The Next Phase of Web2.0: Data

Jamie Taylor
eschew mentalistic explanations
you tend not to get caught up in them when working with preverbal animals
Internet Trolls: are shy people who engage in argumentation to fulfill their need for conversation and human contact.

Really? How do you know?
Let the data speak for itself

This is a description of a community.

2 users engaged in closed exchange.
Building

communities of data

Build Flexible Applications with Graph Data
350 Million Links

12 Million Nodes

350 Million Links
Native to a Web of Data

Tom Coates

http://www.plasticbag.org/files/native/
Network effects from user contributions are the key to market dominance in the Web 2.0 era.

- Tim O'Reilly
Network Effects
What is the story about?

Multiplying a scarce resource via community

This is an economic tale
The community was altered
The rules of exchange were altered
Changed the Economy

community = economy
So far...

Jamie is an economist in disguise
Stone Soup is an economic tale
Community is another word for economy
Models of Participation

In a community
Participatory Communities

Visitors Contributing

flickr 0.16%
YouTube 0.2%
Wikipedia 4.56%

Source: Hitwise, reported by Bill Tancer 4/25/2007 in Time Magazine
Pyramid of Contribution
Following Bradley Horowitz
Pyramid of Contribution
Following Bradley Horowitz

- Creators
- Synthesizers
- Consumers
Methylene blue is a heterocyclic aromatic chemical compound with molecular formula: $\text{C}_{16}\text{H}_{18}\text{N}_3\text{SCI}$. It has many uses in a range of different fields, such as biology and chemistry. At room temperature it appears as a solid, odorless, dark green powder, that yields a blue solution when dissolved in water. The hydrated form has 3 molecules of water per molecule of MB. Methylene blue should not be confused with methyl blue, another histology stain, new methylene blue, nor with the methyl violets often used as pH indicators.

The terms "methylthioninium chloride" and "methylene blue" are sometimes used interchangeably.

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### Uses

#### 1.1 Chemistry

- **Redox indicator**
- **Peroxide generator**
- **Sulfide analysis**

#### 1.2 Biology

#### 1.3 Medicine

- **Malaria**
- **Cancer**
- **Combined with light**
- **Methemoglobinemia**
- **Cyanide poisoning**
- **Carbon monoxide poisoning**
- **Dye**
- **Placebo**
- **Ilosafamide neurotoxicity**
- **Clinical trials**

#### 1.4 Aquaculture

#### 1.5 As a prank

#### 1.6 Adverse reactions

### Properties

- **Molecular formula**: $\text{C}_{16}\text{H}_{18}\text{N}_3\text{SCI}$
- **Molar mass**: 319.85 g/mol
- **Melting point**: 100-110 °C (with decomposition)
- **Boiling point**: Decomposes

Except where noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa).
Methylene Blue, methylthionine chloride or 3,7-bis(dimethylamino)phenothiazin-5-ium chloride, with a molecular formula of C_{16}H_{18}ClN_{3}S, is a dye and medication used in Gram's stain, Wright stain, and the treatment of metoxyhemoglobinemia. Its CAS number is 61-73-4: its EC number is 200-515-2.
Pyramids of Contribution Opportunities

Community at any scale.
Not just one pyramid.
Each Pyramid of contribution fosters many others.
[Freebase-discuss] Promote Namesake type to Commons?  Thad Guidry

[Freebase-discuss] Project location - Was Updating the business schema: UPDATE  Tom Morris
  ○ [Freebase-discuss] Project location - Was Updating the business schema: UPDATE  Paul Mackay

[Freebase-discuss] Correcting related website errors  Chris Caceres
  ○ [Freebase-discuss] Correcting related website errors  Jason Douglas

[Freebase-discuss] Promote Namesake type to Commons?  Chris Caceres
  ○ [Freebase-discuss] Promote Namesake type to Commons?  Tom Morris

[Freebase-discuss] good ways to spot "weeds" in "gardened" sections of Freebase?  Jeff Prucher
  ○ [Freebase-discuss] good ways to spot "weeds" in "garded" sections of Freebase?  Raymond Yee
  ○ [Freebase-discuss] good ways to spot "weeds" in "garden" sections of Freebase?  Raymond Yee

[Freebase-discuss] cuppla blog posts...  Tom Morris
  ○ [Freebase-discuss] cuppla blog posts...  Jason Douglas
    ▪ [Freebase-discuss] cuppla blog posts...  Jason Douglas

[Freebase-discuss] Maps on Location topic page  Tom Morris

[Freebase-discuss] Cursor bug or pilot error?  Tom Fisher

[Freebase-discuss] query assistance  Marc Slayton
  ○ [Freebase-discuss] query assistance  Vishal Talwar
    ▪ [Freebase-discuss] query assistance  Marc Slayton
    ▪ [Freebase-discuss] query assistance  Philip Kendall
    ▪ [Freebase-discuss] query assistance  Philip Kendall

[Freebase-discuss] Using cursor in mqlread returns same results every time  karthik c
  ○ [Freebase-discuss] Using cursor in mqlread returns same results every time  Tom Morris
    ▪ [Freebase-discuss] Using cursor in mqlread returns same results every time  Philip Kendall
    ▪ [Freebase-discuss] Using cursor in mqlread returns same results every time  Philip Kendall
    ▪ [Freebase-discuss] Using cursor in mqlread returns same results every time  karthik c
    ▪ [Freebase-discuss] Using cursor in mqlread returns same results every time  Tom Morris

[Freebase-discuss] getting started at working with namespaces / taking on a reported bug as non-staff  Raymond Yee
  ○ [Freebase-discuss] getting started at working with namespaces / taking on a reported bug as non-staff  Bryan Cheung
    ▪ [Freebase-discuss] getting started at working with namespaces / taking on a reported bug as non-staff  Raymond Yee
    ▪ [Freebase-discuss] getting started at working with namespaces / taking on a reported bug as non-staff  Tom Morris
    ▪ [Freebase-discuss] getting started at working with namespaces / taking on a reported bug as non-staff  Raymond Yee
    ▪ [Freebase-discuss] getting started at working with namespaces / taking on a reported bug as non-staff  Tom Morris

[Freebase-discuss] Updating the business schema: UPDATE  Jeff Prucher
  ○ [Freebase-discuss] Updating the business schema: UPDATE  Thad Guidry
    ▪ [Freebase-discuss] Updating the business schema: UPDATE  Thad Guidry

[Freebase-discuss] Where did help go?  Tom Morris
  ○ [Freebase-discuss] Where did help go?  Kirrily Robert
    ▪ [Freebase-discuss] Where did help go?  Kirrily Robert
Users will create/fill-in missing mechanisms. Can we capture/extend their work (to take advantage of the data they are creating.)
Need to understand the structure of the conversation to analyze it.
Percolation
$P = 0.6$

after 60 steps
The Architecture of Participation

...modular architecture that allows easy participation by independent or loosely coordinated developers.

- Tim O'Reilly
NK Boolean Networks

As you increase the number of connections
A parameterized model of coupling.
As $K$ increases, the space of values becomes less predictable.

- single-peaked
- moderately rugged, correlated
- randomly multi-peaked, uncorrelated
Linear Value N
Metcalfe's Law

$N^2$
Group Formation Networks

$2^N$
Reed's Law

![Graph showing the growth of value with N, N^2, and 2^N over N. The graph illustrates the exponential growth of 2^N compared to linear growth of N and quadratic growth of N^2.]
The graph shows the value of different communication methods as a function of the number of people involved, N. The methods are categorized as Broadcast, Email, and Chatrooms.

- **Broadcast**: Value is $N$.
- **Email**: Value is $N^2$.
- **Chatrooms**: Value is $2^N$.

The graph illustrates how the value increases dramatically with the number of people as we move from Broadcast to Email to Chatrooms.
Controlled Vocabulary

Lesson 3 – Wedding vocabulary; sentences.

Vocab:

die Braut

der Bräutigam
das Brautpaar
der Tag
die Torte

“br-ow-t”
“br-oi-ti-gam”
“br-ow-t-par”
“t-a-g”
“t-oar-te”

bide
bridegroom
bridal couple
day
cake
http://www.flickr.com/photos/acme/2707444462
### Activities:
- programming

### Interests:
- Programming language
- Web programming
- Moo Programming
- Game programming
- Computer programming

### Books:
What books do you like?

### Movies:
What movies do you like?

### Television:
What TV shows do you like?
Our goal is to make this Community Page the best collection of shared knowledge on this topic. If you have a passion for **Web programming**, sign up and we'll let you know when we're ready for your help.

### Description

**Web development** is a broad term for the work involved in developing a **web site** for the Internet (World Wide Web) or an intranet (a private network). This can include web design, web content development, client liaison, client-side/server-side scripting, web server and network security configuration, and e-commerce development. However, among web professionals, "web development" usually refers to the main non-design aspects of building web sites: writing markup and coding. Web development can range from developing the simplest static single page of plain text to the most complex web-based internet applications, electronic businesses, or social network services.

For larger businesses and organizations, web development teams can consist of hundreds of people (web developers). Smaller organizations may only require a single permanent or contracting webmaster, or secondary assignment to related job positions such as a graphic designer and/or Information systems technician. Web development may be a collaborative effort between departments rather than the domain of a designated department.

### Related Global Posts

- **HiddenBrains Infotech** - [php website development India, php web programming](http://www.hiddenbrains.com/hire-php-developer-hire-php-developersteam.html)

  2 hours ago - View Feedback (1)
Semantics Inside
Using well-known semantics connects you to other communities:
- Open Graph Protocol
- Freebase
- HTML5 Microformats
Cumulative Advantage
Clocks didn’t have to look like this.
Many early clocks were 24 hour clocks.
10,000 year clock
Conceived by Danny Hillis, co-founder of Metaweb
Enough people started using this format that it became the standard....

VHS/Betamax anyone?
Is Justin Timberlake a Product of Cumulative Advantage?

The rich get richer
and
Connected data attracts more connections
The foundation behind:

- Scale Free Networks
- Small World Networks
"If you need scale in order to create value, it's hard to get scale, because there's little incentive for the first people to use the product. Ideally, the system should be useful for user number one."

-Joshua Schachter, 2006
Old - but still filled with great ideas!

“Peer-to-peer is the next great thing for the Internet.”
—Lawrence Lessig, Stanford Law School, author Code and Other Laws of Cyberspace

PEER-TO-PEER

Harnessing the Power of Disruptive Technologies

Edited by Andy Oram
Dan Bricklin: Cornucopia of the Commons

• Three ways to build a database
  • Organize manually
  • Organize mechanically
  • Get volunteers to build it
"...one can predict the success of a particular system for building a shared database by how much the database is aided through normal, selfish use."

-Dan Bricklin, 2001
Cumulative advantage

Architecture for participation

Community at all scales

Cumulative Advantage:
- once people started to contribute, it was easier for others to contribute, positive feedback.

Architecture for Participation:
- loosely coupled.
- If one contribution failed, others could succeed.

Community at all scales:
- different type of contribution
- individual contributions,
- family contributions,
- pre-cooked contributions
- community contributions

Multiplying a scarce resource via community
Think about data accumulation in interaction design

Design for Network Effects
- Allow community to work at all scales
- Provide tools for bifurcation management
- Facilitate Percolation (but don't over connect)
- Couple contributions loosely
- Foster Group Forming Networks ($2^N$ scaling)
- Guide data convergence through vocabulary
- Leverage cumulative advantage

Deliver value, create data, deliver value