Only Everybody Knows the Truth

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“In thirty years it will be as easy to ask a computer a question as to ask a person”

Alan Turing, 1946
A petabyte is a lot of data:

- 1 Petabyte = 20 million four-drawer filing cabinets filled with text
- 1 Petabyte = 13.3 years of HD-TV video
- 1.5 Petabytes = size of the 10 billion photos on Facebook
- 15+ Petabytes = Internet user’s data backed up on Mozy.com
- 20 Petabytes = the amount of data processed by Google per day
- 20 Petabytes = total hard drive space manufactured in 1995
- 50 Petabytes = the entire written works of mankind, from the beginning of recorded history, in all languages (all approximate)
The Hierarchy of Digital Distractions

From http://www.informationisbeautiful.net/visualizations/the-hierarchy-of-digital-distractions/
The Practical Problems
Challenges: Gate Leakage

Gate Leakage Current:
- Thinner gate oxides produce faster transistors
- We have reached the limit of Gate Oxide ($\text{SiO}_2$) scaling.
  - 30nm transistor had 0.8nm gate oxide
- Thinner oxides leak more.
  - Gate oxide can get so thin it no longer acts as a good insulator
$\Delta x \Delta p \geq \frac{h}{2\pi}$
\[
\frac{\text{Heat Generated}}{\text{Cooling}} = \frac{r^3}{r^2} = r
\]
E = hν
3 \times 5 = 15
The Conceptual Problems
Dave... I’m afraid I can’t let you do that...
A Rice Ontology
(via mikeaxelrod.com)
The Qualia Problem
The diagram illustrates the evolution of the internet from the PC Era to Web 4.0, focusing on the development of social connections and information connections. The timeline spans from 1980 to 2030, highlighting key technologies and concepts:

- **PC Era (1980-1990)**: Technologies such as PC's, File Systems, SGML, File Servers, USENET, Groupware, Databases, Windows, Mac OS, Gopher, HTTP, HTML, Java, Javascript, RDF, OWL, SPARQL, etc.


- **Web 2.0 (2000-2010)**: Innovations such as Semantic Web, SWRL, Semantic Search, Semantic Databases, Mashups, Widgets, Office 2.0, Weblogs, Social Media Sharing.

- **Web 3.0 (2010-2020)**: Features like Distributed Search, Intelligent personal agents, Semantic Databases, SaaS, Social Networking.

- **Web 4.0 (2020-2030)**: Future technologies including The WebOS, Intelligent personal agents, Semantic Databases, Widgets, Social Networking.

The vertical axis represents the semantics of information connections, while the horizontal axis indicates the semantics of social connections. The diagram is sourced from Radar Networks & Nova Spivack, 2007 – www.radarnetworks.com.
Self Portrait
Miro 1937
“Only everybody knows the Truth”
Goethe
Dependency of Disciplines