Patterns of Progress

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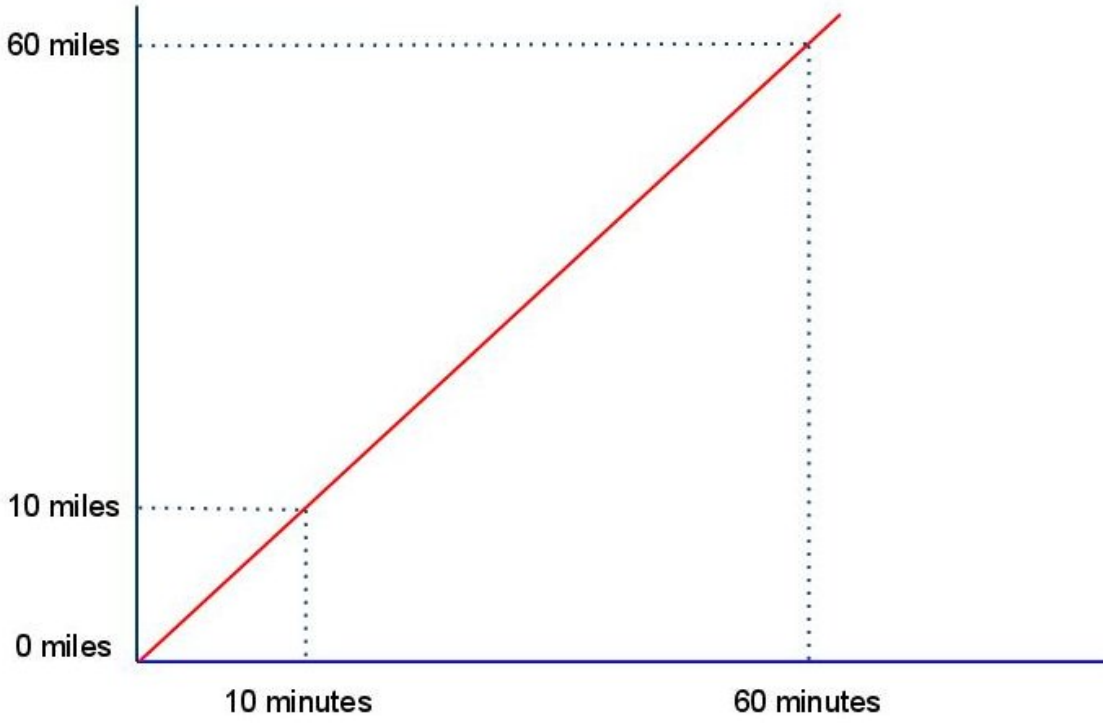
May 7, 2012

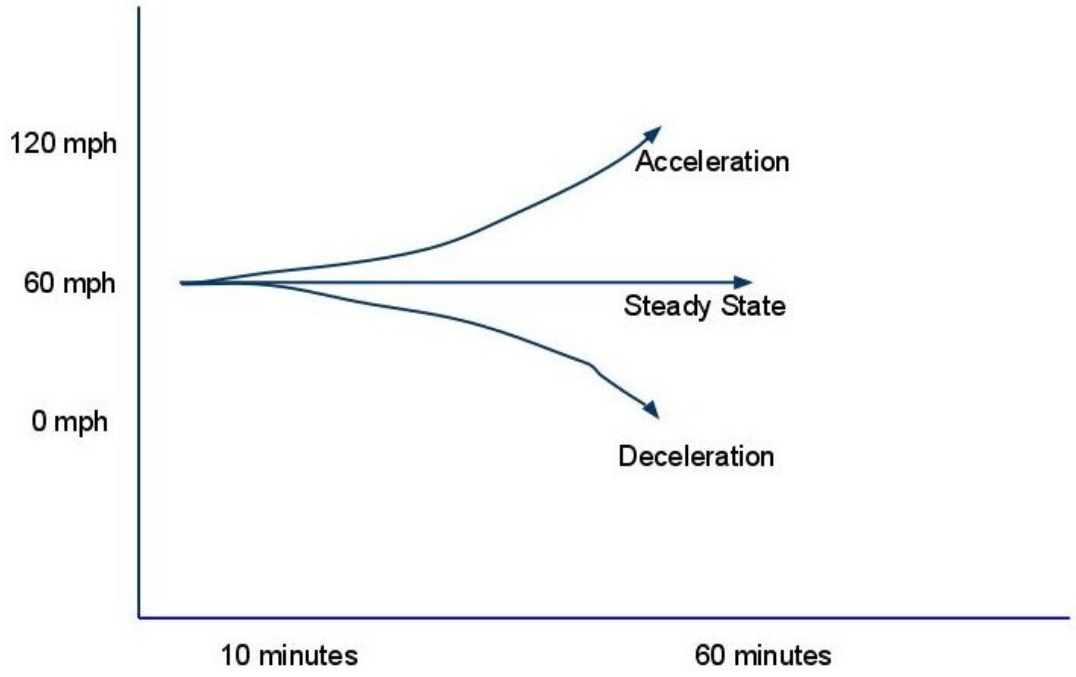
A. Patterns of Change

http://www.asrltd.com/expertise/climate-change-adaptation.php

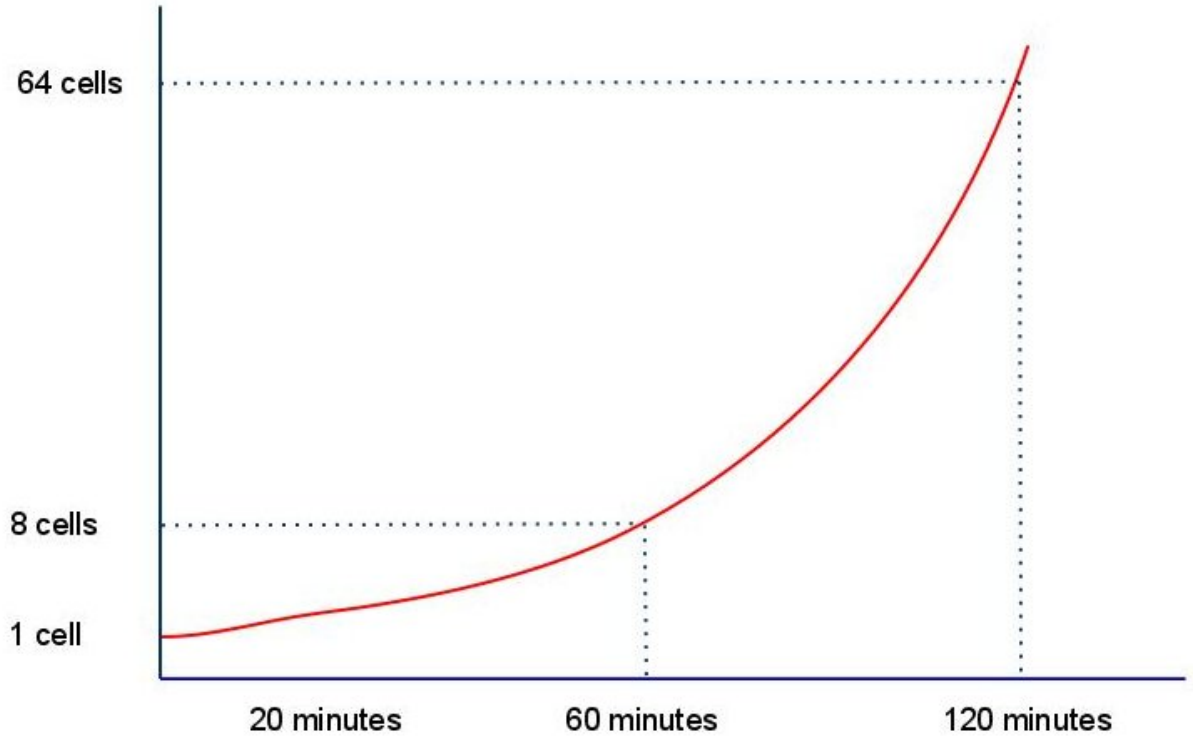
- Linear Change



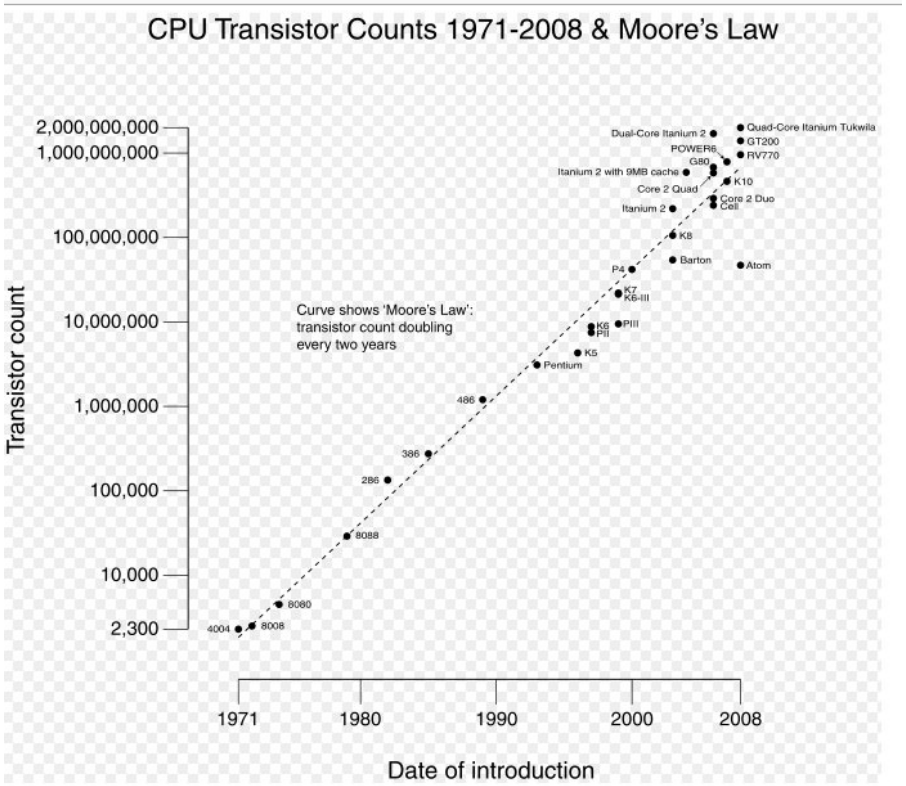
- Changes to Linear Change



- Exponential Change

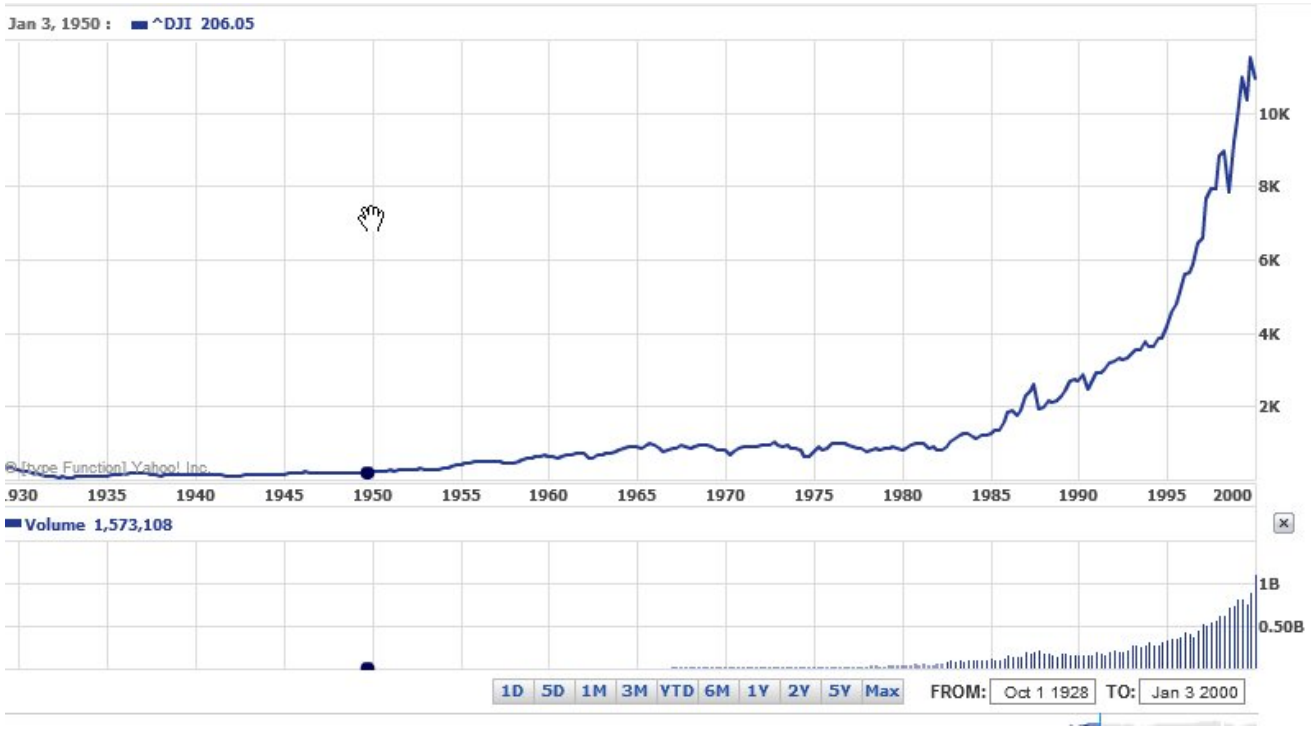


- Logarithmic Representation

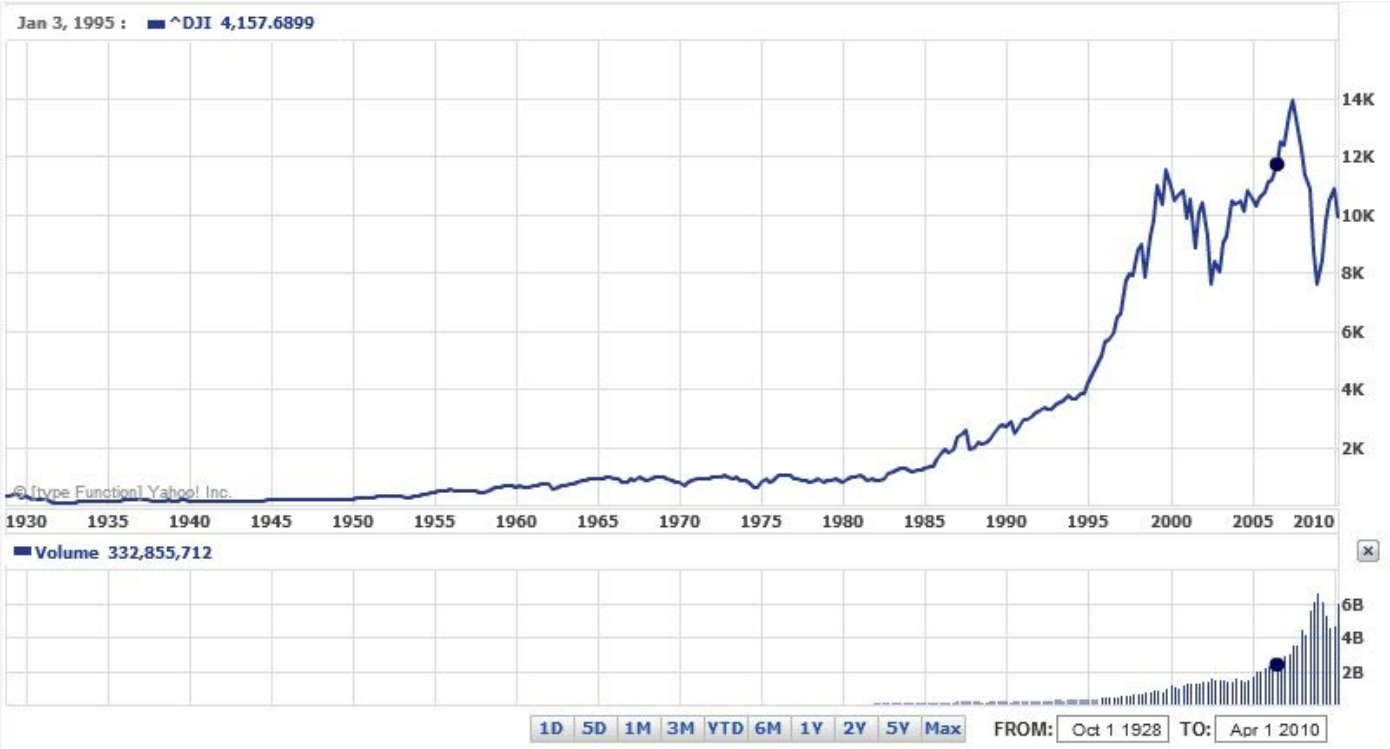


- *Models of progression* typically invoke either linear change or exponential change.
- The very concept of *progress* has, embedded in it, some notion of constant linear change, whether at a steady rate or an ever-increasing rate.

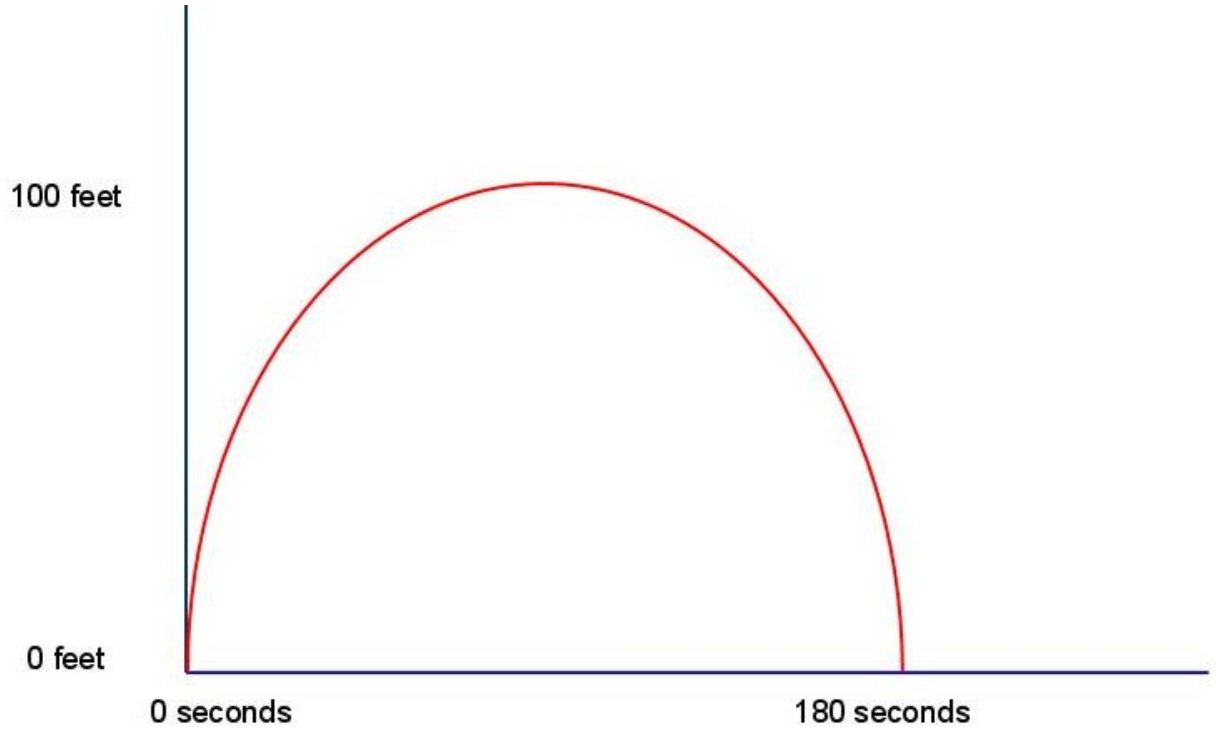
- Progress


Jan 3, 1950 : ^DJI 206.05
10K
8K
6K
4K
2K
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
Volume 1,573,108
1B
0.50B
1D 5D 1M 3M YTD 6M 1Y 2Y 5Y Max
FROM: Oct 1 1928
TO: Jan 3 2000

- Progress Interrupted

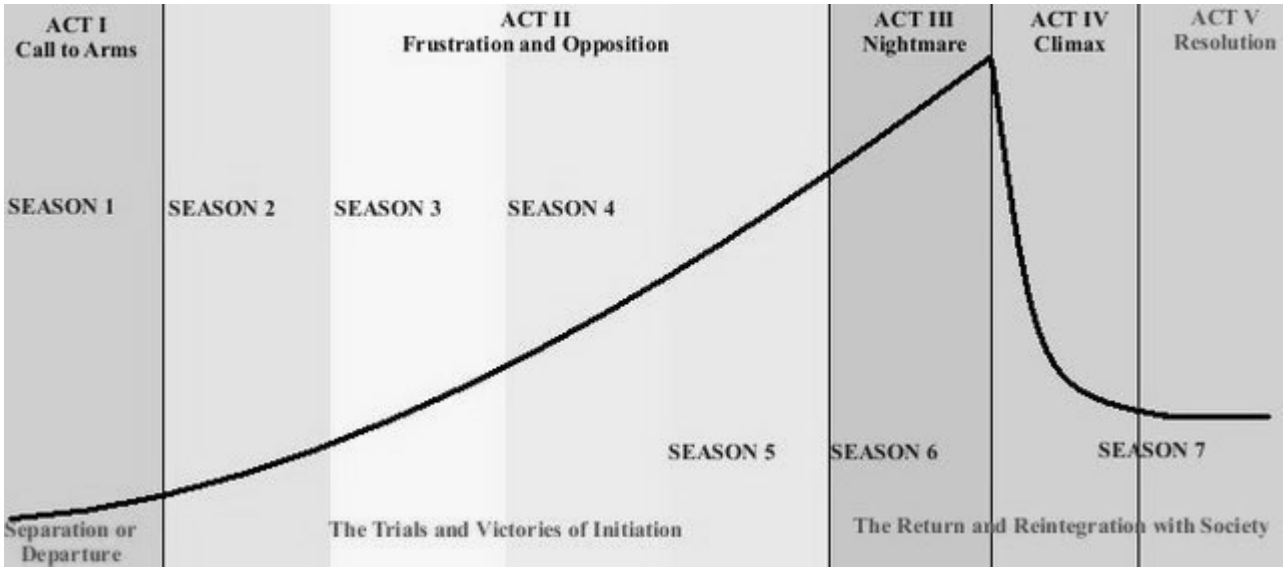


- Parabolic Change

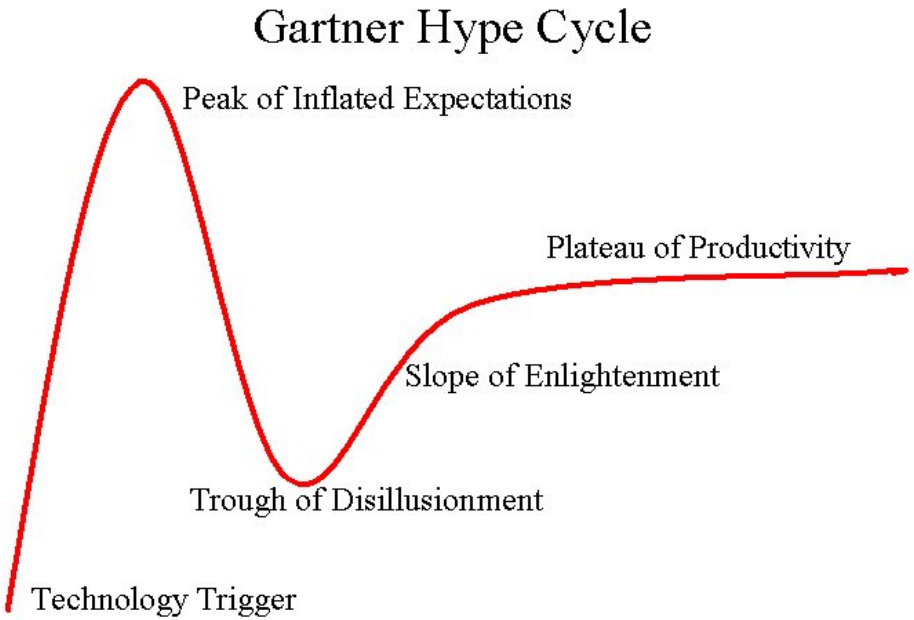


- Arnold Toynbee describes the arc of civilization in this way. Civilizations rise and fall, he writes, in a constant and predictable way. They expand in (more or less) a circular fashion until they grow too large for their infrastructure to support.

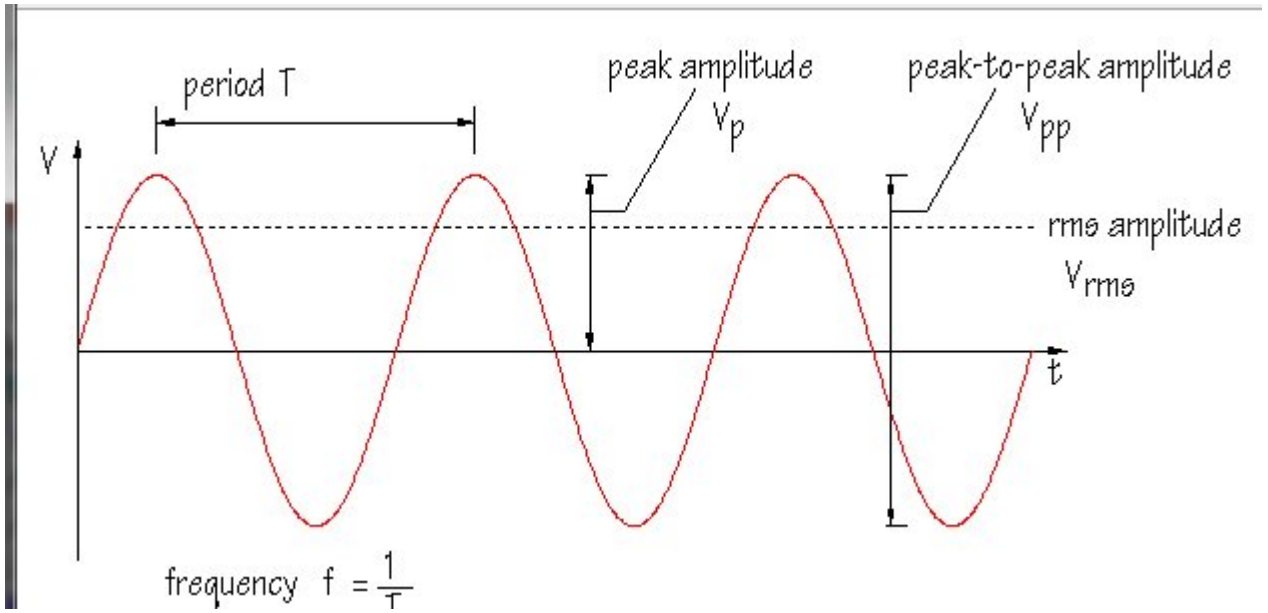
- Story Arc


ACT I
Call to Arms
ACT II
Frustration and Opposition
ACT III
Nightmare
ACT IV
Climax
ACT V
Resolution
SEASON 1
SEASON 2
SEASON 3
SEASON 4
SEASON 5
SEASON 6
SEASON 7
Separation or
Departure
The Trials and Victories of Initiation
The Return and Reintegration with Society

- Hype Cycle

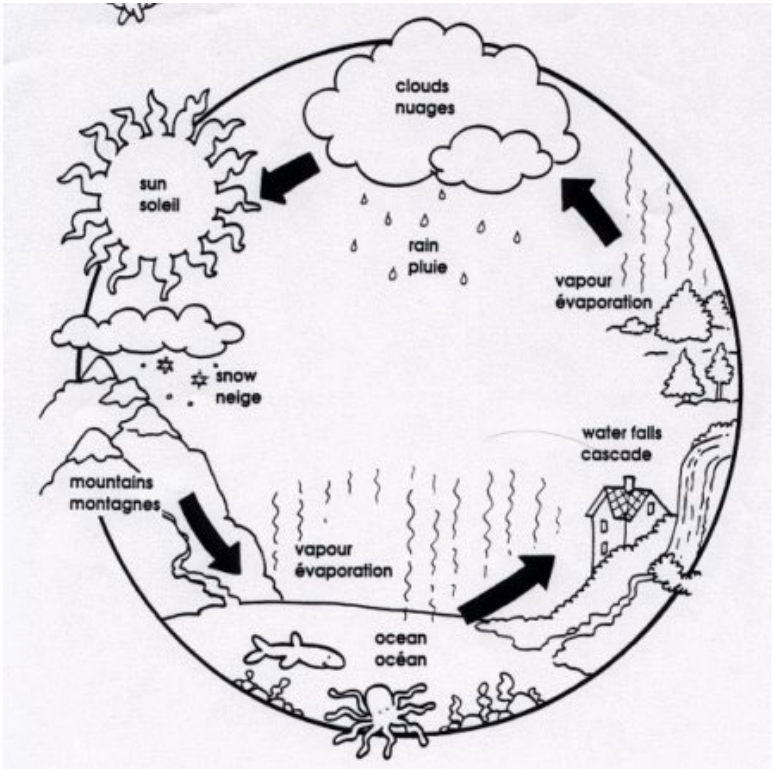

Gartner Hype Cycle
Peak of Inflated Expectations
Plateau of Productivity
Slope of Enlightenment
Trough of Disillusionment
Technology Trigger

- Cycles

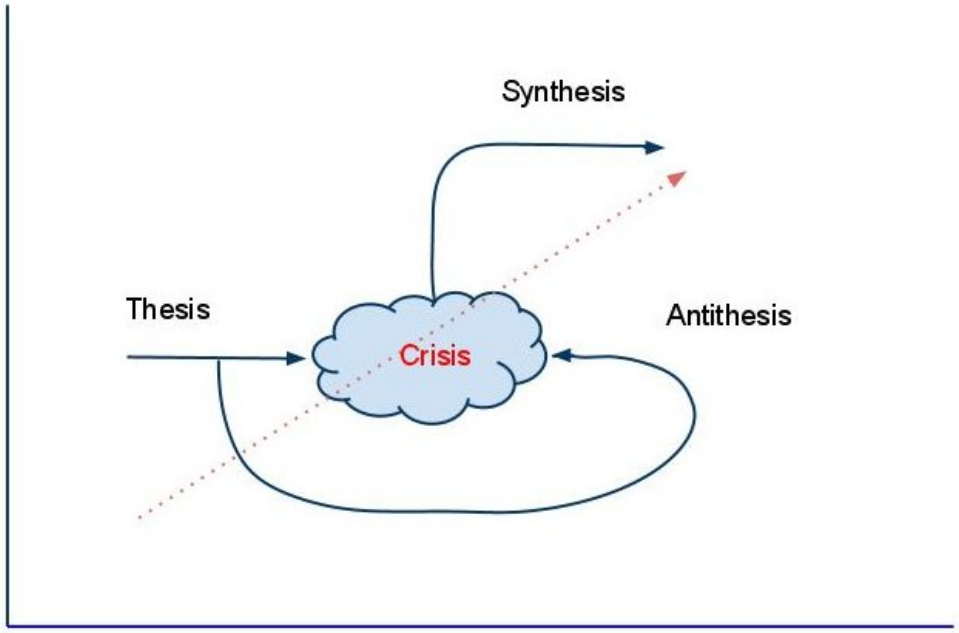

period T
peak amplitude
V_p
peak-to-peak amplitude
V_{pp}
V
rms amplitude
V_{rms}
t
frequency $f = \frac{1}{T}$

- We as humans are very sensitive to cycles. We create them, we repeat them, we have evolved an entire science of mathematics, electronics and music based on the manipulation of cycles. We are very prone to see them in the environment, and to expect to see the cycle repeat itself after a time.

- Water Cycle


clouds
nuages
sun
soleil
rain
pluie
vapour
évaporation
snow
neige
water falls
cascade
mountains
montagnes
vapour
évaporation
ocean
océan

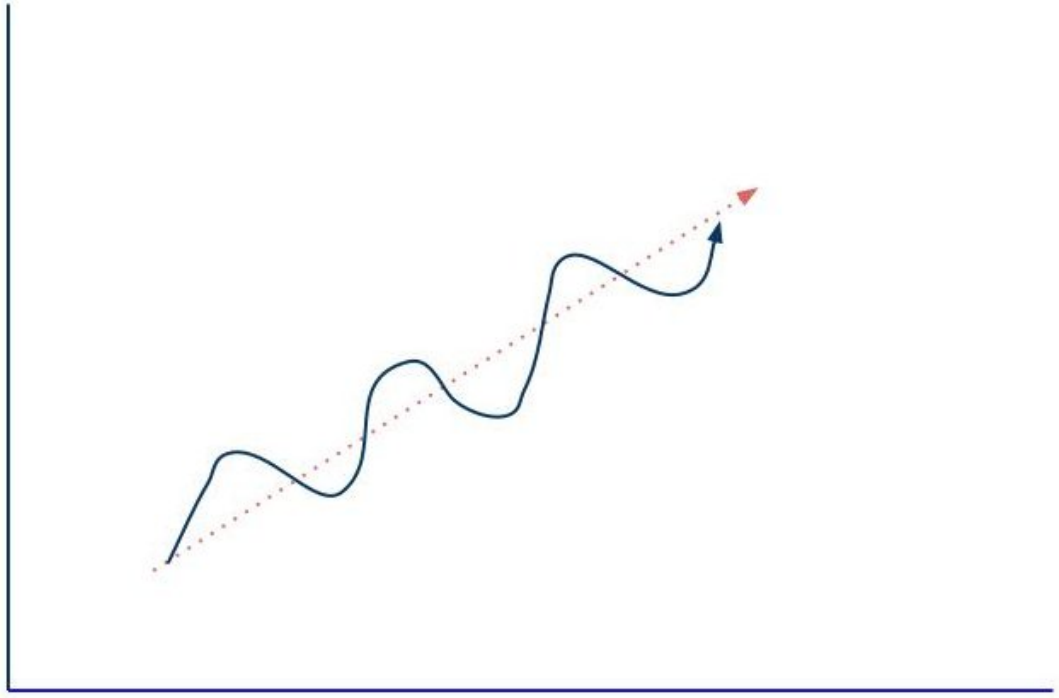
- The Dialectic



- The dialectic “contains elements of both cyclical and linear change, and thus change is spiral; significant change takes place as an attempt to resolve the accumulation of intolerable contradictions, the unravelling of stresses that are inherent in social life; short term repetitive change but with long term cumulative directional change; processes of change persist but the contents of the processes are changing.” - van der Veen

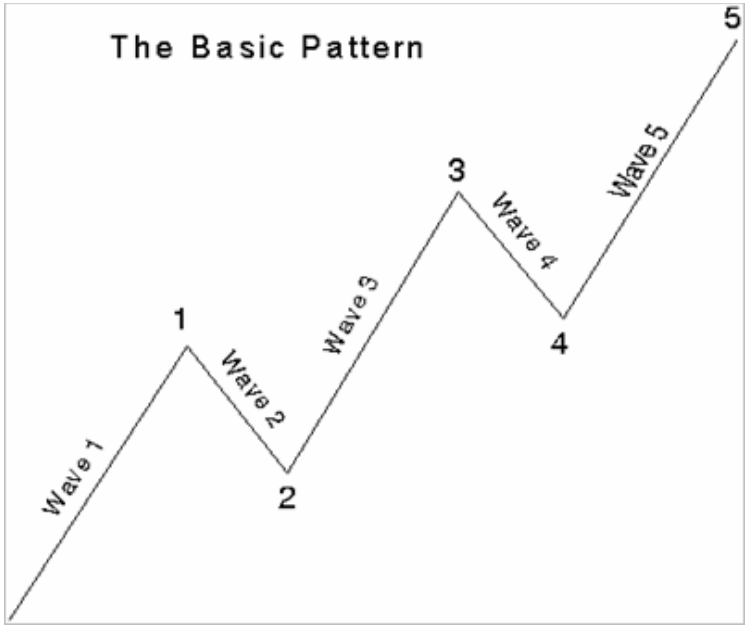
- The concept of the *paradigm shift*. According to Thomas Kuhn, science does not progress in a linear fashion, but rather progresses through a series of jumps, called paradigms. Within a paradigm we have what is called ‘normal science’, but eventually, contradictions, unexplained experimental results, and other problems and questions force the science into a crisis point. Through this crisis, our view of the world is revised, and we adopt new scientific theories, terms and concepts.

- Dialectic Cycles

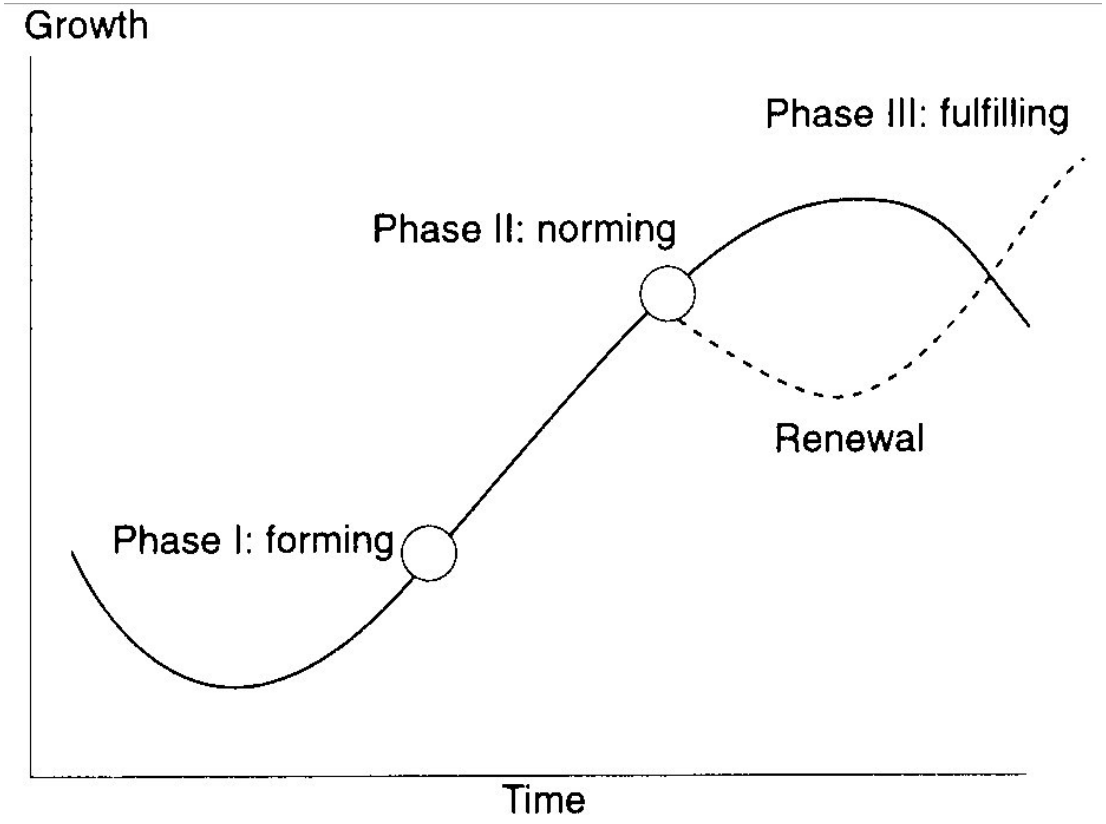


- Viewed from a certain perspective, these aren't cycles any more but *spirals*. The cycle may be progressing upward, or it may be progressing downward.
- Stock market analysts have created mathematical models on forms of the dialectic to predict swings in share values.

- Here is an example called the Elliott Wave Principle:



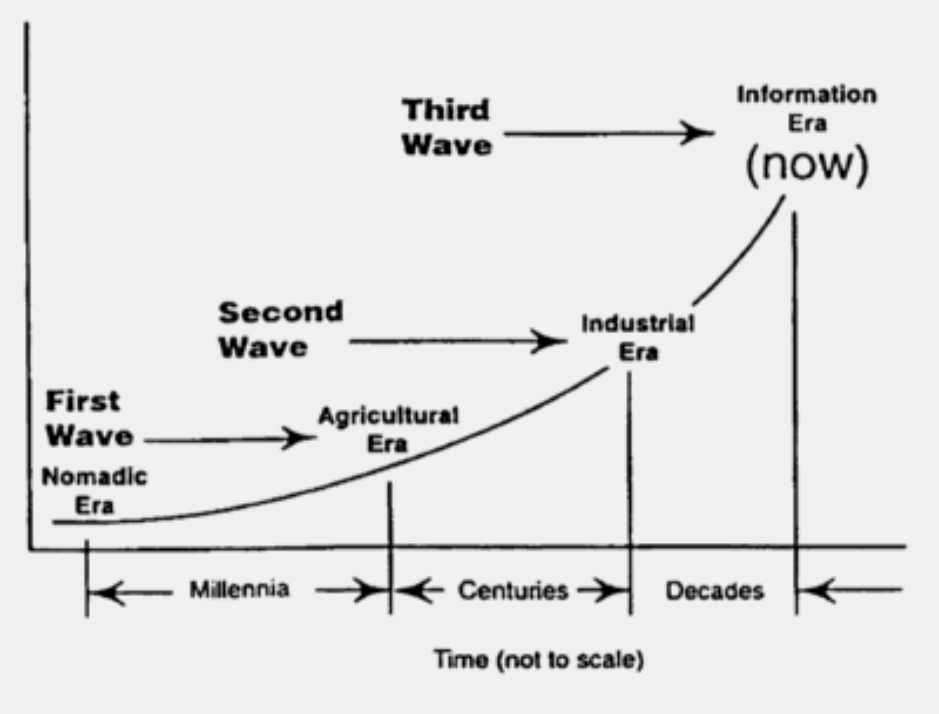
- Forming, Storming and Norming



Forming Norming - Source: McNamee and McNamee

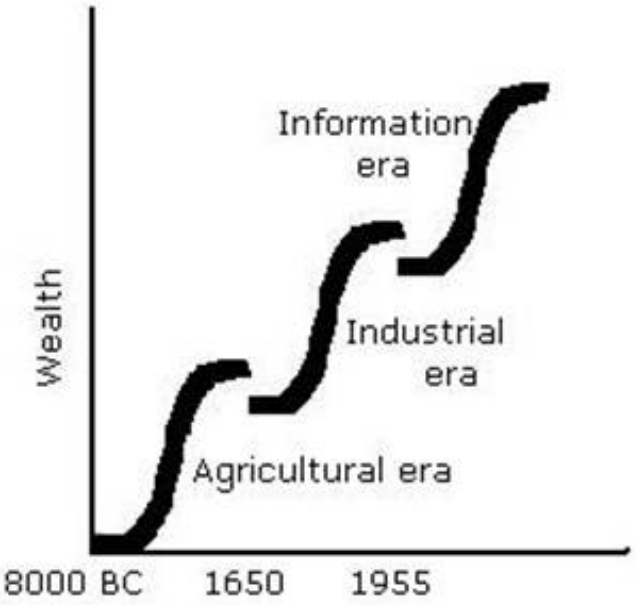
- Virtuous circles, vicious cyrcles
- Feedback loops - ne cycle feeds into the next cycle, accelerating its effects.
- Network effect or the first mover advantage. Vicious and virtual cycles occur in interconnected networks, where we have not only a circle much a much more interconnected web of entities.

- Waves



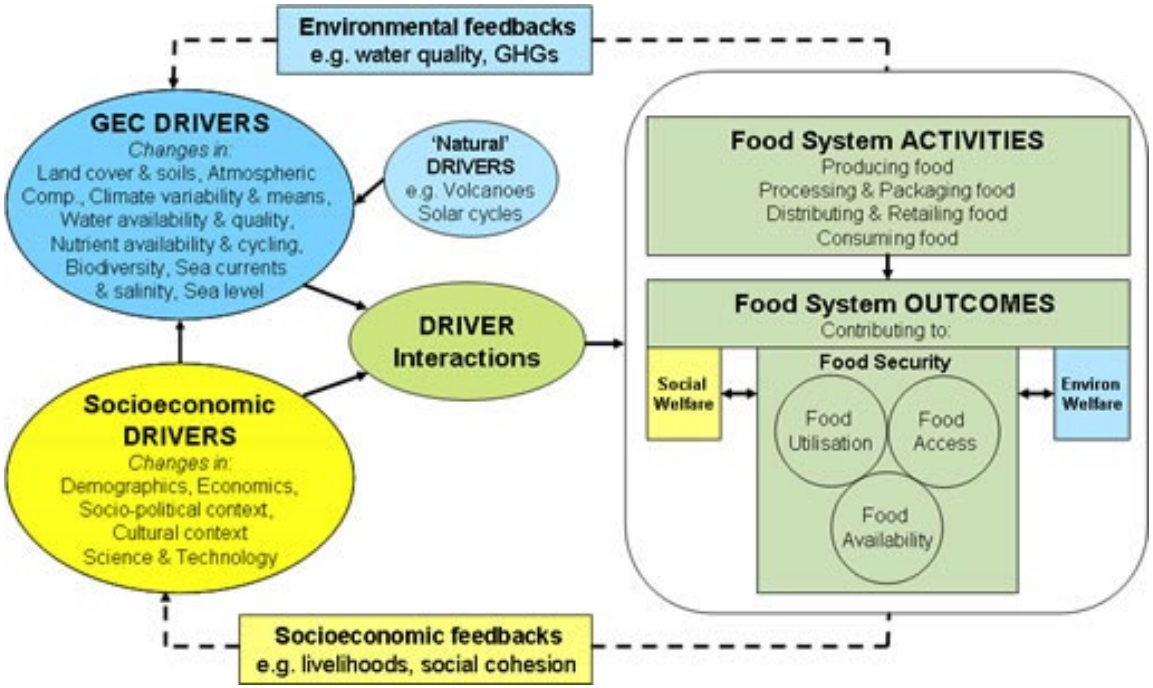
Third Wave - Exponential View - Source: Harbinger

- Waves and Eras

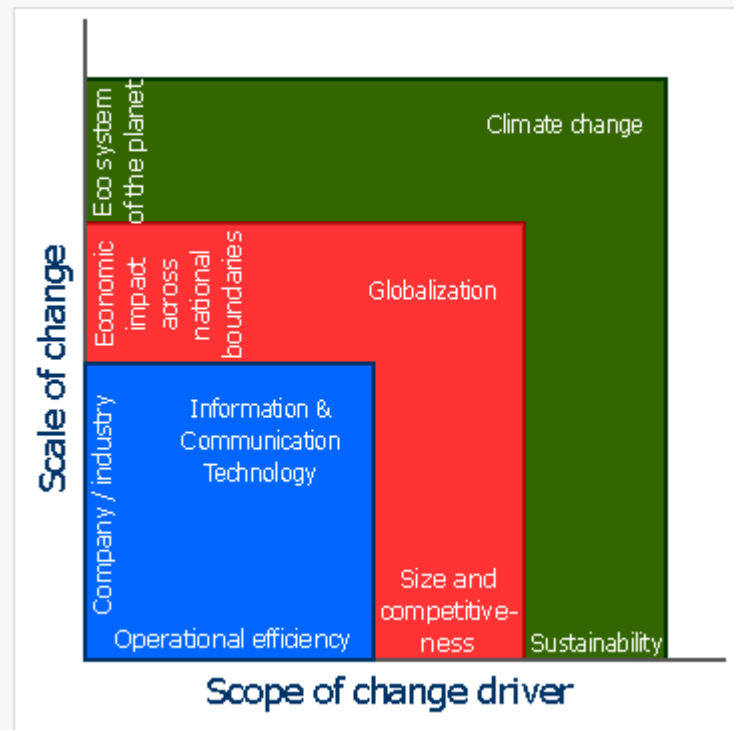


Toffler's Waves - Dialectic - Source: Maaw

- Drivers



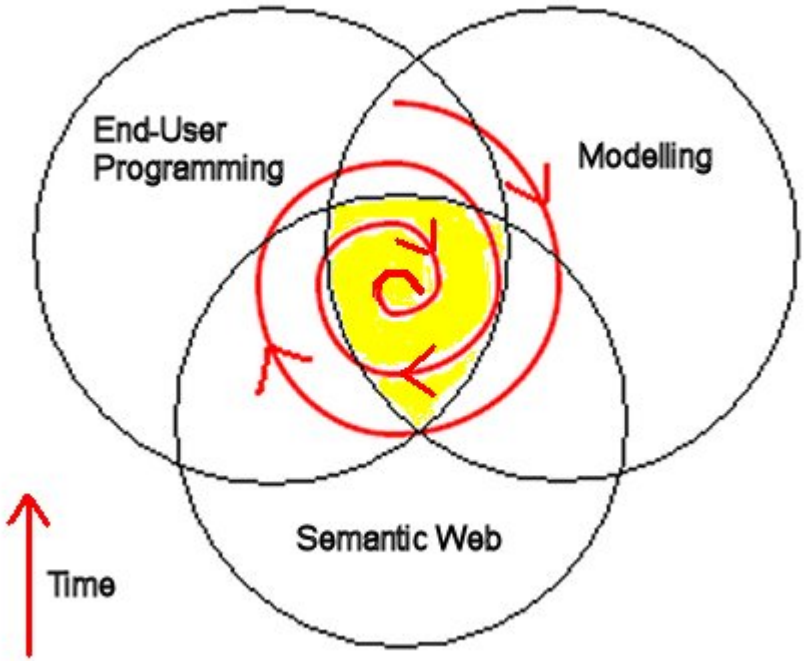
Driver Flow Chart - Source: Gecafs

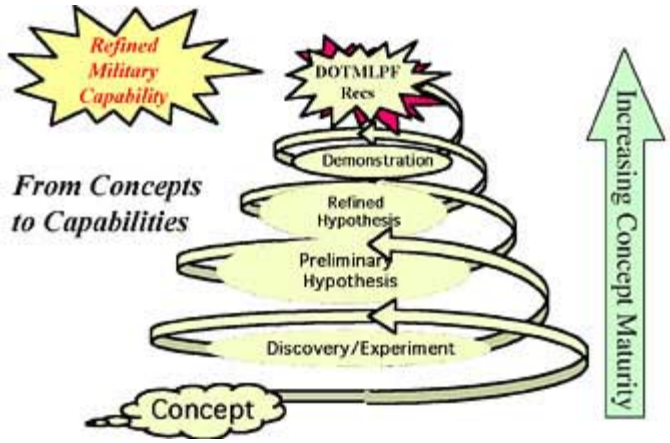


Drivers tend to be forces of nature – eg. three major drivers depicted: ICTs, globalization, and climate change. We see that these drivers are pushing us toward operational; efficiency, size and competitiveness, and sustainability.

Drivers of Change - Source: Alagse

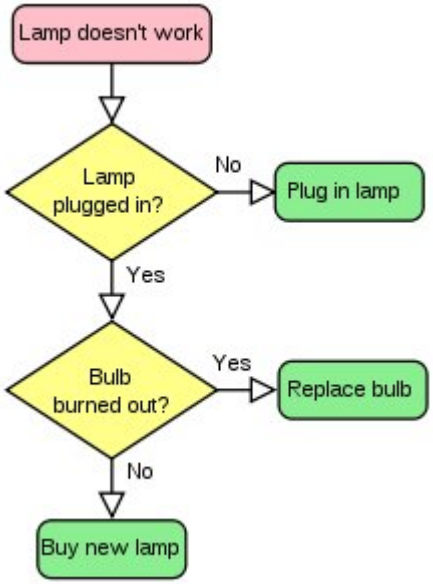
- Attractors





An attractor need not be physical, like gravity. It can also be an objective or goal. While such attractors can motivate change, they can't really be said to cause change – they require human agency for that.

- Design and Selection



This is reflective of the impact *choice* has on change.

B. The Problem of Progress

http://www.citycentrerichmond.ca/progress-at-the-city-centre-community-centre-site

- The book – ‘the progress trap’
- Sumer, Rome, Maya, Easter island (also Egypt and China)
- Tainter: Runaway train, dinosaur, house of cards

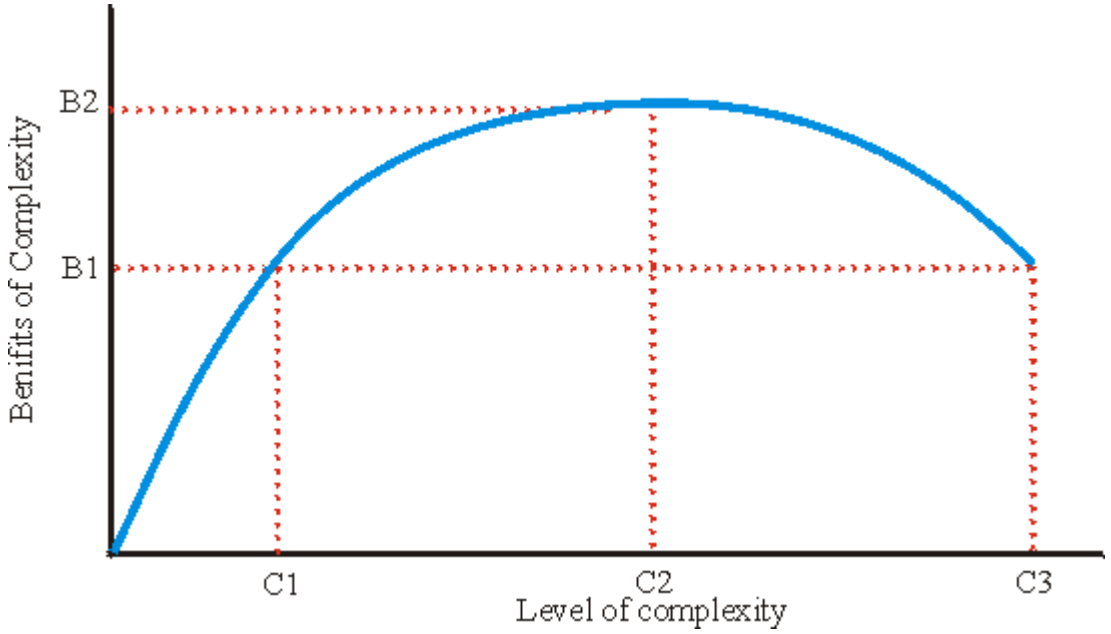
- Is ’doing it better’ a trap? Is ‘getting hunting right’ or ‘getting agriculture right’ wrong?

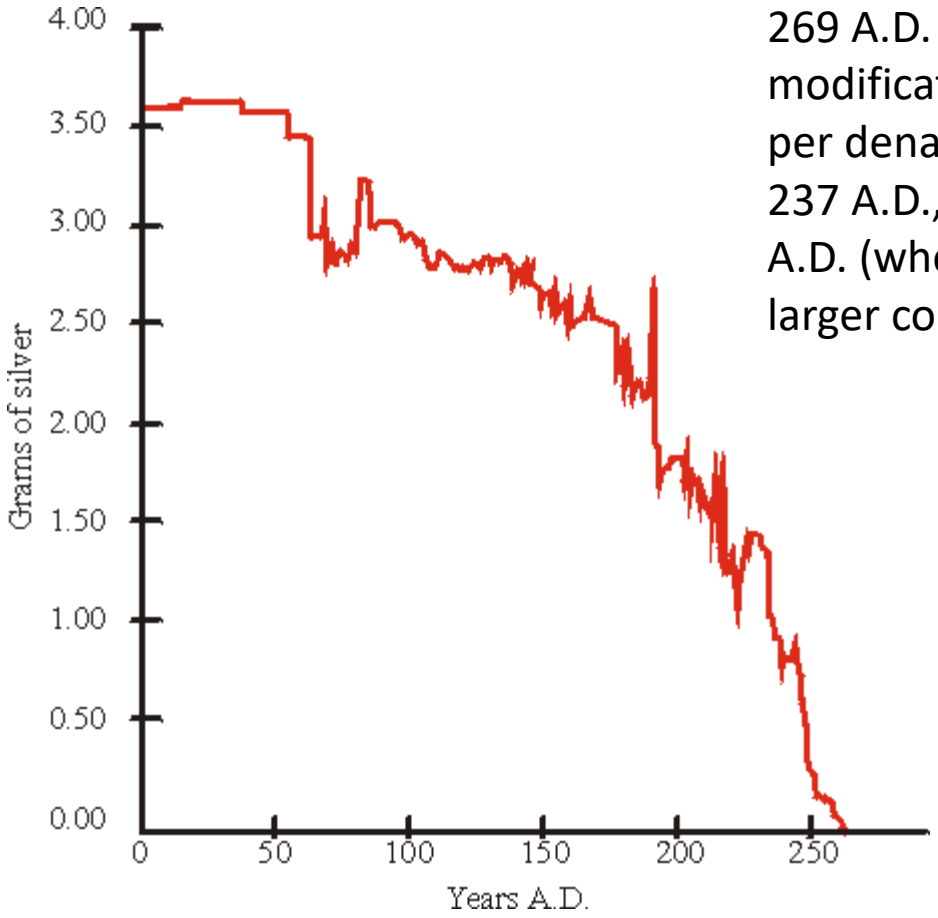
http://www.thecanadianencyclopedia.com/media/buffalo-hunt-over-the-jump-767.jpg

- What is progress? – survival, material comfort? How does it change?

http://traderjoes.org/wilderness-survival

- At a certain level of complexity, leadership breaks down, and becomes little better than shamanism – see Tainter 1996 - http://dieoff.org/page134.htm



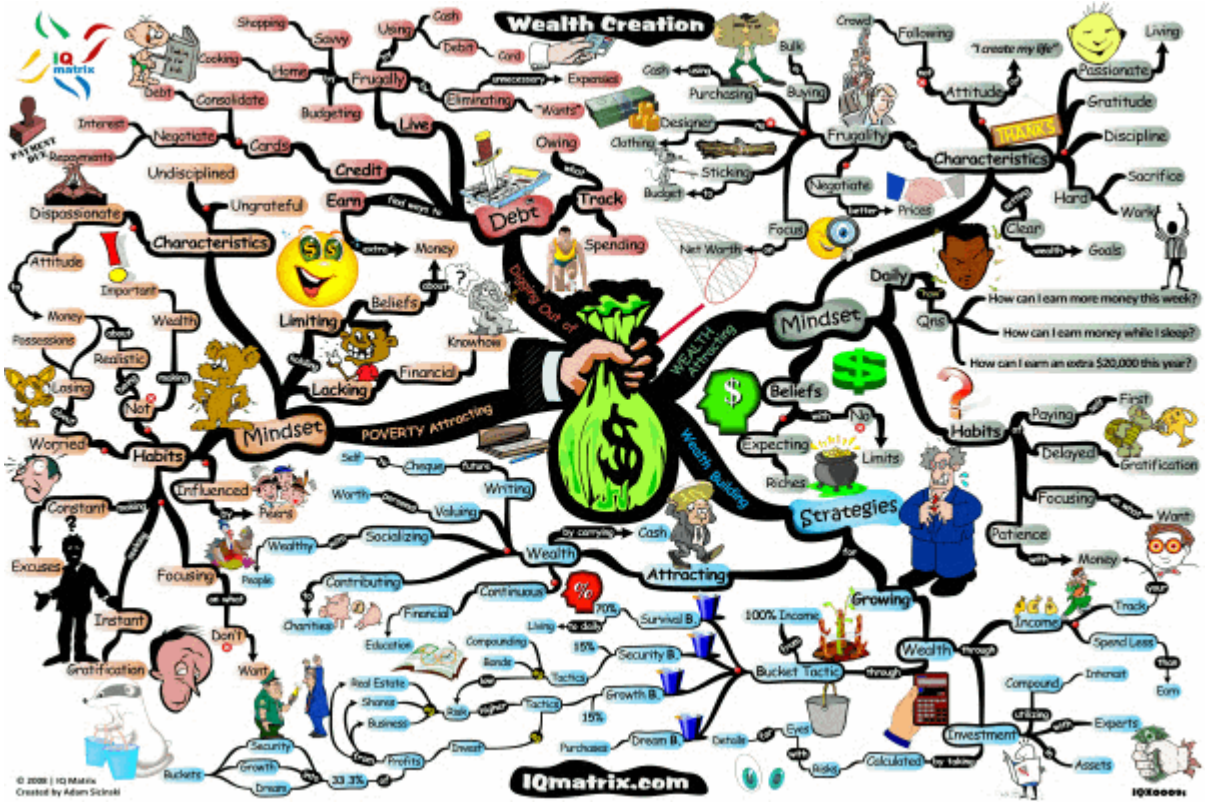


Debasement of the Roman silver currency, 0-269 A.D. (after Tainter 1994b with modifications). The chart shows grams of silver per denarius (the basic silver coin) from 0 to 237 A.D., and per 1/2 denarius from 238-269 A.D. (when the denarius was replaced by a larger coin tariffed at two denarii).

Tainter's thesis is that when society's elite members add one layer of bureaucracy or demand one tribute too many, they end up extracting all the value from their environment it is possible to extract and then some. The 'and them some' is what causes the trouble.

http://www.shirky.com/weblog/2010/04/the-collapse-of-complex-business-models/

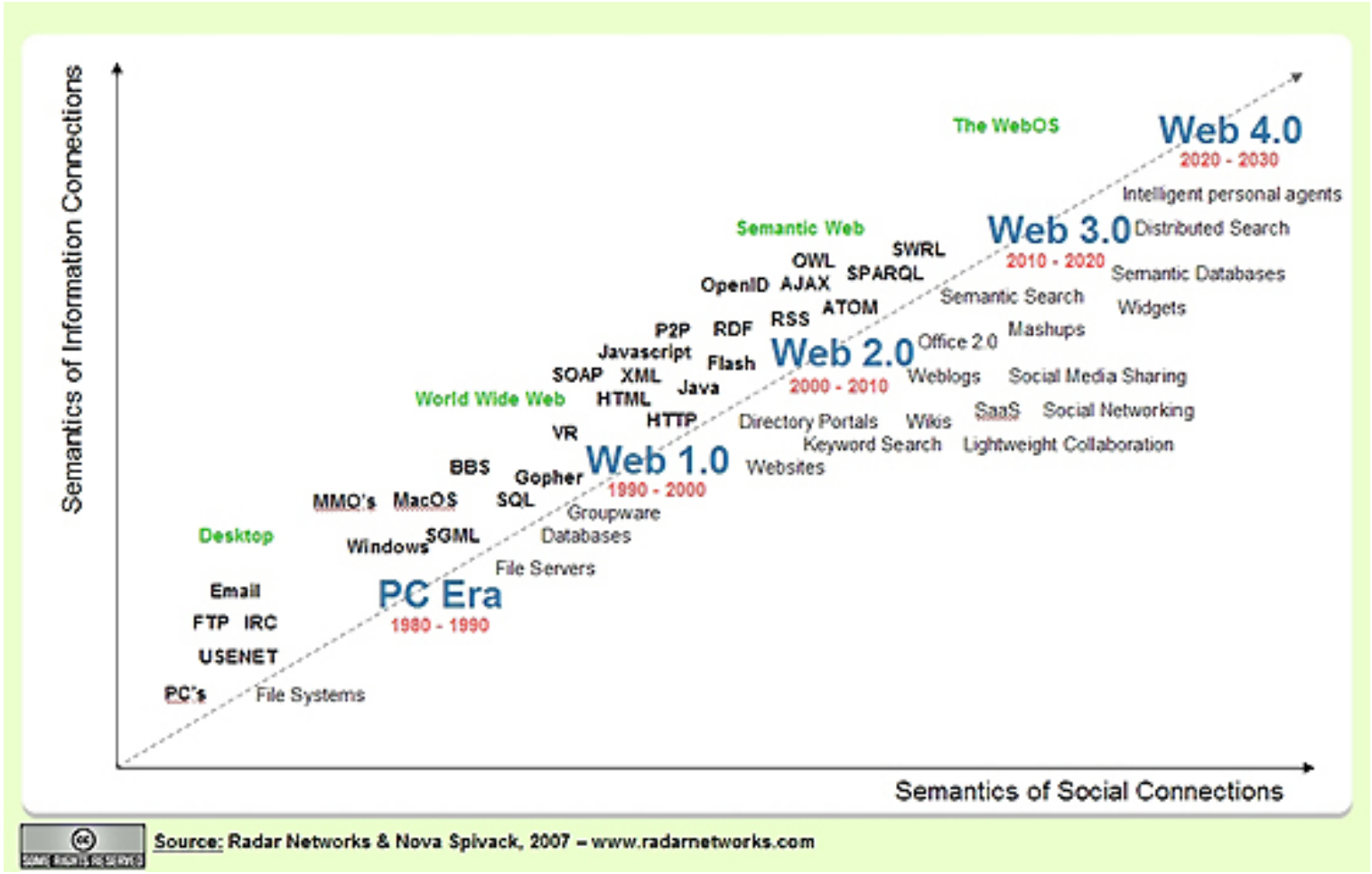
- Progress as Material Conform, Economic Growth, Prosperity, Wealth



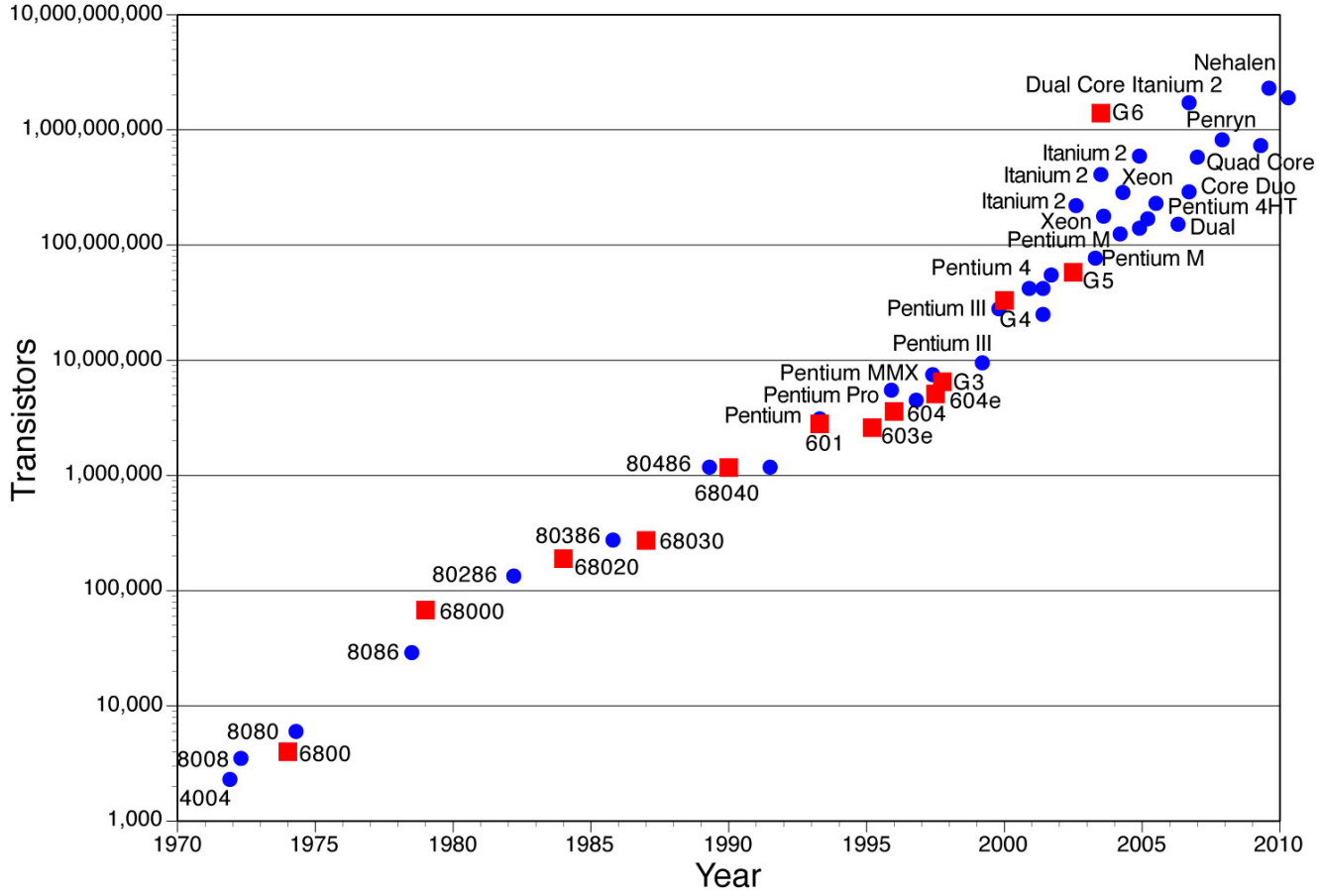
http://www.mindmapart.com/wealth-management-mind-map-adam-sicinski/

- The Forbes article -0 web 1.0, web 2.0, mobile
- with each new paradigm shift (first to social, now to mobile, and next to whatever else), the older generations get increasingly out of touch and likely closer to their significant decline.
- http://www.forbes.com/sites/ericjackson/2012/04/30/heres-why-google-and-facebook-might-completely-disappear-in-the-next-5-years/2/

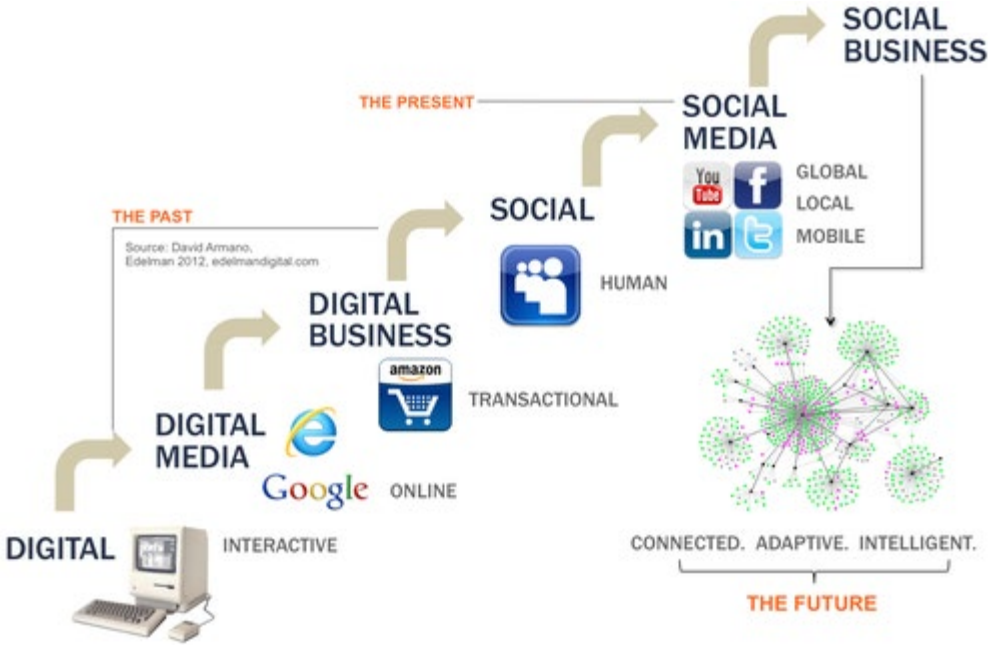
http://webredesignmiami.com/website_redesign_professionalism.php



http://lifeboat.com/ex/web.3.0

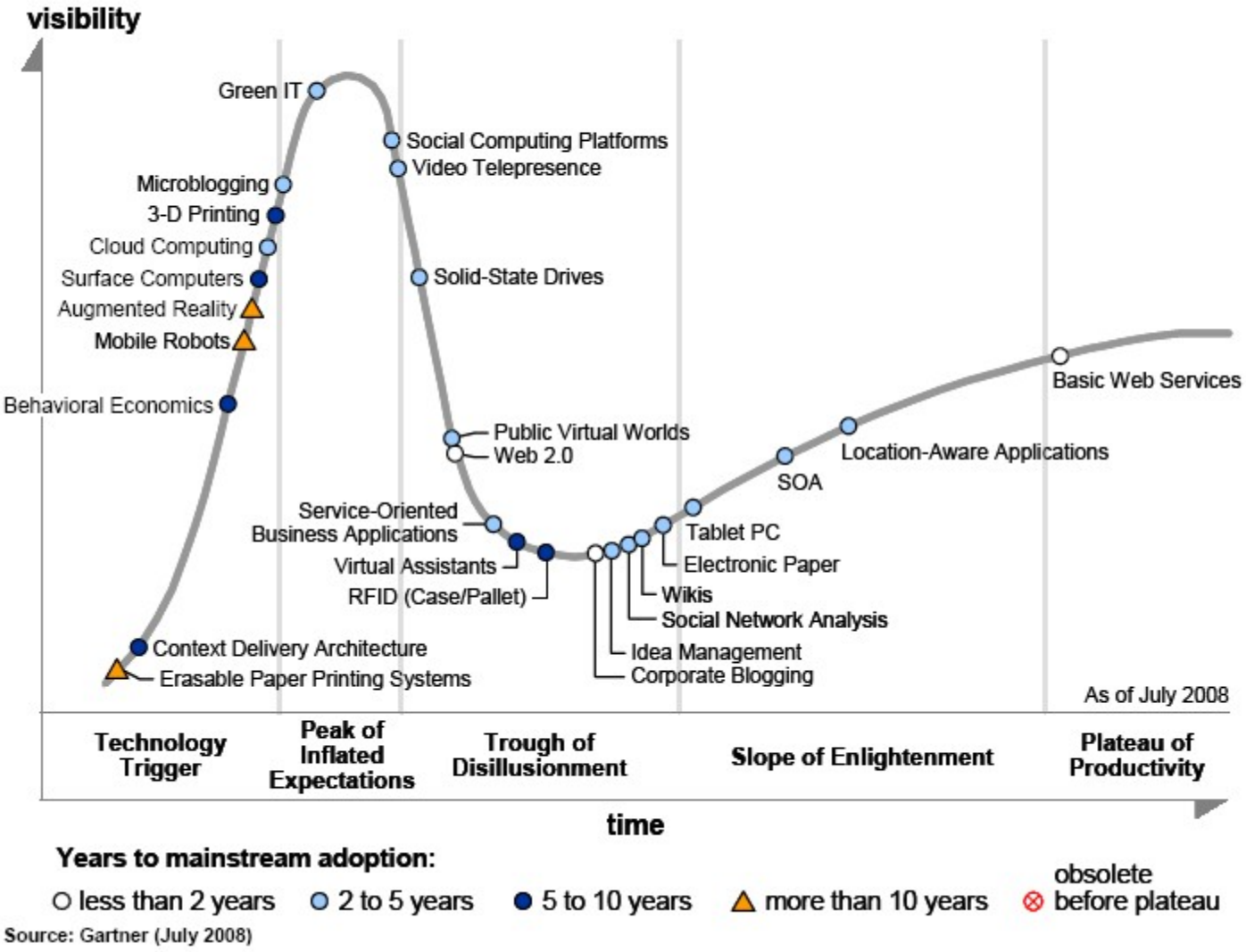


http://chemlinks.beloit.edu/edetc/SlideShow/



http://darmano.typepad.com/logic_emotion/2012/05/social_biz.html

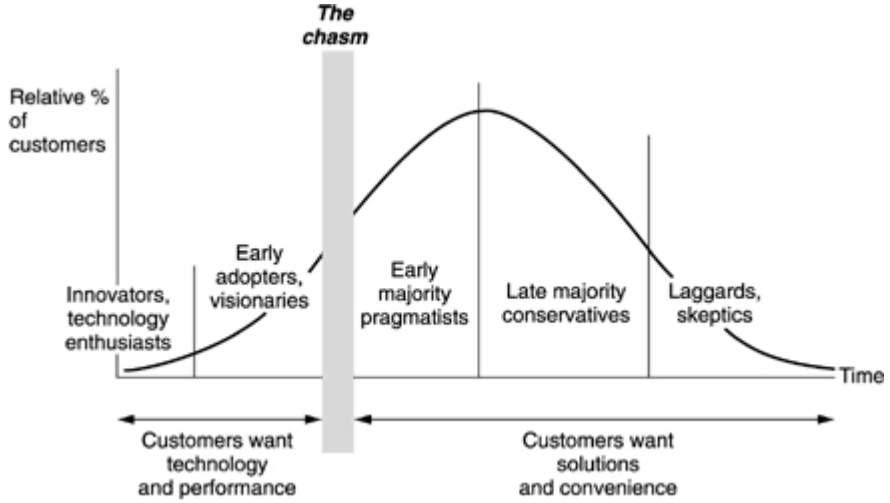
Figure 1. Hype Cycle for Emerging Technologies, 2008



Source: Gartner (July 2008)

http://stephenslighthouse.com/2008/08/19/gartner-web-2-0-hype-cycle/

The life cycle of a technology:
Why it is so difficult for large companies to innovate

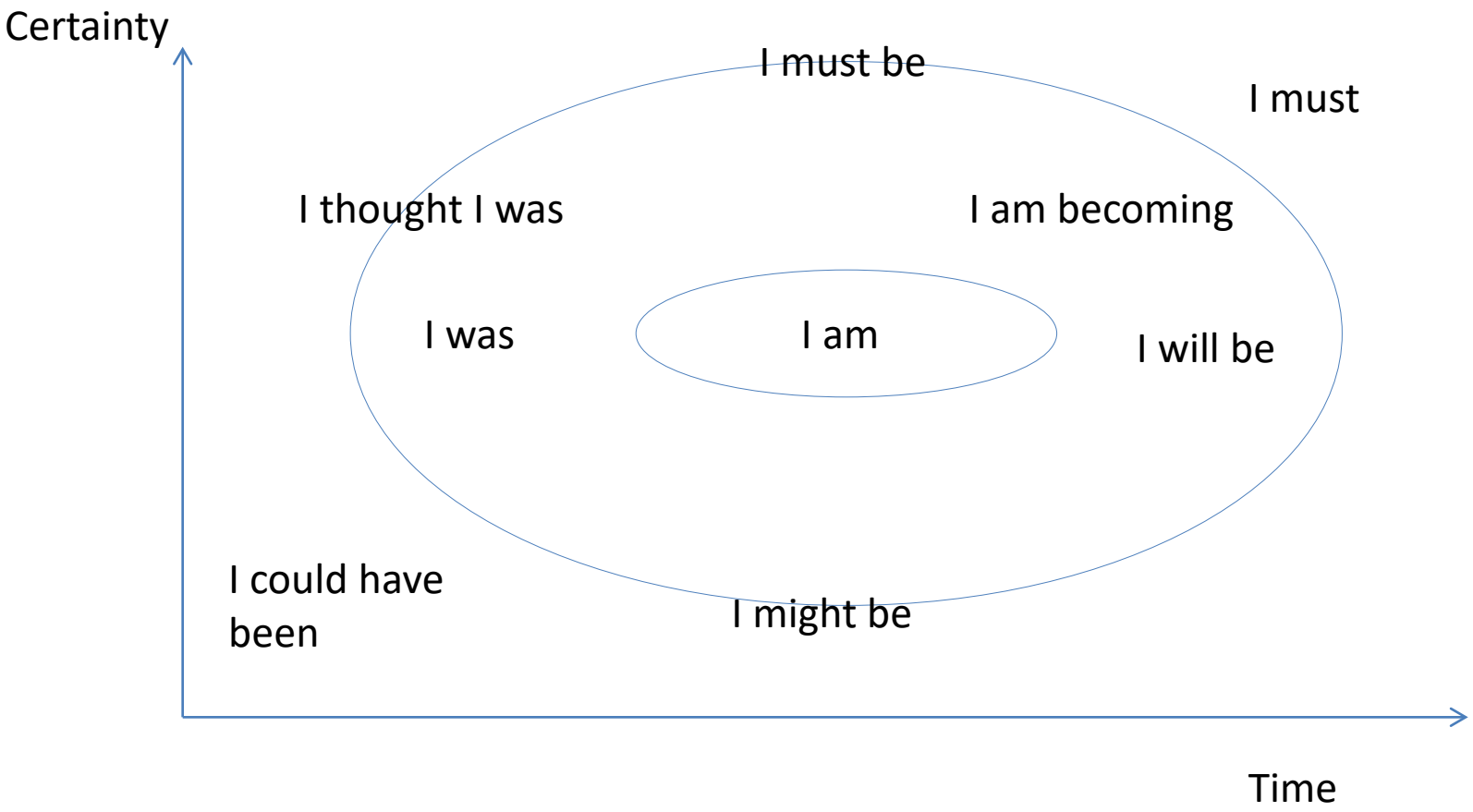


http://www.nngroup.com/reports/life_cycle_of_tech.html

Donald A. Norman

- Kakadu slide

- We are surrounded by a sea of possibility



- Wenger – Community as self-definition
- The transformation of the self from a consuming being to a knowing being

- Self interest & self-government – different kinds of progress
- – from life to property to liberty
- - from self-interest as defined by nature to self-interest defined by value
- From sovereign to self-government

- The way out of the progress trap is to remove the imperative for survival
- As long as there is wealth, people will desire wealth