Innovation Themes
Innovation Outlook
http://delicious.com/innovation2030

- Health & Medicine
  - New Therapies/Medication
    - Nootropics as new market area for the pharma industry
    - Will cognitive enhancement be encouraged to improve productivity?
    - Advances in cybernetic medical technology lead to new legal questions about the definition of human
    - Human enhancement technologies lead to controversies over the definition of human and equity
    - Advances in suspended animation lead to new debates about the end of life (or more general: advances in medical technology lead to new definitions over the beginning and end of life)
    - Personalised medicine could change the pharma industry
    - Medicinal food leads to legal issues concerning the strict separation between food and medicine and could impact the development of functional nutrition
    - Widely accessible health information threatens the workings of insurance systems
    - Will smart prosthetics and implants lead to accidental enhanced cyborgs?
  - Genetics/Cell technologies
    - Will germ-line therapies be allowed under certain conditions?
    - Artificial chromosomes could be used for safer gene therapy, but also for genetic engineering and Human Enhancement Technololgies
    - Tissue engineering solves problems in organ donation
    - Cheap gene sequencing leads to massive utilisation of genetic information
    - Can the ban of human cloning be controlled?
  - Business/Society
    - Open source drug development threatens pharma industry
    - Constant monitoring of health and whereabouts of people has positive and negative sides
    - Life extension technologies threaten pension systems
- Space
  - Space tourism becomes successful business area
  - Commercial space flight as emerging business
  - Are space-based elevators an alternative for cheaper space transport and could the nanotube technology also be useful for high-rise buildings?
  - What will be the human future in outer space?
  - Should we invest in technologies to prevent an asteroid/meteoroid impact on earth?
  - Space mining: new opportunities and legal and technological challenges
  - The rise of new Asian space nations (India and China)
- Economy & Production
  - DIY movement threatens conventional manufacturing industry and business
  - DIY movement becomes more sophisticated and enters the field of biotechnology, synthetic biology and human enhancement technologies
  - Rapid-prototyped houses could show valuable for cheap and temporary shelter
  - Using science to influence customers with neuromarketing
  - Will metamaterials that could make things invisible lead to legal issues?
  - Nanobiotechnology changes the way of manufacturing to bottom-up and self-replicating production
  - Artificial diamonds ruin conventional diamond trade
- ICT/Data
  - Growing amount of information causes information overflow not to be handled by humans
  - New IP protocol IPv.6 and beyond - smooth transitions or disruptive effects?
  - The recreation of reality in the virtual world
- Energy & Environment
  - Energy/Environmental Management
    - Eco tourism becomes new business area
    - Energy saving becomes new big topic for business and innovation
    - Decentralised renewable energy systems make commercial energy providers obsolete
    - Will GMO be accepted because of its potential advantages?
  - Energy Production
    - Small nuclear power plants installed on pacific islands lead to security debates
    - Is it worth investing in nuclear fusion technologies?
    - How close will we be to nuclear fusion in 2030?
    - Will the future of energy be hydrogen?
    - Will the future of energy be solar?
- **Nutrition**
  - Will we be able to produce enough food in the future?
  - Should we have to eat insects in the future?
  - Will our future food be grown in vertical farms?
  - In-vitro meat makes animal farming obsolete
- Research
  - In-silico testing makes animal testing obsolete
  - Rapid advances in science and technology lead to cultural clashes between progressives and conservatives
- Robots/AI
  - How difficult will it be in the future to tell humans and robots apart?
  - Will intelligent AI-based text-mining, translation and expert system technology threaten the jobs of knowledge workers?
  - Humans and robots become more and more alike
  - Advanced computational technology and AI replaces knowledge workers
  - Whole brain simulation causes debates over personal identity and the status of the simulation-entity
  - Advanced AI-based yield management could run the economy
  - Who will drive the future car, human or computer?
  - Will increasing automation and improved Artificial Intelligence make human workers obsolete?
  - The possibility of fusing biological systems with computer technology opens up new innovations and ethical controversies
- Safety / Security
  - Will Mutually Assured Permanent & Pervasive Surveillance be the only way to ensure safety in a world with increasingly advanced technology?
  - Will brainscans be required for future security checks?
  - Will electromagnetic pulse weapons be the ultimate threat for human civilisation?
  - Will the enhanced cyborg supersoldiers be developed by the military (DARPA)?
  - How safe are less-lethal weapons and what does their development mean for business and regulation?
- Transport & Construction
  - Should we invest into a transatlantic supertunnel connecting Europe and the US under sea?
  - Will super high-rise building be like a future village?