



⇒ Web 2.0 Tutorial

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Web 2.0 and SOA: Overview



- **Questions to be addressed:**
 - **What is Web 2.0?**
 - **What technologies does Web 2.0 comprise?**
 - **Which Web 2.0 technologies are useful in SOA?**

- **Goal: to clarify what we may mean by saying SOA4All uses Web 2.0 technology**

What is Web 2.0? ←

■ Depends who you ask; but mainly:

1. Read-write Web
2. Programmable Web
3. Democratized Web
4. Mature Web

"Web 2.0 is the same as Web 1.0, but there was a broken Web 1.5 in between."

-- Tim O'Reilly

Read-write Web: User Participation

- **As intended (and created) by TimBL**
 - Remember how everybody had homepages?
- **Best example: Wikipedia**
 - And Flickr, and del.icio.us, and Digg, etc.
 - But also blogs
- **Consumers become producers: "Prosumers"**
 - Participation, contributions by users
 - Users add value (sometimes, they are the value)
- **Collective intelligence**
 - Mining the contributed data

Read-write Web: Technologies

■ Wiki

- Easy, versioned content management

■ Tagging, folksonomies

- Easy creation of metadata

■ Syndication, Atom/RSS, AtomPub, trackback

- Enabling streams of thought, dialogues...

■ Ajax

- Simplifying, enriching the user interface

Programmable Web: Web as a Platform



- **APIs** replace screen scraping
 - Google maps, Flickr, Digg, ...
 - Feeds, syndication
 - Microformats
 - RESTful Web services
 - (SOA 2.0) Software as a Service – SaaS
- **Mashups, aggregation**
 - Yahoo pipes
- **Human computation**
 - Amazon Mechanical Turk, also games

Programmable Web: Technologies



- **Atom/RSS, AtomPub**
 - Feeds, publishing, syndication
- **XML, JSON, Microformats**
 - Data exchange
- **HTTP**
 - The basis

- **Ajax (in human UI) leads to APIs**
 - Because Ajax UI is a machine client

Democratized Web: User Power

- **Everyone can take part in production and selection of ideas**
 - Lessening of centralized (editorial) control
 - Wikipedia – encyclopedia by amateurs
 - Blogs – news by amateurs
- **The long tail**
 - Reaching out to the edges, not just the center
 - Sales (Amazon), advertisement (AdSense)
- **Human computation**
 - Users finishing tasks for money or entertainment

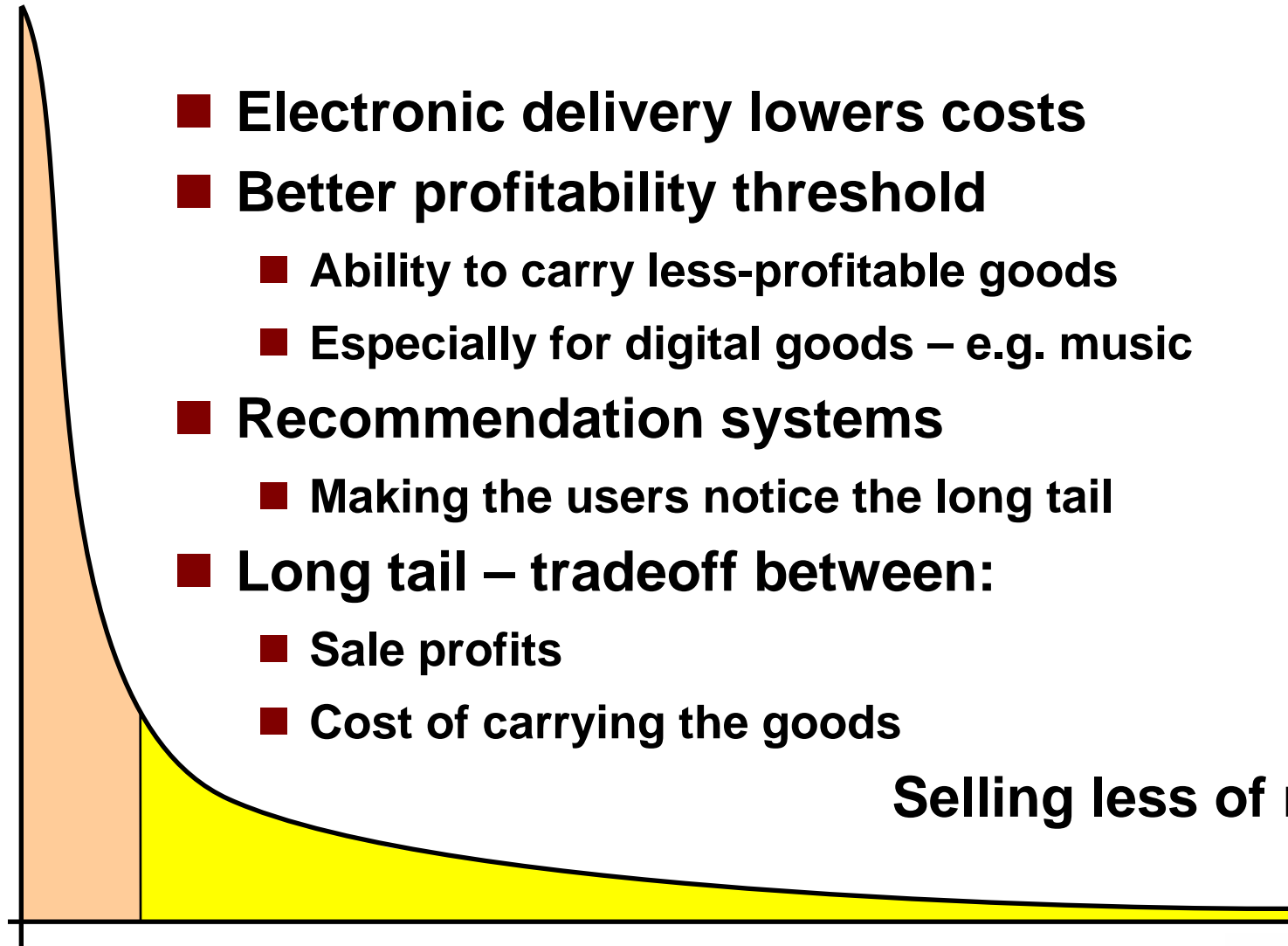
Democratized Web: Dealing with it

- **Coping with the sea of information**
 - **Selecting nuggets of gold from the rivers of mud**

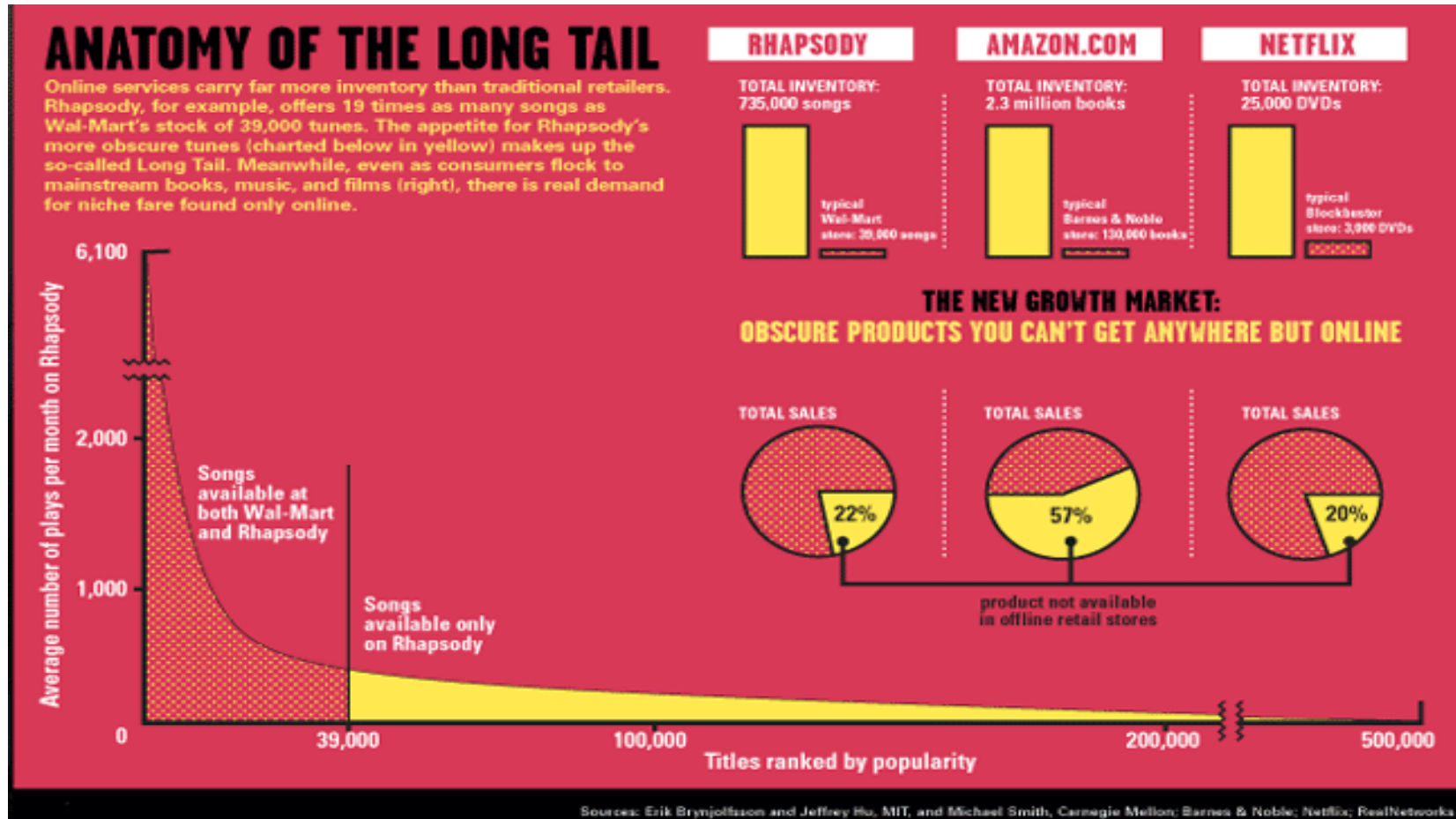
- **Feeds, aggregation**
 - **Follow many sources**

- **Online shared bookmarks, ratings**
 - **Voting: the "audience" now decides what's important**

Democratized Web: the Long Tail



Anatomy of the Long Tail ←



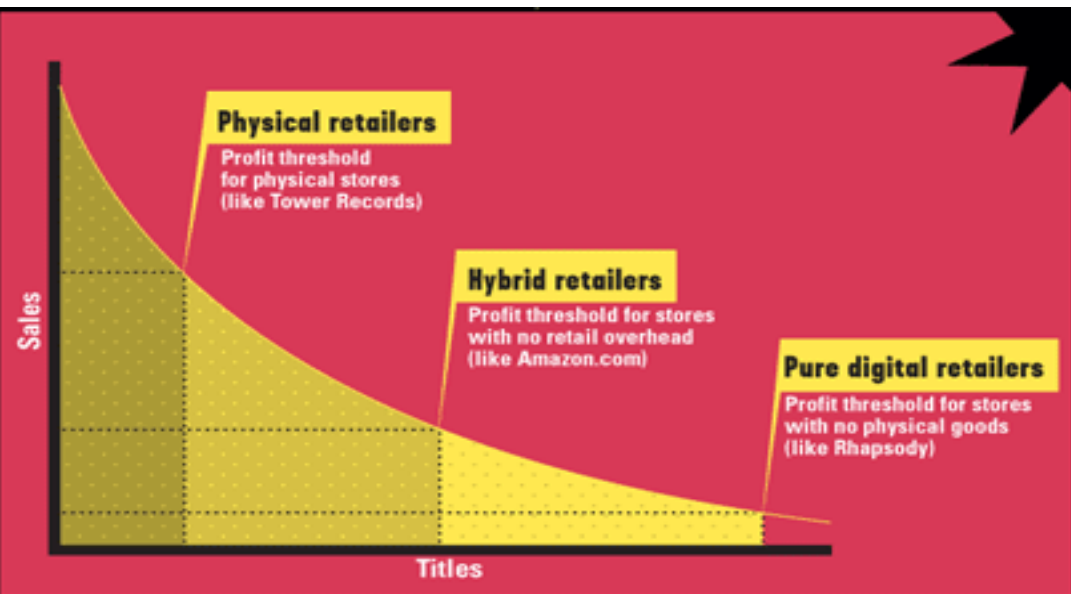
Picture from <http://www.wired.com/wired/archive/12.10/tail.html>

Lowering Profitability Threshold ←

THE BIT PLAYER ADVANTAGE

Beyond bricks and mortar there are two main retail models – one that gets halfway down the Long Tail and another that goes all the way. The first is the familiar hybrid model of Amazon and Netflix, companies that sell physical goods online. Digital catalogs allow them to offer unlimited selection along with search, reviews, and recommendations, while the cost savings of massive warehouses and no walk-in customers greatly expands the number of products they can sell profitably.

Pushing this even further are pure digital services, such as iTunes, which offer the additional savings of delivering their digital goods online at virtually no marginal cost. Since an extra database entry and a few megabytes of storage on a server cost effectively nothing, these retailers have no economic reason not to carry *everything* available.



Picture from <http://www.wired.com/wired/archive/12.10/tail.html>

Getting into the long tail ←



Picture from <http://www.wired.com/wired/archive/12.10/tail.html>

Democratized Web: Technologies

- Wikis
- Feeds: Atom/RSS
- Recommendation & rating systems

Mature Web: Things Really Work Now

- **Easy-to-use, rich user interfaces**
 - **AJAX = "Javascript now works"**
- **Aggregation, ranking**
 - **For dealing with the data**
- **Collective intelligence**
 - **All that data must have its uses**
- **Human computation**
 - **Even the surfers may be useful**
- **Web 2.0 is what the Web was meant to be; the inherent nature of the Web is showing**



- **Programmable Web has services**
- **We need semantics**
 - **Emergent semantics**
 - Folksonomies, rating, linking
 - **Explicit semantics**
 - Microformats, other descriptions?
 - **Human computation**
 - Can "employ" people to generate semantics
- **Semantics needs to be used**
 - **Rich user interfaces**

Web 2.0 and SOA: Conclusions

- Web 2.0 is many things
- Harnessing **and** empowering users
- Making the Web **read-write**
- Rich UI leads to reusable **APIs**

Web 2.0 technologies can be used as a means to generate and access the semantic service layer.

References

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Thank You! ←

SOA + ALL

Semantics
Web2.0
Web Services
Context

www.soa4all.eu