Real world policy changes for a radically better future

Tony Czarnecki
Managing Partner, Sustensis
London, 3rd December 2016

An extended narrative of this presentation can be found at:
www.sustensis.co.uk/sustainable_world
Agenda

Environmental
- Climate change

Technological
- AGI runaway
- Social disruption

Social
- Community
  - Life Purpose
- Social cohesion
- Unemployment
- Migration

Economic
- Wealth creation
- Wealth distribution
- Unemployment
- Migration

Political
- Values
- Systems: democracy & capitalism
- International and National conflicts
- Structures: International Organisations

How can we live in a more sustainable and harmonious world?
Are we fast approaching Technological Unemployment (TU)?
Harvard University and IBM’s projection of knowledge growth

*What does exponential change really mean?*

Knowledge Doubling Curve

- 1900s, Knowledge doubled every century
- 1940s, knowledge doubled every 25 years
- Currently, knowledge doubling every 13 months
- Soon, every 12 hours?

‘Transition from the linear growth to exponential growth of human knowledge has taken place.’

Source: Buckminster Fuller and IBM, Harvard University Jeff Lichtman
http://www.futuristgerd.com/2014/07/16/knowledge-doubling-every-12-months-soon-to-be-every-12-hours-via-industry-tap/
If we assume Moore’s law to continue over the next 15 years, then the technology would be about 1,000 times more efficient.

But combinatorial effects in other areas may lead to even faster growth in efficiency and the fastest growth in productivity in history.

Therefore, the global GDP will grow much faster and will double not in 20 but rather in 15 years.
What would be the consequences of faster productivity growth?

Decoupling Productivity and Employment

Digital technologies have boosted productivity in the United States without also spurring the expected job growth, argue Erik Brynjolfsson and Andrew McAfee. A result of this decoupling is that while gross domestic product (GDP) has risen, median income has not, and inequality has grown.

This gap is to rise almost exponentially

Source: https://www.technologyreview.com/s/515926/how-technology-is-destroying-jobs/
According to Futurist Thomas Frey by 2030 there will be 4 bn. people of working age worldwide but there will only be 2 bn. jobs.
<table>
<thead>
<tr>
<th>Driveless cars</th>
<th>Flying Drones - 1</th>
<th>Flying Drones - 2</th>
<th>3D Printers</th>
<th>Contour Crafting</th>
<th>Big Data &amp; Artificial Intelligence - 1</th>
<th>Big Data &amp; Artificial Intelligence - 2</th>
<th>Mass Energy Storage</th>
<th>Robots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td>Public Safety</td>
<td>Agriculture</td>
<td>36. Plastic press operators</td>
<td>Home Construction</td>
<td>Writing</td>
<td>Financial Services</td>
<td>Energy sector</td>
<td>Retail</td>
</tr>
</tbody>
</table>

### Delivery Positions

| 12. Traffic court support staff | Surveying | 46. Real estate agents | Legal Services | 82. Oil well drillers, roughnecks, |
| 5. Truck drivers | 25. Land and field surveyors | Military | 67. Lawyers | 83. Geologists | Medical |
| 16. Courier service | 29. Search and rescue teams | Medical | Miscellaneous | 94. Veterinarians |

### Remote Monitoring

| 32. Construction site monitors | 58. Phlebotomists | 74. Interpreters/ translators | 97. Landscapers |
| 34. Security guards | 61. Counselors/ psychologists | 100. Exterminators |
| 35. Parole officers | | | 101. Lumberjacks |

---

There are others that predict a similar trend. Which jobs are most likely to disappear due to automation in 2030?

**Bring on the personal trainers**
Probability that computerisation will lead to job losses within the next two decades, 2013
(1=certain)

<table>
<thead>
<tr>
<th>Job</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreational therapists</td>
<td>0.003</td>
</tr>
<tr>
<td>Dentists</td>
<td>0.004</td>
</tr>
<tr>
<td>Athletic trainers</td>
<td>0.007</td>
</tr>
<tr>
<td>Clergy</td>
<td>0.008</td>
</tr>
<tr>
<td>Chemical engineers</td>
<td>0.02</td>
</tr>
<tr>
<td>Editors</td>
<td>0.06</td>
</tr>
<tr>
<td>Firefighters</td>
<td>0.17</td>
</tr>
<tr>
<td>Actors</td>
<td>0.37</td>
</tr>
<tr>
<td>Health technologists</td>
<td>0.40</td>
</tr>
<tr>
<td>Economists</td>
<td>0.43</td>
</tr>
<tr>
<td>Commercial pilots</td>
<td>0.55</td>
</tr>
<tr>
<td>Machinists</td>
<td>0.65</td>
</tr>
<tr>
<td>Word processors and typists</td>
<td>0.81</td>
</tr>
<tr>
<td>Real estate sales agents</td>
<td>0.86</td>
</tr>
<tr>
<td>Technical writers</td>
<td>0.89</td>
</tr>
<tr>
<td>Retail salespersons</td>
<td>0.92</td>
</tr>
<tr>
<td>Accountants and auditors</td>
<td>0.94</td>
</tr>
<tr>
<td>Telemarketers</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Boston Consulting Group predicts that Germany would need 10m extra employees in 2030. *Source: The_Global_Workforce_Crisis_Jun_2014_till_2030*

Why? Because they assume the GDP growth pattern and labour growth pattern will be the same as over the last 20 years.
How can we achieve global economic and social sustainability?
1. Progressively increase the “Living Wage” so that in the UK it reaches the “poverty line”, i.e. 60% of median income in 2025.
2. Cut down working hours, in the UK in line with Continental Europe

Average annual no. of hours worked in OECD world in 1960 -2000

Source: OECD Annual Hours Database (see Table F of the Statistical Annex)
### Normal retirement age in various countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Early retirement age</th>
<th>Normal retirement age</th>
<th>Employed 55–59</th>
<th>Employed 60–64</th>
<th>Employed 65–69</th>
<th>Employed 70+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>60 (57)</td>
<td>65 (60)</td>
<td>39%</td>
<td>7%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Belgium</td>
<td>60</td>
<td>65</td>
<td>45%</td>
<td>12%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Cambodia</td>
<td>50</td>
<td>55</td>
<td>16%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Denmark</td>
<td>none</td>
<td>65</td>
<td>77%</td>
<td>35%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>France</td>
<td>62*</td>
<td>65*</td>
<td>51%</td>
<td>12%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Germany</td>
<td>65</td>
<td>67</td>
<td>61%</td>
<td>23%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Greece</td>
<td>58</td>
<td>67[7]</td>
<td>65%</td>
<td>18%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Italy</td>
<td>57</td>
<td>67</td>
<td>26%</td>
<td>12%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>60</td>
<td>65 (67)</td>
<td>53%</td>
<td>22%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Norway</td>
<td>62</td>
<td>67</td>
<td>74%</td>
<td>33%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>Spain</td>
<td>60**</td>
<td>65**</td>
<td>46%</td>
<td>22%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Sweden</td>
<td>61</td>
<td>65</td>
<td>78%</td>
<td>58%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Switzerland</td>
<td>63 (61), [58]</td>
<td>65 (64)</td>
<td>77%</td>
<td>46%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Thailand</td>
<td>50</td>
<td>60</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>65</td>
<td>68</td>
<td>69%</td>
<td>40%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>United States</td>
<td>62</td>
<td>67</td>
<td>66%</td>
<td>43%</td>
<td>20%</td>
<td>5%</td>
</tr>
</tbody>
</table>

4. Re-design jobs - to be shared by 2-3 people or with robots

Figure 35: Proportion of companies that use flexible working arrangements

- Job Sharing: Europe – 28%

Source: CRANET SURVEY ON COMPARATIVE HUMAN RESOURCE MANAGEMENT International Executive Report 2011
5. Introduce Universal Basic Income (UBI)

The unlikely proponents of UBI

Frederick Hayek  Richard Nixon  Milton Friedman
The approach to a full UBI for OECD countries

Public social expenditure as a percent of GDP, 2007, peak-level after 2007, and 2014

Source: World Economic Forum
<table>
<thead>
<tr>
<th>Proposing organisation</th>
<th>Adult Annual UBI pp (£)</th>
<th>Child Annual UBI pp (£)</th>
<th>Pensioners UBI pp (£)</th>
<th>Start date proposed</th>
<th>Net scheme cost in £bn</th>
<th>Benefits</th>
<th>Personal Allowance</th>
<th>NI</th>
<th>Tax</th>
<th>State Pension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Party proposal</strong></td>
<td>4160</td>
<td>2600</td>
<td>9360</td>
<td>After 2020</td>
<td>Paid by NI increase and additional tax</td>
<td>Only exceptional &amp; housing</td>
<td>0</td>
<td>Lower &amp; Upper limits removed - more expensive</td>
<td>Everything above UBI taxed</td>
<td>0</td>
</tr>
<tr>
<td><strong>Citizens Income Trust</strong></td>
<td>4160</td>
<td>1040</td>
<td>Pension plus + 1560</td>
<td>Now</td>
<td>20</td>
<td>Only exceptional</td>
<td>0</td>
<td>Max 12%</td>
<td>Everything taxed including UBI, extra up to 3% tax for high earners</td>
<td>Remains</td>
</tr>
<tr>
<td><strong>Compass</strong></td>
<td>4160</td>
<td>2600</td>
<td>8060</td>
<td>Now</td>
<td>14</td>
<td>Only housing</td>
<td>0</td>
<td>NI</td>
<td>Everything taxed including UBI</td>
<td>0</td>
</tr>
<tr>
<td><strong>Reform Scotland</strong></td>
<td>5200</td>
<td>2600</td>
<td>5200</td>
<td>Now</td>
<td>13</td>
<td>Only exceptional</td>
<td>0</td>
<td>0</td>
<td>Everything tax, plus extra up to 3% tax for high earners</td>
<td>Remains</td>
</tr>
<tr>
<td><strong>Royal Society of Arts &amp; Commerce (RSA)</strong></td>
<td>4160</td>
<td>3700</td>
<td>8060</td>
<td>Now</td>
<td>14</td>
<td>Only exceptional</td>
<td>0</td>
<td>Max 12%</td>
<td>Everything taxed including UBI, extra up to 3% tax for high earners</td>
<td>0</td>
</tr>
</tbody>
</table>
The UK Green party UBI Proposal

The UBI Proposal – What’s in it for you?

<table>
<thead>
<tr>
<th>Category</th>
<th>Weekly rate (£)</th>
<th>Annual rate (£)</th>
<th>Number (million)</th>
<th>Cost (£ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>50</td>
<td>2,600</td>
<td>13.7</td>
<td>35.6</td>
</tr>
<tr>
<td>Working age</td>
<td>80</td>
<td>4,160</td>
<td>38.7</td>
<td>161.1</td>
</tr>
<tr>
<td>Pensioners</td>
<td>155</td>
<td>8,060</td>
<td>13.6</td>
<td>110.0</td>
</tr>
<tr>
<td>Lone parents</td>
<td>80</td>
<td>4,160</td>
<td>2.0</td>
<td>8.5</td>
</tr>
<tr>
<td>Lone pensioners</td>
<td>25</td>
<td>1,300</td>
<td>4.3</td>
<td>5.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>320.8</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How will we pay for the Universal Basic Income?

<table>
<thead>
<tr>
<th>Summary table</th>
<th>£ billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost of Basic Income scheme</td>
<td>331</td>
</tr>
<tr>
<td><strong>less</strong></td>
<td></td>
</tr>
<tr>
<td>Benefit savings</td>
<td>164</td>
</tr>
<tr>
<td>Abolition of personal allowance</td>
<td>90</td>
</tr>
<tr>
<td>Running cost saving</td>
<td>8</td>
</tr>
<tr>
<td>Saving on negative tax credits</td>
<td>3</td>
</tr>
<tr>
<td>44% reduction of reliefs on pension contributions</td>
<td>18</td>
</tr>
<tr>
<td>Removal of lower National Insurance threshold</td>
<td>22</td>
</tr>
<tr>
<td>Removal of upper National Insurance threshold</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total savings</strong></td>
<td><strong>331</strong></td>
</tr>
</tbody>
</table>
6. Create large scale social engagement programmes for people on UBI

An extended “Utrecht” Model for UBI social engagement – one of the variants or a combination:

- Pay unconditional UBI – say £600 per month in advance

- **Pay unconditional UBI** – say £600 per month in advance *plus* say £300 *against minimum hours spent on voluntary work or in education*

- Pay conditional UBI – say £600 per month at the end of the month *if some minimum voluntary work done*

- Pay conditional UBI – say £600 per month in advance, which must be returned *if a minimum hours on voluntary work or in education is not spent*
7. A global level UBI Approach for developing countries

- Introduce massive job sharing

- Convert all benefits and tax allowances into the UBI – for all citizens

- Introduce the living wage partly funded from the Global Wealth Redistribution Fund

- Introduce UBI for unemployed combined with large-scale education and voluntary work programme
How can we achieve global economic and social sustainability?
1% of the world’s population owns half of the world’s wealth

How is the world’s wealth shared amongst its population?

<table>
<thead>
<tr>
<th>Wealth (USD)</th>
<th>% of the world’s population</th>
<th>% of the world’s wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; $10,000</td>
<td>71.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>&gt; $10,000 - $100,000</td>
<td>21.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>&gt; $100,000 - $1 million</td>
<td>7.4%</td>
<td>39.4%</td>
</tr>
<tr>
<td>&gt; $1 million</td>
<td>0.7%</td>
<td>45.2%</td>
</tr>
</tbody>
</table>

“Wealth” is defined as the marketable value of financial assets plus non-financial assets (principally housing and land) owned by an adult, less debts
Source: Global Wealth Report 2015, Zurich: Credit Suisse
The roadmap to the world of abundance and social order

New Charter of Human Values and Responsibilities

- Freedom
- Sovereignty
- Equality
- Justice
- Privacy

International Court of Justice
The roadmap to the world of abundance and social order

New Charter of Human Values and Responsibilities

- Freedom
- Sovereignty
- Equality
- Justice
- Privacy

New definition and meaning of Democracy

- Democracy Type
  - Representational
  - Participative
  - Empowered
  - Consensual

- Governance setup
  - Two chambers
  - Max. 2 terms
  - Lobbying

Constitutional prerequisites

- Written Constitution
- Secular state
- Non-hereditary
- Core liberties
- Federalism
- Localism

Capitalism reformed

- Land Ownership
- Stakeholders rights
- New Banking Law
- Hereditary ownership

International Court of Justice
The roadmap to the world of abundance and social order

New Charter of Human Values and Responsibilities

- Freedom
- Sovereignty
- Equality
- Justice
- Privacy

New definition and meaning of Democracy

- Democracy Type
- Governance setup
- Constitutional prerequisites

Re-designed Electoral Systems

- Weighted Voting
  - All have one vote
  - Votes are weighted
  - Contribution
  - Engagement
- Minimum electoral standards
  - Voting system
  - Max. term length

New Economic System

- Capitalism reformed
- Public office standards
  - Private/public work
  - Info. disclosure

International Constitutional Court
The roadmap to the world of abundance and social order

New Charter of Human Values and Responsibilities

- Freedom
- Sovereignty
- Equality
- Justice
- Privacy

New definition and meaning of Democracy

- Democracy Type
- Governance setup
- Constitutional prerequisites

Re-designed Electoral Systems

- Weighted Voting
- Minimum electoral standards
- Public office standards

New Global Organisations

- Int. Constitutional Court
- UDN (replacing UN)
- Federalism & Localism
- NATO redefined
- GWRF (replacing UNCTAD)

New Economic System

- Capitalism reformed
The roadmap to the world of abundance and social order

**New Charter of Human Values and Responsibilities**

- Freedom
- Sovereignty
- Equality
- Justice
- Privacy

**New definition and meaning of Democracy**

- Democracy Type
- Governance setup
- Constitutional prerequisites

**Re-designed Electoral Systems**

- Weighted Voting
- Minimum electoral standards
- Public office standards

**New Global Organisations**

- Int. Constitutional Court
- UDN (replacing UN)
- Federalism & Localism
- NATO redefined
- GWRF (replacing UNCTAD)

**Global programme of economic and social stability including management of migration**

- 2-5% GDP binding contribution
- World’s economy boost
- EU-style GWRF projects
- Migration wars avoided
- TU managed

**New Economic System**

- Capitalism reformed

**Social engagement programmes**

- Living wage increase
- Shorter working week
- Earlier retirement age
- UBI at 60% median wage
Take two most recent difficult global problems: Ebola – speed, and the Paris Accord on climate change – the impact spread and duration?

I do not believe a vision like this would be implemented in a rational, well-coordinated way

So, most probably the world will go first through a near existential risk before it changes fundamentally the way how humanity is governed

But we should prepare now the first paving stones on the road to a better world that will provide enough wealth to be shared by everyone
The End
|------------------------------------|-----------------------------|----------------|-------------------|------------------|---------------|----------------|-------------|-------------------|-----------------|----------------------|----------------|------------------|---------------------|-------------|-------------------|---------------|------------------|------------------|

There will be 4bn people of the working age – how many will have no job in 2030?

Projected size of global labour force – pointing to 4bn in 2030

Source: ILO Laborsta based on United Nations, World Population prospects, the 2010 revision

TED: Erik Brynjolfsson: The key to growth? Race with the machines February 2013
https://www.ted.com/talks/erik_brynjolfsson_the_key_to_growth_race_em_with_em_the_machines#t-128211
How can we live in a more sustainable and harmonious world?

**Environmental**
- Climate change

**Technological**
- AGI runaway

**Social**
- Social cohesion
- Unemployment
- Migration

**Economic**
- Unemployment
- Wealth creation
- Wealth distribution

**Political**
- International and National conflicts
- Structures: International Organisation

**Community**
- Life Purpose

**Values**

**Systems:**
- Democracy & capitalism

How can we live in a more sustainable and harmonious world?