Design and Aesthetics

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Contents

From The Rational Optimist – How Prosperity Evolves by Matt Ridley.

Things are not only getting better at an accelerating rate – food availability, life span, income are up and child mortality, disease and violence are down, luxuries are getting cheaper – but, human race is also becoming prosperous. This is so because of the culture of everybody working for everybody else, and the habit of specialization which has created a collective human brain that sets human living standards on a rising trend. This is the central theme of the book. Ridley focuses on the positive impact this collaboration has brought about for human society, which has resulted from specialization of professions and services. This, he says, has led to prosperity, and it knows no limits according to him.

“When ideas have sex…” is another interesting phrase he uses.

Most examples in this book are American / not Indian, and so, not usable. Here are other examples to show how the overall prosperity the world has achieved:

1. Life expectancy the world over has increased, with decreased fertility rates and birth rates.

Youth Statistics

India –level

Note: Census 2011 has not yet released the official age-group wise population numbers, have used here quotes from news items, reports etc.

- 15-24 years: 18.2% (male 117,85,009/female 104,516,448)
  25-54 years: 40.4% (male 253,642,261/female 239,219,931)
  Ref: https://www.cia.gov/library/publications/the-world-factbook/geos/in.html

- Every third person in an Indian city today is a youth. **In about seven years, the median individual in India will be 29 years, very likely a city-dweller, making it the youngest country in the world.**
  Ref: The Hindu: April 17, 2013 http://www.thehindu.com/news/national/india-is-set-to-become-the-youngest-country-by-2020/article4624347.ece

- "India has a dynamic, productive and **youthful workforce which will be 64 per cent of the population by the year 2020**, whereas China, US and Japan have ageing labour," said Tharoor at the launch of the Gen Next Workforce Study 2013.
  Ref: Economic Times: Aug 23, 2013 http://articles.economictimes.indiatimes.com/2013-08-23/news/41440845_1_shashi-tharoor-indian-education-system-indian-industry

- The United Nations defines youth as people between ages 15 and 24. By this measure, there are approximately 240 million youth in India, about 20% of the population, according to preliminary projections from the 2011 census. That's up from 195 million in 2001. **The median age in India is 25, meaning that half the population is below 25 and half is above it.** Compare India to Canada, whose youth make up just 12% of its population and where the median age is almost 40.
  Ref: http://blogs.wsj.com/indiarealtime/2013/02/28/the-perils-of-unfulfilled-indian-youth/

- 19% of the world's people are Chinese, **17% are Indian** and 4% Americans.
  Ref: http://ngm.nationalgeographic.com/2011/03/age-of-man/face-interactive

- In the year 2011, **the world's most typical person** was a Chinese. **In 2030, it will be an Indian.**
  Ref http://video.nationalgeographic.com/video/the-magazine/the-magazine-latest/ngm-7billion-typical/)

Maharashtra level

In 2011, 128.48 lakhs people in Maharashtra are in the 0-6 years age group, constituting 11.43 percentage of the state's total population. According to Census 2001, 367.24 lakhs individuals were below 18 years in Maharashtra. Age group wise population break-up from Census 2011 is not yet available, but projections from United Nations Population Fund (UNFPA) report are as follows for year 2011

MAHARASHTRA CHILDREN POPULATION	
Age Group	**Population in lakhs**
0-4	99.03
5-9	97.98
10-14	102.69
15-19	105.81
Total	**405.51**

Ref: Population Demographics-Maharashtra(Census 2001 and 2011 and Population Projection Report, UNFPA, 2009)

- Maharashtra Total Population: 11,23,74,333
  India Total Population: 1,21,01,93,422
  Percentage of Population of Maharashtra with respect to India is 9.29%

- Next to UP, **Maharashtra with 11,23,72,972 population is the second largest State in India** in terms of size of population and Bihar with 10,38,04,637 is in the third position.

- Maharashtra's **Literacy rate 82.9%** against the national average of 74.0% stands at 12th rank in the country.
  Ref: Census of India 2011

Ideas that changed the world

1. **CNN** - http://edition.cnn.com/2008/WORLD/europe/11/21/tenthings.changedtheworld/

    1. Farming
    2. The unconscious
    3. Relativity
    4. Vaccination
    5. Human rights
    6. Evolution
    7. World Wide Web
    8. Soap
    9. Zero
    10. Gravity

2. **New Scientist** - http://www.newscientist.com/special/zeros-to-heroes-10-unlikely-ideas-that-changed-the-world

3. **From Global Finance** - http://www.gfmag.com/archives/155-25th-anniversary/11823-top-25-lists-25-ideas-that-changed-the-world.html#axzz2dRSVTTcn

TOP 25 IDEAS THAT SHAPED THE PAST 25 YEARS

1	Globalization	14	Nafta
2	Democratization	15	The euro
3	Free-market economics/free trade	16	Environmentalism
4	Privatization	17	Renewable power
5	Financial deregulation	18	The Bilbao Effect
6	BRICs	19	Leveraged buyouts
7	The power shift from West to East	20	Derivatives
8	Intra-emerging markets trade	21	CDOs
9	Outsourcing	22	Fracking
10	Trade, not aid	23	The Occupy movement
11	Social networking	24	Activist hacking
12	The war on terror	25	Everyone is a reporter/blogging
13	Jihad		

Designs that changed the world

10 Inventions That Changed the World - http://www.geniusstuff.com/blog/list/10-inventions-changed-world/

1. The Plough
2. The Wheel
3. The Printing Press
4. Refrigeration
5. Communication
6. The Steam Engine
7. The Automobile
8. The Light Bulb
9. The Computer
10. The Internet

From Bloomberg Business Week - http://images.businessweek.com/ss/09/12/1209_25_world_changing_products/

25 products that might just change the world –

(have listed only the interesting ones here)

1. Air2Water Dolphin 2/Dragonfly M18
2. Bike Dispenser
3. Daily Dump - Daily Dump is a composting brand, product, and service bundle that brings waste management to the home. Users of the system purchase the earthenware pots from a wide selection, along with tools and instruction material to personalize the composting system to accommodate their needs. This is an Indian product.
4. Eco Machines - Eco-Machines are miniature ecosystems that use flora, fauna, and bacteria to naturally cleanse water, treat sewage, and turn waste-water and material into fuel and food. Installations have included an aquaculture system that turns fish waste into nutrients to grow vegetables, a 1,968-foot system to depollute an urban canal in China, and a laboratory for hands-on education at Berea College in Kentucky.
5. Envirolet Flush Smart Toilet - While the idea of a waterless, composting toilet may not be immediately appealing, Envirolet's Vacuum FlushSmart systems combine the environmental benefits of waste composting with a low-flush, traditional toilet. The FlushSmart system moves waste via suction into a composting vessel that can be placed above, below, or level with the toilet.
6. Jaipur Foot
7. Sink Positive - Low-flow toilets are ubiquitous in the U.S., but every flush still wastes fresh water on a task that does't require it—refilling the toilet's bowl and tank. SinkPositive saves water by using a toilet's freshwater refill cycle for hand washing, then channeling the dirty sink water into the bowl. The system fits as a lid on most standard toilets.

8. Vaccine Patch

Steve Jobs: the five Apple products 'that changed the world'

http://www.telegraph.co.uk/technology/steve-jobs/8810237/Steve-Jobs-the-five-Apple-products-that-changed-the-world.html

iPod, iTunes, iPhone, Mac, iPad.

10 ways that Apple changed the world - http://www.techradar.com/news/computing/apple/10-ways-apple-changed-the-world-1136277

From CNBC - http://www.cnbc.com/id/42820902

10 Products and Companies That Changed the Business World:

1. Apple
2. Amazon.com
3. Nintendo Wii (Gaming console)
4. Netflix (Films renting)
5. Email
6. Facebook, Twitter
7. Google
8. You tube
9. Craiglist
10. Southwest Airlines/JetBlue

Top 10 technologies that changed the world - http://www.v3.co.uk/v3-uk/news/2098140/technology-products-changed-world

Also see attachments:

1. The bizarre painted buildings of Tirana
2. Steve Jobs-Design simplicity
3. Scientific American 10 World changing ideas
4. Multi-generational work force-Deloitte
5. India's demographic challenge_ Wasting time _ The Economist
6. The case for Optimism-TIME
7. Bogota
8. How to Give a Killer Presentation - Harvard Business Review
9.

Thoughts on Design

Ted talks on Design –

These are the two links from the HBR article "How to make killer presentations" on the best Ted talks. I have downloaded these talks and you can show them to RT.

1. Organic design –- http://www.ted.com/talks/ross_lovegrove_shares_organic_designs.html
2. Design of kinetic sculptor Reuben Margolin - http://on.ted.com/Margolin

Few more ted talks

1. Design and Destiny - http://www.ted.com/talks/philippe_starck_thinks_deep_on_design.html

   Philippe Starck tells of different types of design: Cynical design, the design invented by Raymond Loewy in the '50s, who said, what is ugly is a bad sale. It means the design must be just the weapon for marketing, for producer to make product more sexy, because they sell more.
   Then there is the narcissistic design: A fantastic designer who designs only for other fantastic designers.
   Then, there are other designers like me, who try to deserve to exist, and they try to not make the object for the object but for the result, for the profit for the human being, and for the person who will use it. If we take the toothbrush -- I don't think about the toothbrush. I think, "What will be the effect of the brush in the mouth?" And to understand what will be the effect of the toothbrush in the mouth, I must imagine: Who owns this mouth? What is the life of the owner of this mouth? In what society does this guy live? What civilization creates this society? What animal species creates this civilization? When I arrive at the level of animal species, that becomes real interesting.

2. Design and happiness, http://video-subtitle.tedcdn.com/talk/podcast/2004/None/StefanSagmeister_2004-low-en.mp4
   Has a few nice photos of interesting designs.

   The value of design, in the use of any product, can be measured on this scale:

   Comfort → contentment → Joy → Delight → Bliss.

   Designer should be happy while designing, and the designs should evoke happiness.

3. Think BIG - http://www.ted.com/talks/tim_brown_urges_designers_to_think_big.html

THIS TALK IS IDEAL FOR DESIGN STUDENTS. Lots of stuff about how design students should look at design, in today's world. Text of the entire talk is attached. Few abstracts:

> This small view of design - making things more attractive, making them a bit easier to use, making them more marketable - emerged in the latter half of the 20th century as design became a tool of consumerism. Just focusing on a design and or just a single product does not have much of an impact.
>
> There is a different view of design that focuses less on the object and more on design thinking as an approach, and this makes a bigger impact. Isambard Kingdom Brunel designed

many great things in his career in the 19th century, including the Clifton suspension bridge in Bristol and the Thames tunnel at Rotherhithe. But his greatest creation runs actually right through here in Oxford. It's called the Great Western Railway. As a kid, you may have enjoyed the experience of cycling along the side of the railway waiting for the great big express trains to roar past. Brunel said that he wanted to achieve for his passengers was the experience of floating across the countryside. That meant creating the flattest gradients that had ever yet been made, building long viaducts across river valleys and long tunnels such as the one at Box, in Wiltshire. But he didn't stop there. He didn't stop with just trying to design the best railway journey. He imagined an integrated transportation system in which it would be possible for a passenger to embark on a train in London and disembark from a ship in New York. One journey from London to New York. This is the S.S. Great Western that he built to take care of the second half of that journey.

Brunel was working 100 years before the emergence of the design profession, but I think he was using design thinking to solve problems and to create world-changing innovations.

Now, design thinking begins with what Roger Martin, the business school professor at the University of Toronto, calls integrative thinking. And that's the ability to exploit opposing ideas and opposing constraints to create new solutions. In the case of design, that means balancing desirability, what humans need, with technical feasibility, and economic viability.

Aravind Eye Institute in Madurai, India, do an incredible job of serving very poor patients by taking the revenues from those who can afford to pay to cross-subsidize those who cannot. Now, they are very efficient, but they are also very innovative. They make their own intraocular lenses - lenses that replace those that are damaged by cataracts. Their prototyping mentality allowed them to achieve a breakthrough by bringing the cost down from $200 a pair, down to just $4 a pair. Partly they did this by instead of building a fancy new factory, they used the basement of one of their hospitals. And instead of installing the large-scale machines used by western producers, they used low-cost CAD/CAM prototyping technology. They are now the biggest manufacturer of these lenses in the developing world and have recently moved into a custom factory.

Think BIG – Script of Ted talk by Tim Brown.

http://www.ted.com/talks/tim_brown_urges_designers_to_think_big.html

I'd like to talk a little bit this morning about what happens if we move from design to design thinking. Now this rather old photo up there is actually the first project I was ever hired to do, something like 25 years ago. It's a woodworking machine, or at least a piece of one, and my task was to make this thing a little bit more modern, a little bit easier to use. I thought, at the time, I did a pretty good job. Unfortunately, not very long afterwards the company went out of business.

This is the second project that I did. It's a fax machine. I put an attractive shell around some new technology. Again, 18 months later, the product was obsolete. And now, of course, the whole technology is obsolete. Now, I'm a fairly slow learner, but eventually it occurred to me that maybe what passed for design wasn't all that important -- making things more attractive, making them a bit easier to use, making them more marketable. By focusing on a design, maybe just a single product, I was being incremental and not having much of an impact.

But I think this small view of design is a relatively recent phenomenon, and in fact really emerged in the latter half of the 20th century as design became a tool of consumerism. So when we talk about design today, and particularly when we read about it in the popular press, we're often talking about products like these. Amusing? Yes. Desirable? Maybe. Important? Not so very.

But this wasn't always the way. And I'd like to suggest that if we take a different view of design, and focus less on the object and more on design thinking as an approach, that we actually might see the result in a bigger impact. Now this gentleman, Isambard Kingdom Brunel, designed many great things in his career in the 19th century, including the Clifton suspension bridge in Bristol and the Thames tunnel at Rotherhithe. Both great designs and actually very innovative too. His greatest creation runs actually right through here in Oxford. It's called the Great Western Railway.

And as a kid I grew up very close to here, and one of my favorite things to do was to cycle along by the side of the railway waiting for the great big express trains to roar past. You can see it represented here in J.M.W. Turner's painting, "Rain, Steam and Speed". Now, what Brunel said that he wanted to achieve for his passengers was the experience of floating across the countryside.

Now, this was back in the 19th century. And to do that meant creating the flattest gradients that had ever yet been made, which meant building long viaducts across river valleys -- this is actually the viaduct across the Thames at Maidenhead -- and long tunnels such as the one at Box, in Wiltshire. But he didn't stop there. He didn't stop with just trying to design the best railway journey. He imagined an integrated transportation system in which it would be possible for a passenger to embark on a train in London and disembark from a ship in New York. One journey from London to New York. This is the S.S. Great Western that he built to take care of the second half of that journey.

Now, Brunel was working 100 years before the emergence of the design profession, but I think he was using design thinking to solve problems and to create world-changing innovations. Now, design thinking begins with what Roger Martin, the business school professor at the University of Toronto, calls integrative thinking. And that's the ability to exploit opposing ideas and opposing constraints to create new solutions. In the case of design, that means balancing desirability, what humans need,

with technical feasibility, and economic viability. With innovations like the Great Western, we can stretch that balance to the absolute limit.

So somehow, we went from this to this. Systems thinkers who were reinventing the world, to a priesthood of folks in black turtlenecks and designer glasses working on small things. As our industrial society matured, so design became a profession and it focused on an ever smaller canvas until it came to stand for aesthetics, image and fashion. Now I'm not trying to throw stones here. I'm a fully paid-up member of that priesthood, and somewhere in here I have my designer glasses. There we go. But I do think that perhaps design is getting big again. And that's happening through the application of design thinking to new kinds of problems -- to global warming, to education, healthcare, security, clean water, whatever.

And as we see this reemergence of design thinking and we see it beginning to tackle new kinds of problems, there are some basic ideas that I think we can observe that are useful. And I'd like to talk about some of those just for the next few minutes. The first of those is that design is human-centered. It may integrate technology and economics, but it starts with what humans need, or might need. What makes life easier, more enjoyable? What makes technology useful and usable? But that is more than simply good ergonomics, putting the buttons in the right place. It's often about understanding culture and context before we even know where to start to have ideas.

So when a team was working on a new vision screening program in India, they wanted to understand what the aspirations and motivations were of these school children to understand how they might play a role in screening their parents. Conversion Sound has developed a high quality, ultra-low-cost digital hearing aid for the developing world. Now, in the West we rely on highly trained technicians to fit these hearing aids. In places like India, those technicians simply don't exist. So it took a team working in India with patients and community health workers to understand how a PDA and an application on a PDA might replace those technicians in a fitting and diagnostic service.

Instead of starting with technology, the team started with people and culture. So if human need is the place to start, then design thinking rapidly moves on to learning by making. Instead of thinking about what to build, building in order to think. Now, prototypes speed up the process of innovation, because it is only when we put our ideas out into the world that we really start to understand their strengths and weaknesses. And the faster we do that, the faster our ideas evolve.

Now, much has been said and written about the Aravind Eye Institute in Madurai, India. They do an incredible job of serving very poor patients by taking the revenues from those who can afford to pay to cross-subsidize those who cannot. Now, they are very efficient, but they are also very innovative. When I visited them a few years ago, what really impressed me was their willingness to prototype their ideas very early.

This is the manufacturing facility for one of their biggest cost breakthroughs. They make their own intraocular lenses. These are the lenses that replace those that are damaged by cataracts. And I think it's partly their prototyping mentality that really allowed them to achieve the breakthrough. Because they brought the cost down from $200 a pair, down to just $4 a pair. Partly they did this by instead of building a fancy new factory, they used the basement of one of their hospitals. And instead of installing the large-scale machines used by western producers, they used low-cost

CAD/CAM prototyping technology. They are now the biggest manufacturer of these lenses in the developing world and have recently moved into a custom factory.

So if human need is the place to start, and prototyping, a vehicle for progress, then there are also some questions to ask about the destination. Instead of seeing its primary objective as consumption, design thinking is beginning to explore the potential of participation -- the shift from a passive relationship between consumer and producer to the active engagement of everyone in experiences that are meaningful, productive and profitable.

So I'd like to take the idea that Rory Sutherland talked about, this notion that intangible things are worth perhaps more than physical things, and take that a little bit further and say that I think the design of participatory systems, in which many more forms of value beyond simply cash are both created and measured, is going to be the major theme, not only for design, but also for our economy as we go forward.

So William Beveridge, when he wrote the first of his famous reports in 1942, created what became Britain's welfare state in which he hoped that every citizen would be an active participant in their own social well-being. By the time he wrote his third report, he confessed that he had failed and instead had created a society of welfare consumers.

Hilary Cottam, Charlie Leadbeater, and Hugo Manassei of Participle have taken this idea of participation, and in their manifesto entitled Beveridge 4.0, they are suggesting a framework for reinventing the welfare state. So in one of their projects called Southwark Circle, they worked with residents in Southwark, South London and a small team of designers to develop a new membership organization to help the elderly with household tasks. Designs were refined and developed with 150 older people and their families before the service was launched earlier this year.

We can take this idea of participation perhaps to its logical conclusion and say that design may have its greatest impact when it's taken out of the hands of designers and put into the hands of everyone. Nurses and practitioners at U.S. healthcare system Kaiser Permanente study the topic of improving the patient experience, and particularly focused on the way that they exchange knowledge and change shift. Through a program of observational research, brainstorming new solutions and rapid prototyping, they've developed a completely new way to change shift.

They went from retreating to the nurse's station to discuss the various states and needs of patients, to developing a system that happened on the ward in front of patients, using a simple software tool. By doing this they brought the time that they were away from patients down from 40 minutes to 12 minutes, on average. They increased patient confidence and nurse happiness. When you multiply that by all the nurses in all the wards in 40 hospitals in the system, it resulted, actually, in a pretty big impact.

And this is just one of thousands of opportunities in healthcare alone. So these are just some of the kind of basic ideas around design thinking and some of the new kinds of projects that they're being applied to. But I'd like to go back to Brunel here, and suggest a connection that might explain why this is happening now, and maybe why design thinking is a useful tool. And that connection is change. In times of change we need new alternatives, new ideas.

Now, Brunel worked at the height of the Industrial Revolution, when all of life and our economy was being reinvented. Now the industrial systems of Brunel's time have run their course, and indeed they are part of the problem today. But, again, we are in the midst of massive change. And that change is forcing us to question quite fundamental aspects of our society -- how we keep ourselves healthy, how we govern ourselves, how we educate ourselves, how we keep ourselves secure. And in these times of change, we need these new choices because our existing solutions are simply becoming obsolete.

So why design thinking? Because it gives us a new way of tackling problems. Instead of defaulting to our normal convergent approach where we make the best choice out of available alternatives, it encourages us to take a divergent approach, to explore new alternatives, new solutions, new ideas that have not existed before. But before we go through that process of divergence, there is actually quite an important first step. And that is, what is the question that we're trying to answer? What's the design brief? Now Brunel may have asked a question like this, "How do I take a train from London to New York?" But what are the kinds of questions that we might ask today?

So these are some that we've been asked to think about recently. And one in particular, is one that we're working on with the Acumen Fund, in a project that's been funded by the Bill and Melinda Gates Foundation. How might we improve access to safe drinking water for the world's poorest people, and at the same time stimulate innovation amongst local water providers?

So instead of having a bunch of American designers come up with new ideas that may or may not have been appropriate, we took a sort of more open, collaborative and participative approach. We teamed designers and investment experts up with 11 water organizations across India. And through workshops they developed innovative new products, services, and business models.

We hosted a competition and then funded five of those organizations to develop their ideas. So they developed and iterated these ideas. And then IDEO and Acumen spent several weeks working with them to help design new social marketing campaigns, community outreach strategies, business models, new water vessels for storing water and carts for delivering water. Some of those ideas are just getting launched into the market. And the same process is just getting underway with NGOs in East Africa.

So for me, this project shows kind of how far we can go from some of those sort of small things that I was working on at the beginning of my career. That by focusing on the needs of humans and by using prototypes to move ideas along quickly, by getting the process out of the hands of designers, and by getting the active participation of the community, we can tackle bigger and more interesting questions. And just like Brunel, by focusing on systems, we can have a bigger impact. So that's one thing that we've been working on.

I'm actually really quite interested, and perhaps more interested to know what this community thinks we could work on. What kinds of questions do we think design thinking could be used to tackle? And if you've got any ideas then feel free, you can post them to Twitter. There is a hash tag there that you can use, #CBDQ. And the list looked something like this a little while ago. And of course you can search to find the questions that you're interested in by using the same hash code.

So I'd like to believe that design thinking actually can make a difference, that it can help create new ideas and new innovations, beyond the latest High Street products. To do that I think we have to take a more expansive view of design, more like Brunel, less a domain of a professional priesthood. And the first step is to start asking the right questions. Thank you very much.

What is new technology offering us?

What sort of future should we expect? What sort of future will the world live in? These are difficult questions to answer especially since the world is moving at a rapid pace never before imagined. The advance of technology and its adaptation in our day-to-day lives has made our lives super fast. Events all around the world are brought to us in a matter of seconds.

Though today,

This chapter will compile the different ideas that are being explored in the world and try to make sense of what and how we should adapt these for ourselves.

Each idea will be presented in not more than 2 pages. Related references and additional reading sources will be identified.

The Singularity – When man and machine become one[1].

Technologist Raymond Kurzweil[2] has a radical vision for humanity's immortal future. According to him, in 2045, the moment will come when technological change becomes so rapid and profound, it represents a rupture in the fabric of human society. Kurzweil's theory is based on three simple findings, which are

- ✓ Computers are becoming faster. They are also becoming faster faster – that is, the rate at which they are becoming faster is increasing.
- ✓ Technological progress happens exponentially, not linearly. Computing power of computers will catch up with humans by 2045.
- ✓ Creativity, art, self-expression will be no longer the exclusive domain of human beings. Computers will even be able to create art.

This will transform human beings and society. This transformation has been named – The Singularity. How or what form the transformation will take, we do not know and can only theorize about. There are a number of possibilities, and turn out as they may, one thing is sure. The result will be drastic enough to change humanity. As one of its founders, Vernor Vinge[3] says, "Within 30 years, we will have the means to create superhuman intelligence. Shortly after, the human era will be ended".

Though initially the concept appears to be fascinating, scary and shocking, it is real enough to warrant serious attention. Serious enough for people to think of it as real and explore the consequences. A lot of investment is being made to understand and prepare human society when this actually happens. For example,

[1] From the cover story of Time, 21 February, 2011, titled "*2045 – The Year When Man Becomes Immortal*", by Lev Grossman

[2] Holder of 39 patents and 19 honorary doctorates, winner of the National Medal of Technology (US), 1999.

[3] In "The Coming Technological Singularity", as quoted in Time, 21 February, 2011, titled "*2045 – The Year When Man Becomes Immortal*", by Lev Grossman

- The Singularity University[4], funded by the likes of Nokia, Google, Cisco and NASA, has been established to study this phenomenon and it is running courses and offering scholarships since it was established in 2008. The University was established in order "*to be prepared to learn how the growth of exponential and disruptive technologies will impact your industry, your company, your career and your life*[5]", is based in the NASA campus in Silicon Valley. One of their key events is the FutureMed program which educates, informs and prepares physicians and senior healthcare executives to understand and recognize the opportunities and disruptive influences of exponentially growing technologies within medicine and healthcare, and to understand how many rapidly developing and converging fields affect the future of wellness, prevention, clinical practice and the biomedical industry.
- The Singularity Institute[6] was founded in 2000 by artificial intelligence researcher Eliezer Yudkowsky and internet entrepreneurs Brian and Sabine Atkins. Its mission is "To ensure that the creation of smarter-than-human intelligence benefits society". The institute organizes an annual Singularity Summit that brings together speakers who are leaders in business, science, and technology and focuses the brightest minds on understanding the opportunities and risks inherent in the future development of advanced technology.
- The Singularity Symposium[7], a forum for people to debate this concept, brings together ideas to explore and anticipate this future.
- The Singularity Club[8] is yet another group of people believing in Singularity, who think that achieving Singularity will be like achieving God-hood, and are therefore are pursuing the goal of what they term as *technotranscendence.*

He also talks of how innovations are accelerating. Ray Kurzweil: The accelerating power of technology - http://www.ted.com/talks/ray_kurzweil_on_how_technology_will_transform_us.html

Other references:

1. The Singularity is Near, by Raymond Kurzweil, book (http://www.singularity.com/) and movie about mankind's future (http://www.singularity.com/themovie/index.php).
2. The Transcendent Man (http://transcendentman.com/).

[4] http://singularityu.org/
[5] Bob Melcalfe, founder of 3Com and the co-inventor of Ethernet, as quoted on the Singularity University's website.
[6] http://singinst.org/
[7] (http://www.singularitysymposium.com/
[8] http://meltingpot.fortunecity.com/kuwait/557/singularityclub.html

Old age is an illness and can be cured

This idea was discussed in the Singularity Summit in August 2010 (and also in Ted talks, at the Humanity Plus conference in Cal Tech later) by its proponent and life-extension researcher, Aubrey De Grey, quite seriously. According to De Grey, the human body is a machine that performs a bunch of functions, and in doing so, accumulates various types of damages as a side effect.

Strategies for Engineered Negligible Senescence[9] (SENS)

[9] http://sens.org/ Senescence = growing old.

Quotes, Comments on Design and Youth

"Almost everything that is great has been done by *youth"*
Benjamin Disraeli

"You can design and create, and build the most wonderful place in the world. But it takes people to make the dream a reality."
Walt Disney

"The youth need to be enabled to become job generators from job seekers."
Abdul Kalam

"Design is people."
Jane Jacobs

"Design is a funny word. Some people think design means how it looks. But of course, if you dig deeper, it's really how it works."
Steve Jobs