one ever expected any of this on the mobile device. It is the first computer for many people, and it is the platform for the next internet.

2) What, for you, has been the most surprising infectious idea of the past year?

The most surprising and infectious idea in the past year has been the ability to time-, place- and device-shift media. Think of how viewing habits have changed with DVR's that allow people to take control of program schedules. People are now creating their own video programs and sharing them online for others to watch. We are now moving TV and video content from the living room to the mobile device. This shift is revolutionizing the video and broadcast industry.

Media and entertainment will change dramatically compared to the past five years. A significant amount of content creation will be spontaneous generation in addition to planned production. Content distribution will include "persona-cast" and not just broadcast. Content presentation will shift to multiple screens from one screen. Content delivery will move beyond the living room to time-, device-, place-shift. Content consumption will become more participatory rather than remain passive.

It is no longer about "always on;" the future is about "always on-demand." There is a third screen enabling this – on the mobile!

3) What really drives innovation in technology?

Innovation is hard work. It takes remarkable thought leaders with vision, passion and energy to drive ideas into reality. It is about letting a few geeks and gadflies change the game. There are no rules in the ethos of innovation – that has been my mantra for the past several years.

I passionately believe that innovation is birthed from the union of technical IQ, business IQ and entrepreneurial IQ. It is nurtured by a handful of persistent individuals debating a seemingly stray idea, and asking why it may or may not work. It grows with tweaking and twiddling, unglamorous and fast-paced iterations called experimentation.

Innovation happens by bringing together diverse thought: sociologists, technologists, marketers, and well, sometimes even those lawyers! Agile, small groups working towards a defining vision may be not always in perfect harmony, but always moving in the right direction.

Innovation in technology is driven by people solving real problems. It is catalyzed by people with provocative ideas to create an impact on the marketplace. Often they swim upstream against the tide of conventional thinking, having a strong passion for their vision. Cultivating an environment that encourages and protects such people is imperative in fostering innovation in technology. I often ask five questions to stimulate innovation: what relevant problem does this solve, what are the competing alternatives, what differentiates this solution, what are the barriers to entry, and what is the business opportunity?

11.)   Harriet Pearson
VP Regulatory Policy & Chief Privacy Officer
IBM Corporation

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

I have been most surprised recently by the interest in virtual worlds and related subjects. A year ago at this time I thought it was just games, and just this June IBM and MIT hosted an extremely well-attended conference in Cambridge, exploring how businesses and others are engaging with virtual worlds and the 3D Internet. The momentum and interest are amazing.

2) What, for you, has been the most surprising infectious idea of the past year?

For me, it's the new understanding of how corporations organize themselves to do business in a more-networked, "flattening" world. We've been using the phrase "globally integrated enterprise," but whatever it's called, there isn't a doubt that thinkers and leaders understand that something different is afoot -- that there's a recasting of organizational design that's reflecting and taking advantage of global communications and trade networks. This idea comes with its own set of challenges, of course. What does it mean to lead and work for a globally integrated enterprise, and what is its role in society?

3) What really drives innovation in technology?

I think that the biggest driver is the marketplace. We have more technology than we know what to do with. The real breakthroughs happen when we discover something that is successful in the marketplace because it solves a real problem that people or businesses have, that allows people to reach an end state that they desire or discover they really want!. Every so often a technology comes along that by itself is spectacular, but those technologies home runs are very rare. Most marketplace innovations happen with fairly well known technologies that someone finally figured out what to do with.

12.)   Jonathan Schwartz
CEO and President
Sun Microsystems, Inc.

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

The telephone. I remember when they used to be attached to walls. I remember pay phones, too. Now mobile phones are literally everywhere. There are billions of them around the world, and they've become the dominant device through which people experience the Internet. Via SMS, social networks, maps, bank accounts, music or news -- even camera phones dwarf the number of stand-alone cameras. People fight hard to communicate with one another; now they don't have to fight quite so hard. Mobile devices, and the services delivered through them, will only become more interesting and valuable.

2) What, for you, has been the most surprising infectious idea of the past year?

Twitter, a service to connect people across the world in 140 characters or less. Who would think they could build millions of registered users, send hundreds of millions of SMS messages, or start to build a distribution network that advertisers and media companies had to begin paying attention to?

3) What really drives innovation in technology?

Courage. Courage to challenge conventional wisdom, to wholly commit to an idea or ideal, to lead and inspire those around you, whether they're collaborators or customers.

13.)   John Clippinger
         Senior Fellow, Berkman Center for Internet and Society
         Harvard Law School

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

For someone of my generation, who was raised to believe in the power of the combustible engine -- the power of carbon-based power systems -- as well as the promise of nuclear energy too cheap to monitor, the rapidity and totality of the ecological adverse effects of these technologies on the survival of the planet was not only unexpected, but profoundly altered my belief in humankind's ability to secure its own survival. As a species, we are capable of collectively acting in ways that could very easily lead to our extinction. As the complexity and scope of technologies increase, it seems less and less likely that Homo sapiens (what a misnomer) as we now know it is very likely to survive. There very likely will be some form of a technology singularity, perhaps not on the scale or time frame predicted by Ray Kurtzweil, but something of sufficient magnitude to aggressively select for a successor species.

2) What, for you, has been the most surprising infectious idea of the past year?

Paris Hilton. I just don't get it.

User-generated content, from YouTube to MySpace to blogs to Flickr to Wikipedia. I just would not have thought it would have happened on the scale and the speed it has. It has something that I have advocated and predicted for years, but the pace of its takeoff and the speed of adoption and use by so many segments has taken my breath away. This and other web innovations have altered my time scale for predicting the speed and scope of future digital innovations. In short, the conditions are ripening for accelerated viral effects. There is a kind of exponential compounding effect of innovations that is going to make each day less and less like the day that preceded it.

3) What really drives innovation in technology?

Openness. Minimum barriers to entry: capital formation, learning, development, testing, marketing, and monetizing technology. Innovation thrives on curiosity and openness. It is unpredictable, and like mutation and natural selection, it is unpredictable. It is emergent and opportunistic. Look at the innovations of Renaissance Italy, 1210-1426. It was a period of chaos, plague and warfare, a breaking down of hierarchies, and the recombination of diverse social and trade networks to yield new social identities -- new invented public personalities that competed for attention and legitimacy -- and hence, innovations in painting, sculpture, science, finance, architecture, warfare, etc.

14.)   Esther Dyson
Editor, Release 0.9
EDventure Holdings

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

Most of the interesting developments have been a combination of business and technology, such as the commercialization of the Internet or the nascent commercialization of space travel

2) What, for you, has been the most surprising infectious idea of the past year?

Facebook as a platform.

3) What really drives innovation in technology?

User demand. It often pulls the innovation through features and functions that look frivolous.

15.)   Louise Guay
President and Founder
My Virtual Model, Inc.

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

In 1986, I discovered that a computer was not only a calculator but also an integrator. I was able to create a Pocket Museum, which became my Ph.D. The user -- a child -- could create a portrait of identity, selecting a character, a monument, a landscape and an object. The child was able to integrate his own image with a video camera, blend the four images with the video and send it through a videoconferencing satellite link to a virtual friend across the Atlantic. It was a project between France and Quebec. Several national museums were involved and I realized that museums and stores have a lot in common, as Stanley Marcus of Neiman Marcus pointed out several years ago.

My second museum was a digital museum of architecture commissioned by the Canadian Center of Architecture (CCA) founded by Phyllis Lambert, the heir of the Seagram family in Montreal. Existing museums of architecture have always been very abstract for the public. A digital museum allowed visitors to browse famous architects' libraries of plans and pictures of the construction sites. I started to realize how interactive, visual applications were democratizing the most abstract realities. Architecture is the realm of corporations, institutions, governments and very wealthy people. It is great to make it real for people when they will play a part in it and use it for multiple public purposes.

My third museum was a museum of writing. This work was a multimedia biography of Glenn Gould. Being an interpreter, he wrote music by composing radio programs in which he orchestrated voices and music, editing everything by himself in his own recording studio.

The Pocket Museum was an anticipation of My Virtual Model. J.F. St-Arnaud and I created My Virtual Model in 2001. Our vision and mission are to create the standard for the virtual identity. The users follow their own model, they create 3D model of themselves, they can shop by bringing their models with them on the Web and on their cell, and they can send it to their blogs with their closets, socializing with their friends about their fashion sense and the expression of their personality. Users are mobile with their virtual models, they can go from one website to another MVM-enabled site, and they are recognized. This is the mobility of the virtual identity.

Many brands and retailers use it right now. We are launching a new version, totally user-oriented, to be installed on major publishers' sites. The users can mix and match brands and develop their lifestyle with these creative technologies. We envision that people will use all kinds of avatars. They will have many types of avatars and will need garments for them in their wardrobe. The MVM avatar is trustable because you can believe that what you see on your model will look like the real product that you will get after purchasing it on- or offline. The users want to bring their models and their virtual experiences in many places. When users create their models, they can send it to their blogs, to their phones, to games and virtual worlds. This is the interoperability of the virtual identity.

The museum of architecture announced the power of visualization and interaction. Circulating in 3D spaces make sense for everyone, while projecting 2D plans in 3D was arduous and abstract for most of us. The simulation is a great language. The cartoons were impressive to free the imagination; the 3D is freeing abstract models of design, architecture, mathematics, and so on. It makes it accessible to everyone. It is a new literacy. We can envision that biology models of the environment, or the preservation of languages and cultures, will be much easier to understand with 3D modelization than with 2D graphics and projections only. The simulation is about

anticipation, imagining the future. We saw how market studies can be done early in the supply chain. Not only can customers try on virtually before they purchase ("trysuming" trend) but brands can create virtual collections and have users rate them in multiple countries. Brands can then produce only what has been well rated and avoid waste.

The Glenn Gould Profile was all about creativity. It is about inventing the self and the makeover of the self. Glenn Gould re-invented himself as a new creator. Being a genius interpreter, he told us that to interpret is to recreate. These notions are key with today's access to information, audio, video, etc. The notion of property in artistic domain is seriously questioned nowadays (Napster, etc.) and was anticipated by André Malraux, Glenn Gould, Andy Warhol and others. The access to multimedia and multichannel databases configured for users opens the door to the automation of writing. The shift of the creativity is toward the readers more than writers. Many writers anticipated it, Italo Calvino particularly.

2) What, for you, has been the most surprising infectious idea of the past year?

Communities and virtual worlds are ubiquitous in the media and in perceptions of people as trends. We went from mass media to personal media; the advertising is also morphing to customer relationship and avatar-based advertising. These changes were possible because of the wiki and the user-generated content applications: dictionaries, encyclopedias, Flickr, etc. Crowd sourcing and the open source movement are allowing a true democratization of innovation. Eric Von Hippel has shown how logical it is for corporations to open their innovation centers to users. With virtual models, the personalization is now visual, providing a true interface for customization and co-design. It seems that mobility with standards and interoperability will reach out with devices like cells, iPhones, PDAs, etc. Personal communities and networks as virtual worlds will surround users in unprecedented ways. It will start by personal catalogs and stores and extend wherever it will be needed and wanted by the users. The passage from 2D to 3D on the Web as well as the virtual identity is the next big thing.

3) What really drives innovation in technology?

The massive adoption by users and the fact that they can bring their insights and inventiveness to the innovation with open source. Involving users in the innovation process is the big driver. All the new paradigms described in the above answer about infectious ideas give the power to the individual. However, the individual is not alone; he or she is with communities of interest and networks of commerce and social groups. Our identity changes with the notion of virtual identity. We also change continuously, we have many lives, as our lives are longer and more changing than ever. We maintain multiple ecosystems of communication and what helps us to achieve these new goals are the sustainable innovations in technology. So many people are using technology now, not only the technocracies but also most people in the world. As so many people are involved, they will push the innovations where their needs are. Everyone can now use media and publish his or her version of reality. The computer power is not only a calculator or an integrator; it can be a sewing machine, an intelligent mirror, a renewal for ethics for the environment and the society. We need virtual ambassadors to protect our reputation. The intelligent agents will be linked to the avatars.

16.) Marc Benioff
Founder, Chairman, and CEO
salesforce.com, Inc.

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

When we started talking about "the end of software" back in 1999, I did not think that I would see my chief rival implode just six years later. Client–server has been circling the drain a lot sooner than I thought. If you had told me at our founding that just seven years later Bill Gates would start saying that Microsoft had to be more like salesforce.com, I would not have believed you. The turn has been abrupt.

2) What, for you, has been the most surprising infectious idea of the past year?

The rise of the enterprise mashup. When mashups first began to get some buzz, they seemed both useful and fun, like craigslist and Google maps. And they were all with consumer apps. But we started incorporating them into our apps, mashing up our platform with Google, Skype, Adobe, and many, many others. And we are not alone. The community has really embraced this idea, and it's amazing to me how quickly the enterprise has, too. There is a compression in the lag between consumer technology and the emergence of its business iteration, and that's encouraging to me.

3) What really drives innovation in technology?

Democratization of access is an enduring driver. If a technology lowers the barriers of entry via cost or complexity, adoption expands. When it does *both*, stand back. That's what's happening now on our platform, and we have seen it time and time again. The most amazing technology is not usually the driver (for example, microprocessors) but the applications they inspire (desktop publishing, spreadsheets, games, etc). Today, open web-based APIs make it possible to build new apps by combining any number of web services and to do it with less cost and complexity than before. Web 2.0 technologies are forming another golden age of innovation in Silicon Valley now.

17.)   Tomaso Poggio
Eugene McDermott Professor, Department of Brain and Cognitive Sciences; Co-director, Center for Biological and Computational Learning
Massachusetts Institute of Technology

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

I would say that personally I am very impressed by something which is outside the normal scientific publication network: it is the incredible performance achieved in predicting financial markets by a very small number of "quant" hedge funds. The best example is Renaissance, led by Jim Simon, a well-known mathematician. Medallion -- the flagship fund of Renaissance -- has an incredible track record since '89, with a god-like Sharpe ratio of 7 in the last couple of years.

2) What, for you, has been the most surprising infectious idea of the past year?

As a mostly good infection, Wikipedia, a sign that many people are ready to work towards a collective intelligence without the need of monetary rewards.

As a mostly bad infection, YouTube. Why are people wasting so much time instead of solving really hard and important problems in science and technology?

3) What really drives innovation in technology?

DARPA used to do it.

18.)   Bill Joy
**   Partner**
**   Kleiner Perkins Caufield & Byers**

1) For you personally, what technology has taken the most unexpected turn in your lifetime?

For the positive, the Internet and UNIX. I was working to get these technologies to be reliable and perform well 30 years ago, and now I'm sitting here using them both, on a Mac running UNIX with wireless broadband Internet, as was envisioned 30 years ago. What is unexpected to me is how widespread this idea has become. We talked about it back then, but didn't totally believe it. I hope I am similarly surprised by the uptake of the green technology ideas I am focusing on today.

2) What, for you, has been the most surprising infectious idea of the past year?

Focusing nearly exclusively on greentech innovation, I have been surprised by the large number of people with the "idea" to start a solar photovoltaic company. The explosion of such companies is reminiscent of the early days of the personal computer industry. It speaks volumes to the ultimate importance of such renewable energy sources, and is truly hopeful.

3) What really drives innovation in technology?

Innovation has been driven by predictable sustained changes in what is possible. The most rapidly changing technology, electronics, has been driven by scaling, with repeatedly smaller feature sizes creating exponential cost/performance benefits. In addressing the climate crisis the strongest sustained driver of innovation is the new properties that arise from confined dimensions, i.e. from materials that are "thin" in at least one direction.