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Designing Entanglement: Holistic approach to a new pattern of complexity in digital service design

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Designing Service Entanglement

: holistic approach to new pattern of complexity in service design

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Relating Systems Thinking & Design 2013, Oslo, Norway
Designing Service Entanglement: holistic approach to new pattern of complexity in service design

RSD3 2014? RSD2 2013

prepared for
Relating Systems Thinking & Design 2013, Oslo, Norway
a journey of a thousand miles begins with a single step  [Lao-tzu]
Emergence of Service Entanglement research: self-reflection

UPMC Technology Development Center  health information visualization service
Carnegie Mellon University  interaction design graduate student
Service Design teaching  at school of business & dept. of techno-art
Ridibooks (e-book service startup)  e-book reading & gifting experience
Samsung Electronics  appstore & cloud services for mobile devices x multi-platforms
Mobile App Startup  cartoon viewer + content distribution/advertising patent
Apple  retail experience + roadmap
Non profit organization  north korean teenage defectors’ self-reliance
Bain & Company  m&a (post-merger integration) strategy
18th Medical Command, U.S. Army  medical sergeant (surgery assistance, readiness management)
European Union Chamber of Commerce  investment matchmaking
Team,

The launch of MobileMe was not our finest hour. There are several things we could have done better:

- MobileMe was simply not up to Apple’s standards – it clearly needed more time and testing.
- Rather than launch MobileMe as a monolithic service, we could have launched over-the-air syncing with Phone, to begin with, followed by the web applications one by one – Mail first, followed 30 days later (if things went well with Mail) by Calendar, then 30 days later by Contacts.
- It was a mistake to launch MobileMe at the same time as iPhone 3G, iPhone 2.0 software and the App Store. We all had more than enough to do, and MobileMe could have been delayed without consequence.

We are taking many steps to learn from this experience so that we can grow MobileMe into a service that our customers will love. One step that I can share with you today is that the MobileMe team will now report to Eddy Cue, who will lead all of our Internet services – iTunes, the App Store and, starting today, MobileMe. Eddy’s new title will be Vice President, Internet Services and he will now report directly to me.

The MobileMe launch clearly demonstrates that we have more to learn about Internet services. And learn we will. The vision of MobileMe is both exciting and ambitious, and we will press on to make it a service we are all proud of by the end of this year.

Steve
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Research on Service Entanglement

- product orchestration of \{product, system and services\}
- business experience on service

VP internet services --- directly report to Jobs

“we have more to learn about internet services. And learn we will”

---

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Steve

*this email can be searched at public*
**Service Entanglement**

*Service Entanglement* results from *multiple interlinked service systems.* These can be both physical and digital.

- Entanglement encompasses *people, products, services and systems.*

- Entangled services are *codependent.*

- Entangled services *collectively shape an experience* and *create value* for *people and systems.*

- *Not all values and experiences* from Service Entanglement *are positive.*
  
  : *because the services are often superposed and not designed to be a single system*
Service Entanglement results from multiple interlinked service systems. These can be both physical and digital.

- Entanglement encompasses people, products, services and systems.
- Entangled services are codependent.
- Entangled services collectively shape an experience and create value for people and systems.
- Not all values and experiences from Service Entanglement are positive.

: because the services are often superposed and not designed to be a single system

becoming more conscious of qualities and patterns of relationships among service systems
Digital services are pervasive in people’s life more than ever. Networks among digital services have become not only increased by its number, but denser and stickier in terms of quality.

Digital services are more than just networked, but entangled.
Facebook platform supports more than 42 million pages and 9 million apps

There are now more than 42 million Facebook pages and 9 million apps and websites integrated with Facebook, according to a recent amendment to the social network’s filing for an initial public offering.

The number of pages on Facebook with 10 or more Likes has increased by 5 million since Dec. 31, 2011, and the number of apps and websites that integrate Facebook are up by 2 million since that date. These new totals show that Facebook’s platform continues to grow in ways beyond new users. It also shows just how much is competing for users’ attention these days.

Facebook did not provide a category breakdown of the 42 million pages on Facebook. However, in a letter to prospective investors, Facebook CEO Mark Zuckerberg shared that more than 4 million businesses have pages on the site. Other pages on the social network — including many of the most popular ones — are pages for popular figures, movies and sports teams. A large proportion of pages are also likely to be fan-generated community pages. Unclaimed locations also account for some of these pages, although Facebook has been working to eliminate duplicates.

The number of apps and websites connected to Facebook is likely to quickly grow past 9 million. With Open Graph integration proving to be a large source of traffic for third-party apps and websites, we can expect many more blogs and media sites, as well as mobile games and other apps to implement aspects of the platform.

Along with stats about pages and apps, Facebook provided other updated figures for photo uploads, interactions and friend connections in its filing this week. Between Jan. 1 and March 31, there were more than 300 million photos uploaded to the site each day — up from 250 million per day in Q4 2011. Users also generated an average 3.2 billion Likes and comments each day in the first quarter of 2012 — up from 2.7 billion per day in Q4 2011. And Facebook now has more than 125 billion friend connections between its 901 million monthly active users.

Facebook Bug Pretty Much Took Down the Entire Internet

If you thought the Internet freaked out for a little bit and every site you went to was down, you’re not alone. Major websites were down: CNN, Huffington Post, ESPN, Gawker, The Washington Post, BuzzFeed, etc. were all broken. Why? Because of a glitch with Facebook.

Developers at Gawker said that the glitch
Service Entanglement for interaction design

how interaction designers can more contribute to designing a successful system with interdependency on other systems?
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Facebook Connect

Fitbit Apps
Facebook Connect

multiple services form an experience

Fitbit Apps

people’s behavioral data and metadata become direct or indirect financial assets
About IFTTT

What is IFTTT? IFTTT is a service that lets you create powerful connections with one simple statement:

Recipe

if this then that

Trigger  Action

IFTTT is pronounced like “gift” without the “g.”

Channels

Channels are the basic building blocks of IFTTT. Each Channel has its own Triggers and Actions. Some example Channels are:

Facebook  Evernote  Email  Weather  Linkedin
IFTTT is a service that lets you create simple statements: if this then that. Multiple services form an experience. Channels are the basic building blocks of IFTTT, allowing users to create their own Triggers and Actions. Some example channels include Facebook, Eventbrite, Weather, and LinkedIn. Recipes are user-created workflows that automate tasks between different services. Ratings on trustfulness contribute to indirect financial assets.
service provides all-in-one channel experience* through sub-service systems

all in one touchpoint*

service aims to generate leverage* related to sub-service systems

+ leverage towards media partners*

all in one webpage*

no leverage generated towards Google family services*
iTunes in Starbucks

Square
organized service delivery* forms an experience

customer = Starbucks visitors

seamless service migration*

customer = cafe owners

light-weight operation*

entangled services share revenue and customer data
Exploring typology of Services Entanglements: systems perspective

– **how entangled service systems get codependent each other?**

  what are the leading and supporting constituents of co-dependent relationship?
  how co-produced value is distributed across the constituents?
  density of relationships? [single, handful, plenty of]
  openness of connections? [unique, limited, unlimited, inscrutable]

– **how entangled service systems’ experience are orchestrated?**

  who are the stakeholders of designing the intersections of systems?
  how are project and task ownerships distributed across the stakeholders?
  what are the barriers of interfacing, layering and polishing systems intersection?

: *from unexplored mess towards organized complexity*
Why Service Entanglement is helpful: thinking

model by Hugh Dubberly (2013)

Product Service Ecology (Jodi Forlizzi, 2013)
Why Service Entanglement is helpful: practice

Services now create experience and value in more complex way than a single product or service system does.

Current Interaction and Service Design practice and research do not really focus at multiple service/business entities interrelations.
What Service Entanglement aims to

1. **Service Entanglement helps concrete understanding on Service Ecology**: as a world-view

2. **Service Entanglement provides a point of view to assess current landscape of service ecology to refine more actionable insights**: as an approach for better problem solving*

3. **Service Entanglement can inspire designers to think of meaningful codependencies in new service creation and development**: as an approach for problem seeking + perturbation*

Discussions

**Systemic perspective of Interaction Design**
- How Interaction Design researches and practices can tackle problems results from Service Entanglement?
- How Interaction Design researches and practices can contribute to creating a fruitful Service Entanglement?

**Systemic perspective of Service Design**
- What are the missing links in current Service Design researches and practices?
- How Service Design researches and practices can contribute to creating a fruitful Service Entanglement?

**Design perspective of Service Business Strategy**
- How the concept of Service Entanglement can help formulating service business strategies creating meaningful co-dependency?
- How the concept of Service Entanglement can help formulating sustainable service business model?

**Design perspective of Service Management, Marketing and Evolution**
- How the concept of Service Entanglement can help managing and marketing a service system?
- How the concept of Service Entanglement can help making an evolution of a service system more effectively and efficiently?

**Service perspective of understanding Design** *(from The Design Way, 2nd edition)*
- How the study of Service Entanglement can advance discussion of Service Element in Design concept?
- If designers are not totally in service relationship, what would it be the proper description of it? (ex. designers creating an application service using open APIs from a certain system)
Closing metaphor (1) Intersection Design at Urban Planning

Intersection Design Elements

INTERSECTION WITHOUT CORNER BULBS
- Center Turn Lane
- Crosswalk Treatment
- Sidewalk Treatment
- Street Trees with Grates

Bench
Street Tree in Wall
Pedestrian Lighting
Trash/Recycling
Sound Concrete

INTERSECTION WITH CORNER BULBS AND MEDIAN
- Median
- Sidewalk Treatment
- Center Turn Lane
- Optional Paver

Bicycle Rack
Curb Extension
Planting Area/Stormwater Treatment

Radius of conventional curb return radius to accommodate large design vehicle

http://www.ite.org/css/online/DWUT10.html
Closing metaphor (2) Entanglement in Quantum Physics (and human relationships)

Quantum entanglement is kind of romantic. Two particles with an entangled fate, no matter the distance between them...

Yet the mystery of their fate is necessary. When you determine the value of one of them, the wavefunction collapses and entanglement ends.

Do you love me?

Is there a right answer to this question?

http://www.madprimo.org/article_images/20070928_entanglement.png
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