Introduction to Reputation and Reputation Systems

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2

Reputation?

the common or general estimate of a person with respect to character or other qualities

The opinion that people have about what somebody/something is like, based on what has happened in the past

Where are you going to do your graduate studies?

I'm going to Stanford. I just got accepted 2 days ago.

A conversation…

Where are you going to do your graduate studies?

I'm going to Stanford. I just got accepted 2 days ago.

Why Stanford? You could go to Yale or Harvard.

Stanford has the best Design Thinking program. They were the 1st ones to start the discipline
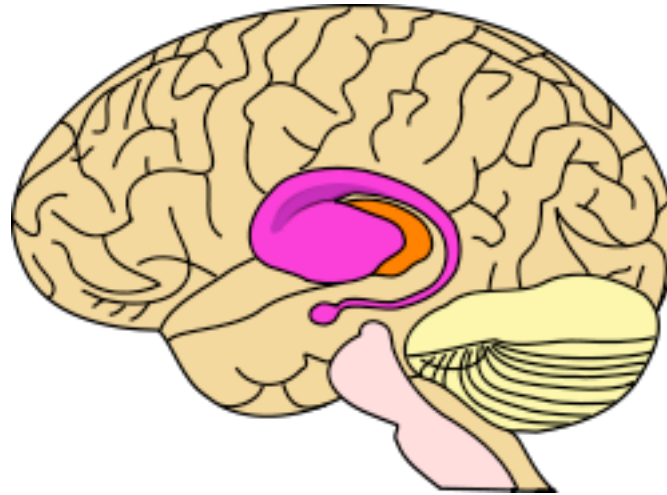
4

Trust

Trust

local experiences + feedback

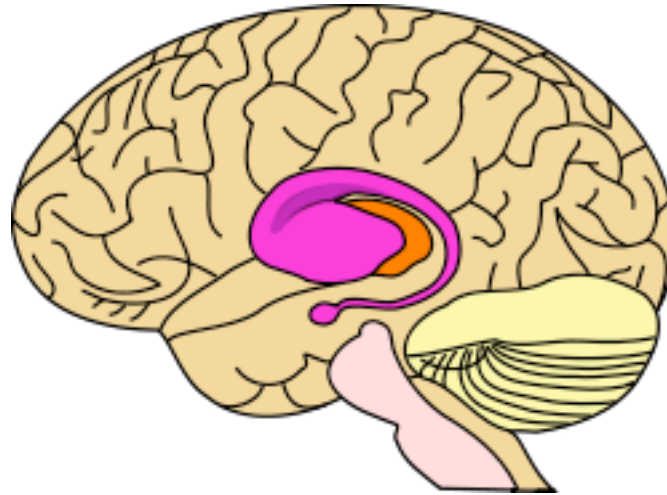# How does it work in our brains

humans process social values in the **striatum** (strī-ā'təm)

* According to National Institute of Mental Health in Bethesda
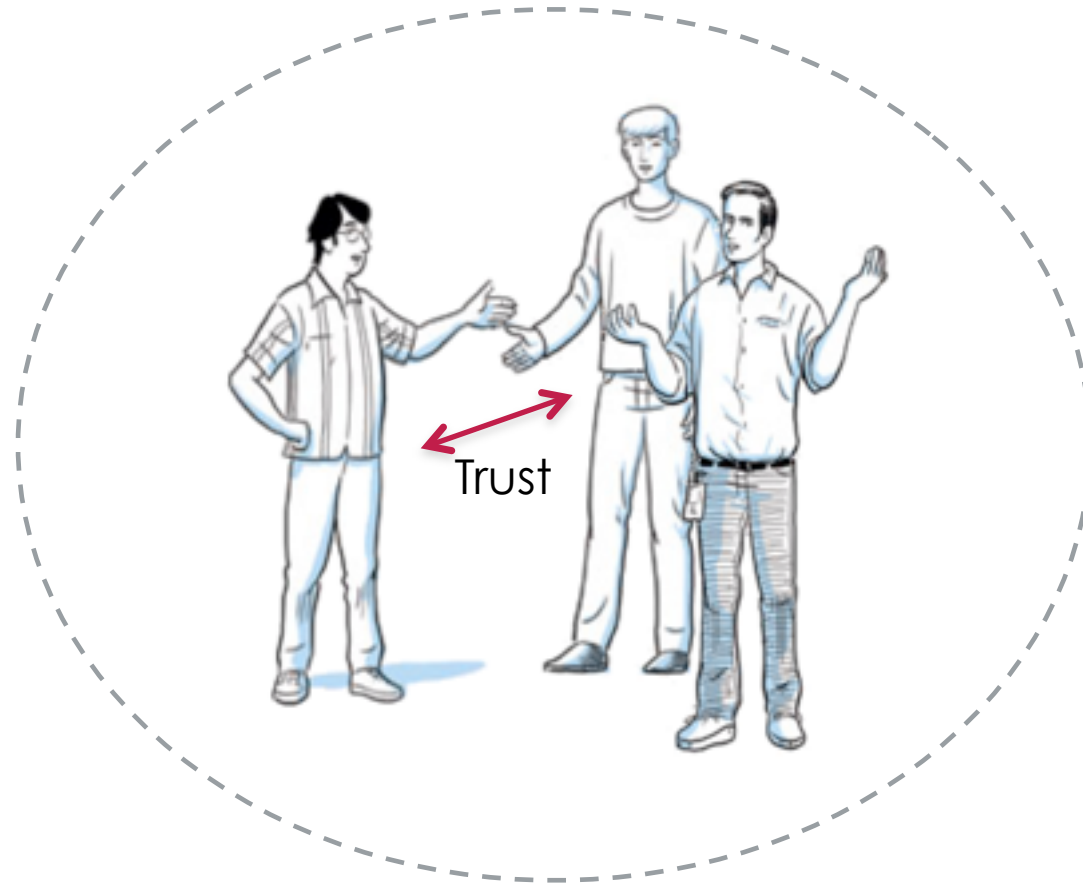(NIMH) and Japan's National Institute for Physiological Sciences
(NIPS)

humans process social values in the **striatum** (strī-ā'təm)
Good Reputation as a *reward*

* According to National Institute of Mental Health in Bethesda (NIMH) and Japan's National Institute for Physiological Sciences (NIPS)
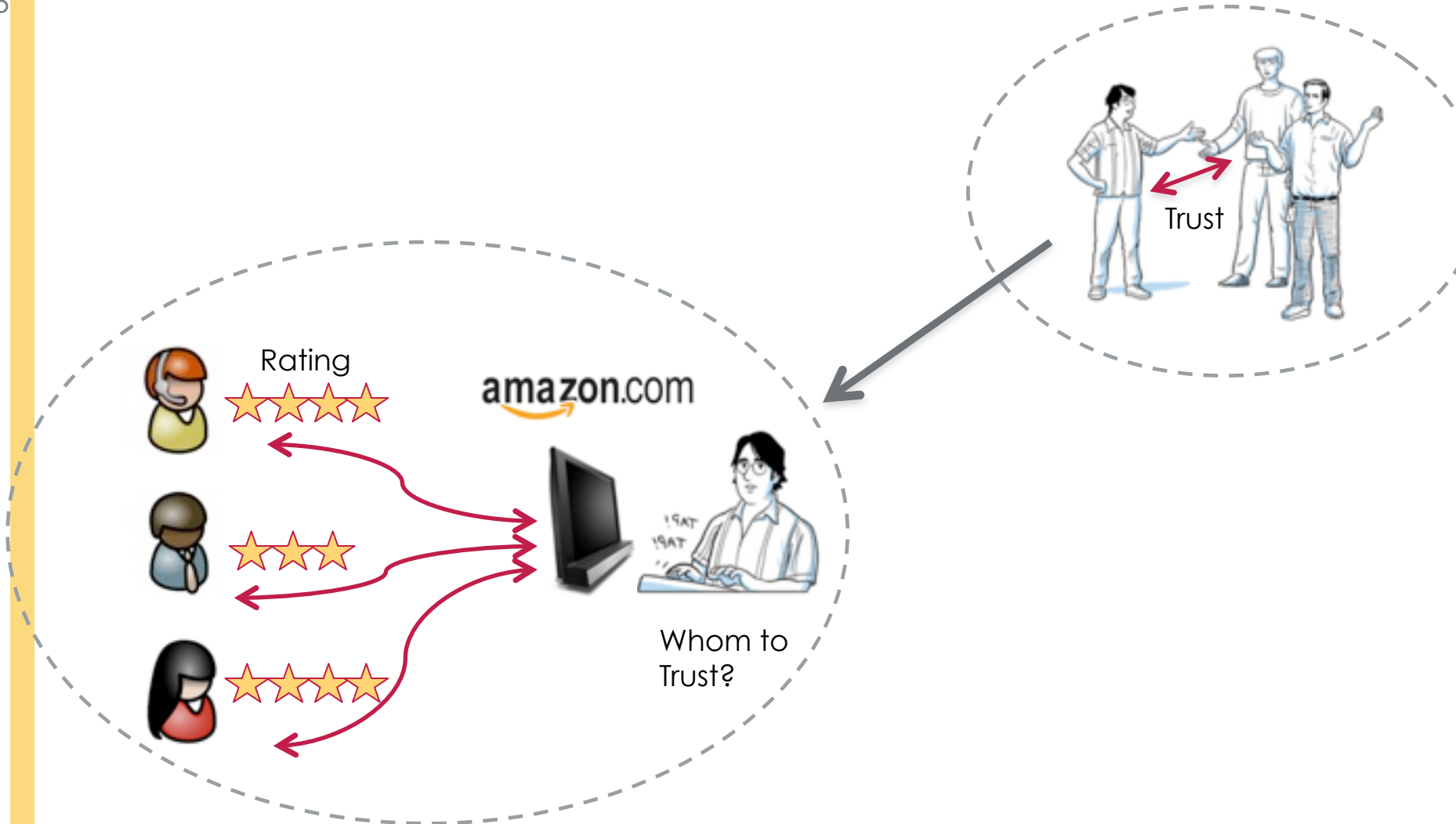
6

Trust

Trust

Rating

amazon.com

Whom to Trust?

Where do we see it?

Online Reputation Systems

E-Markets

amazon.com

ebaY

Social/Entertainment

last.fm

Opinions & Activities

BizRate

delicious social bookmarking

Epinions.com

News

Slashdot

Kuro5hin

Business/Jobs network

AllExperts

Linked in

ryze Business Networking

Proliferation of Virtual Communities

2,268 billion Internet users in 2011*
32% of the world population
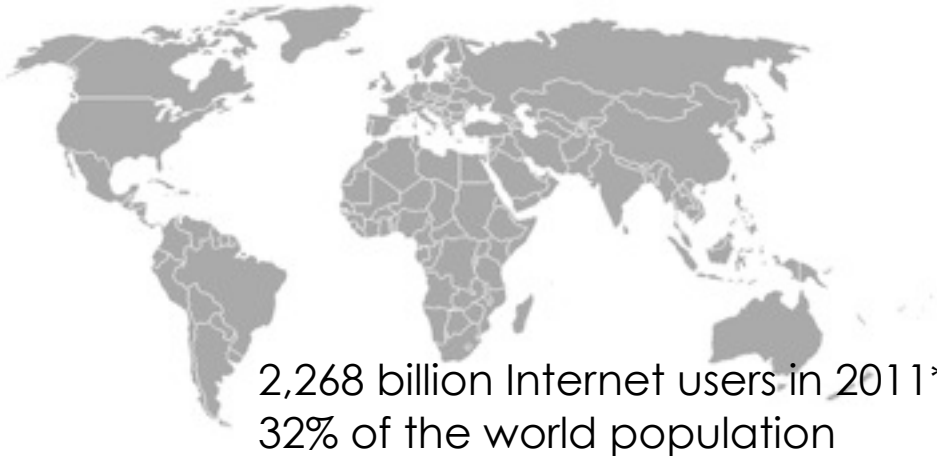
- **Trust Management**

    ☐ Unrelated parties can establish sufficient trust to interact

    ☐ Using collection of evidence and contracts

    ☐ **Reputation Mechanisms**

        ☐ Establishing trust and encouraging trustworthy behavior

        ☐ Lowering the risk of online interactions

* According to the Internet World Stat

Reputation and Trust

9

- **Reputation-based approach**

    □ reputation as a base for trust

    □ mostly for unstructured communities

    □ based on community collaboration

    □ closed domains: each has its own method to query, store, aggregate, infer, interpret and represent reputation

- **Reputation**
  expectation about an agent behavior based on information or observations

- **Soft computational approach**
    □ local experiences
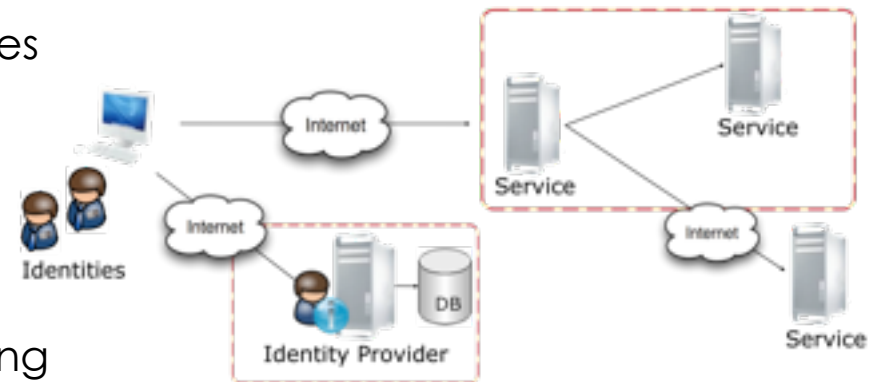   □ feedback (expressed opinion)

Other Reputation Systems

- **Peer-to-peer systems**

  - Sharing movies, music, ….

  - Rings any bell? Not judging here!

- **Web Services**

  - Service consumer rates services

  - Services rate services

  - Monitoring and analysis

  - Evaluating service providers
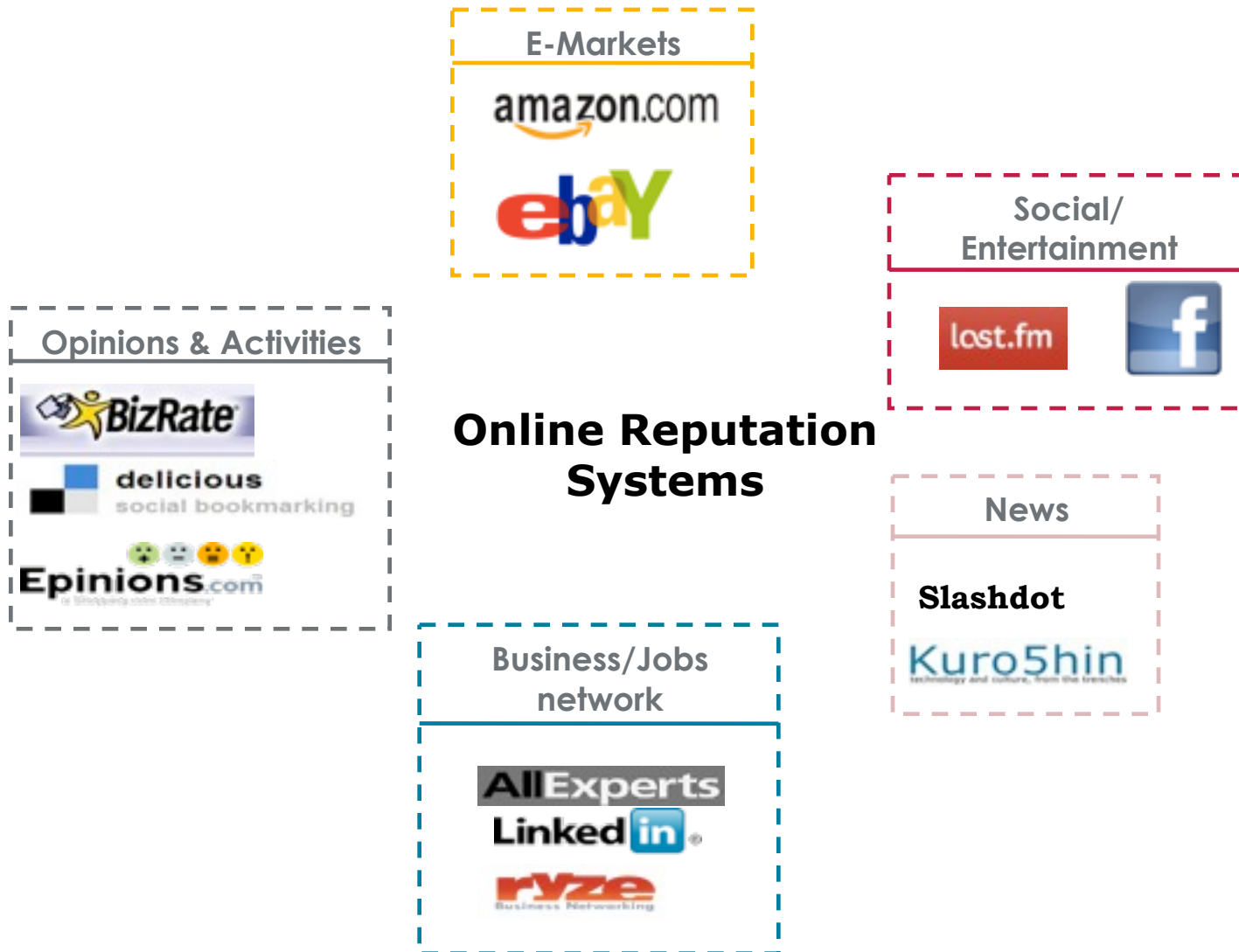
  - And naturally Cloud Computing

- **Indirect**

  - Graph Reputation Systems: PageRank

Let's talk about what we know

E-Markets

amazon.com

ebaY

Social/ Entertainment

last.fm

f

Opinions & Activities

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Linked in.

ryze
Business Networking

Alice says, "Gucci is expensive"

Source   Target   Statement

Alice says, "Gucci is expensive"

Source   Target   Statement

Aktuelle Bewertungen (letzte 12 Monate)

	1 Monat	6 Monate	12 Monate
Positiv	9	29	102
Neutral	0	0	0
Negativ	0	0	0

Reputation Statements

Alice says, "Gucci is expensive"

Source   Target   Statement

	Favorites ★	Photo
	Votes 'Helpful' 👍	Review
	Diggs	Article
	"Great menu! Quick service, too."	Restaurant
	★★★★☆	Movie

Aktuelle Bewertungen (letzte 12 Monate)

	1 Monat	6 Monate	12 M
Positiv	9	29	
Neutral	0	0	
Negativ	0	0	0

* From Web Reputation Book

Alice says, "Gucci is expensive"

Source   Target   Statement

A System
gathers and
calculate

Someone is
giving opinion

| | Favorites ★ | Photo |

| | Votes 'Helpful' 👍 | Review |

Aktuelle Bewertungen (letzte 12 Monate)

| | 1 Monat | 6 Monate | 12 M |
	Diggs	Article
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| | "Great menu! Quick service, too." | Restaurant |

| | ★★★★☆ | Movie |

* From Web Reputation Book

13
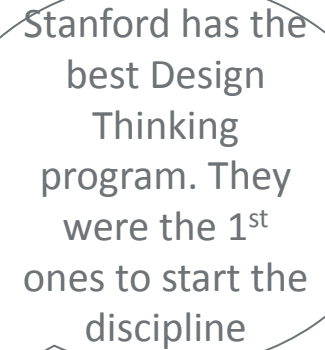
Are reputation statements absolute?

Are reputation statements absolute?

- ☐ Good education

- ☐ Good in Design Thinking

- ☐ ....

- ☐ Good doctor, bad driver

- ☐ Good accountant, bad investor/broker

Stanford has the best Design Thinking program. They were the 1st ones to start the discipline

13

Are reputation statements absolute?

- Good education

- Good in Design Thinking

- ….

- Good doctor, bad driver
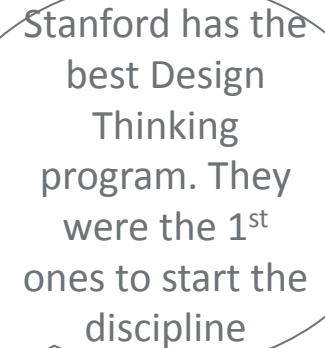
- Good accountant, bad investor/broker

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No they are not, they are relevant in a "Context"

14

- **Reputation Model**

  all of the reputation statements, events, and processes for a particular context

- **Reputation Context**
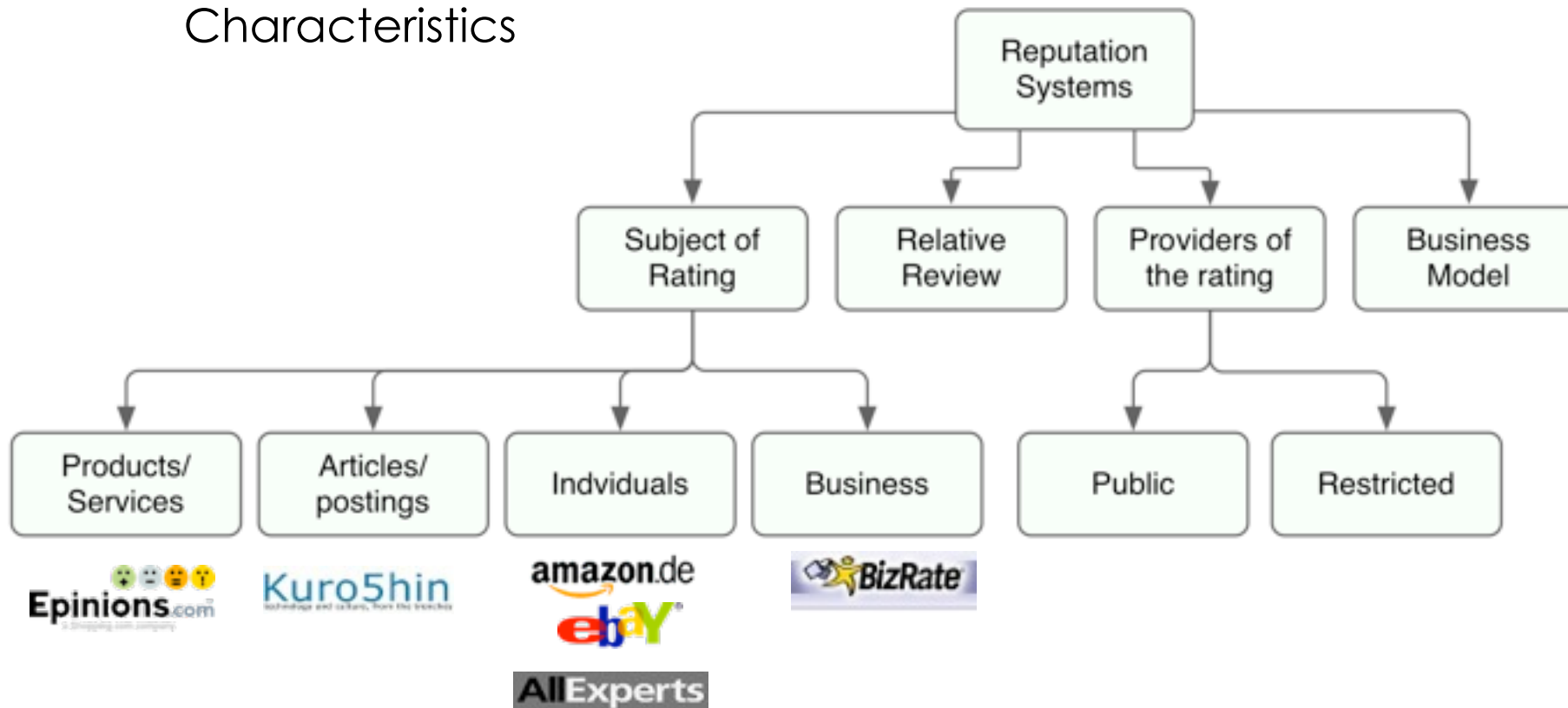
  the relevant category for a specific reputation

- **Reputation Target**

  users, movies, products, blog posts, videos, tags, companies, and IP addresses
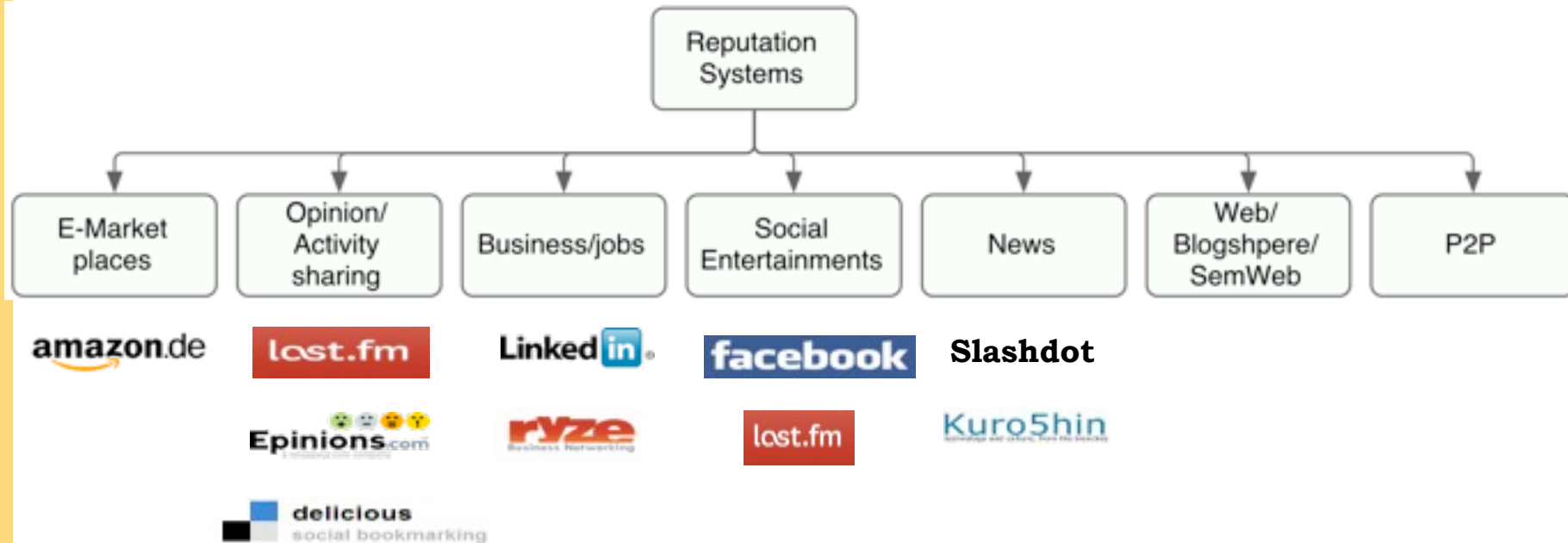
Categorize them?

Characteristics

Categorize them?

Features and
properties

# What we will learn later…

It is not only rating…

- **Favorites and Flags**

    □ Vote to Promote (*Promoting in general: Digg, Reddit, and Yahoo! Buzz*)

    □ Favorites (*counting how many times a user bookmark a content item*)

    □ Report Abuse

- **This-or-That Voting**
  (*vote on the usefulness, accuracy, or appeal of something within a bounded set of possibilities*)

- **Ratings**
  (*explicit opinion about the quality of something: stars, bars, HotOrNot or a 10-p scale*)

- **Reviews**

- **Points**

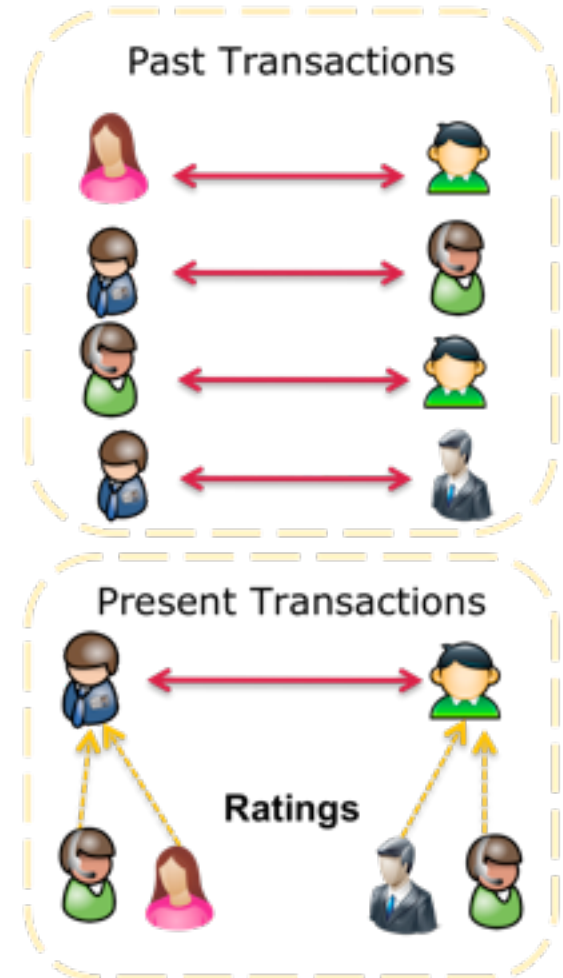- **Karma** (*usually create incentives for user behavior: participation and quality*)

Centralized
Server / Clients
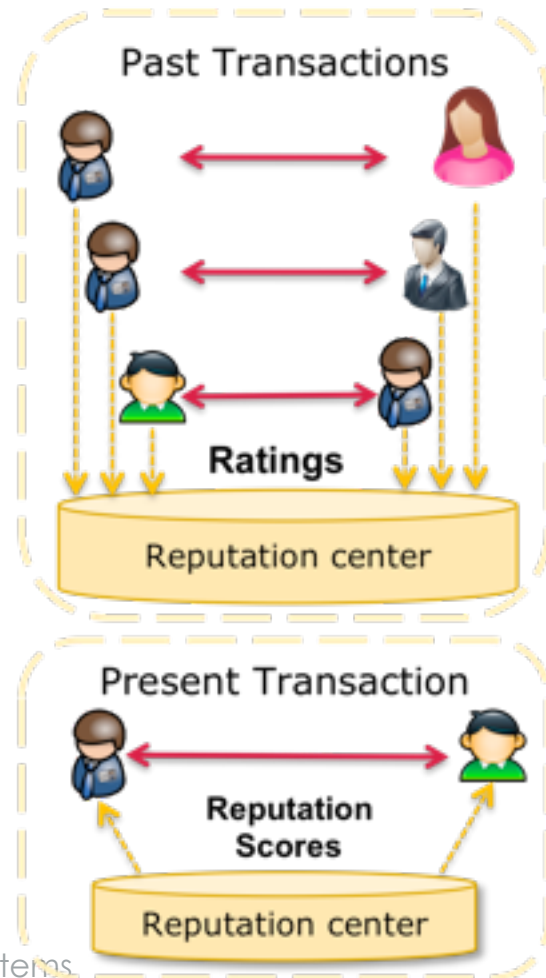
Distributed
Servants, e.g. P2P

Reputation Topology

What I think

What the rest think

I know the guy

I heard about him
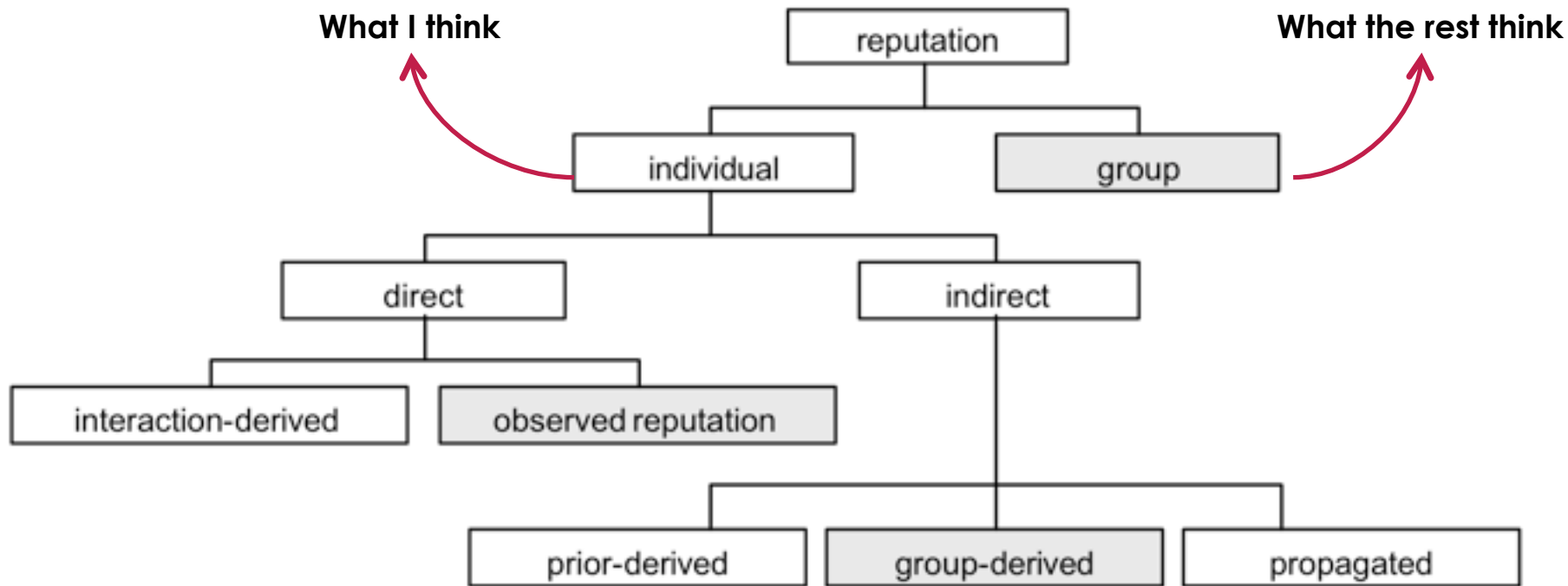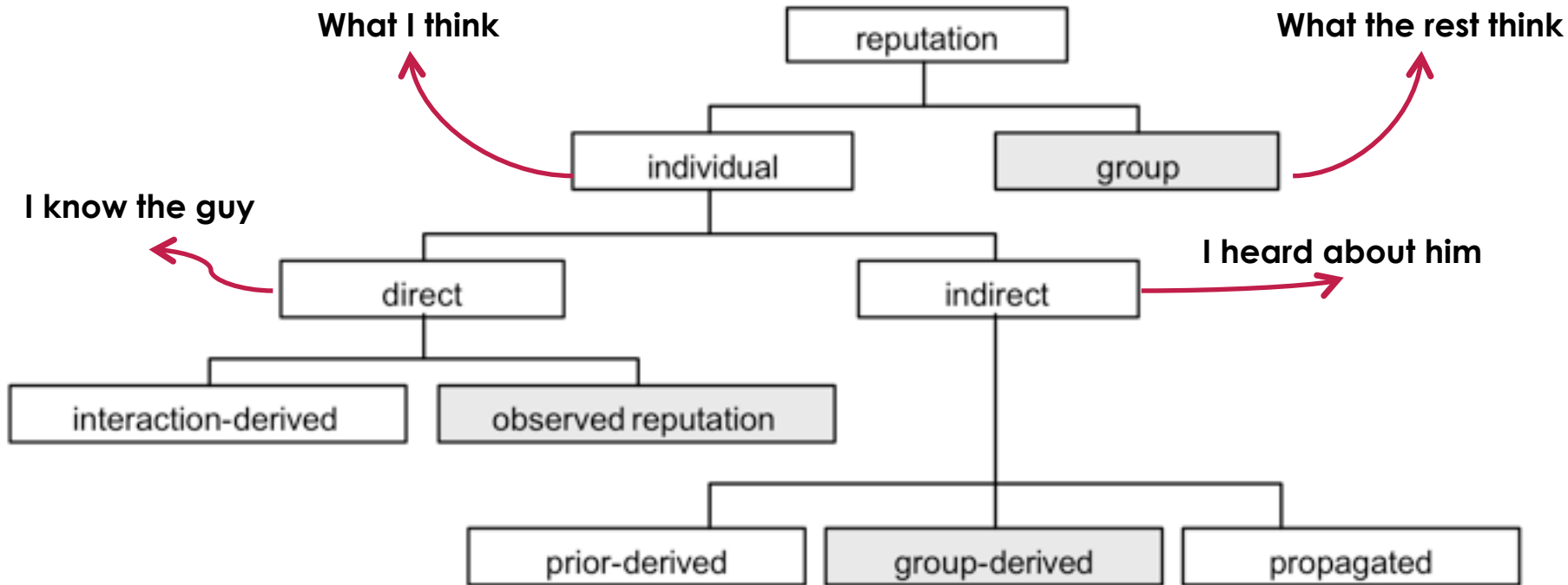
…and along the way

- Implicit and explicit rating

- How to calculate the represented reputation

- Content control patterns

- Community nature

- Reputation in service-oriented architecture

- ….

week	date	
1	25.10.2012	Introduction to Reputation and Reputation System
2	1.11.2012	More into Reputation Systems
3	8.11.2012	Research and team assignments 1: Compare and Contrast
4	15.11.2012	Office hours
5	22.11.2012	Office hours
6	29.11.2012	Presentations of research assignment 1
7	6.12.2012	Research and team assignments 2: Reputation Design
8	13-20.12.2012	Office hours
9	10.1.2013	Presentations of research assignment 2
10	17.1.2013	Discussion of Papers Topics
11	24.1.2013	Office hours
12	31.1.2013	Paper Presentations
13	7.1.2013	Paper Presentations

As the course progresses, this schedule will be finalized and reflect the course contents

1	25.10.2012	Introduction to Reputation and Reputation System
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23

- **Assignments**

  □ Select a topic

  □ Team up with one other student

  □ Present in front of and discuss with the rest of us

50%

- **Paper and/or project (depends on the numbers)**

  □ Select a topic

  □ Team up with one other student (paper)/ with 3 others (projects)

  □ Present in front of and discuss with the rest of us

  □ A short abstract must be submitted and approved prior to writing the paper

50%

Have a
question?
Contact me!

Rehab Alnemr
(rehab.alnemr@hpi.uni-potsdam.de)