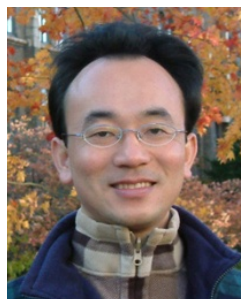# Social Media and Social Computing
(社群媒體與社群運算)

時間：2014/6/25 (三) 14：00～17：00
地點：精誠資訊股份有限公司R0111會議室
(地址：台北市內湖區瑞光路318號1樓)

Min-Yuh Day
戴敏育
Assistant Professor
專任助理教授
Dept. of Information Management, **Tamkang University**
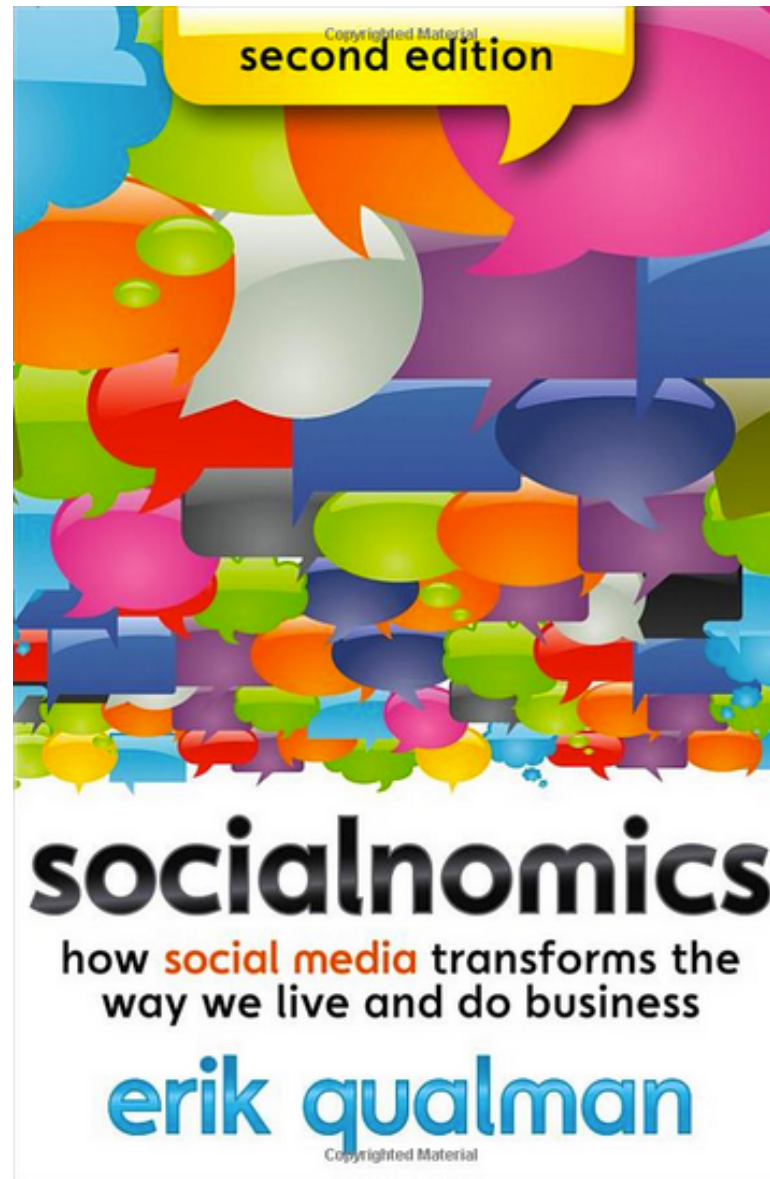**淡江大學 資訊管理學系**

http://mail.tku.edu.tw/myday/

2014-06-25

消費者交易行為分析
(Consumer Facing Transaction)

Socialnomics

Outline

1. 社群網路商業模式
   (Social Media Business Model)
2. 社群網路趨勢與應用
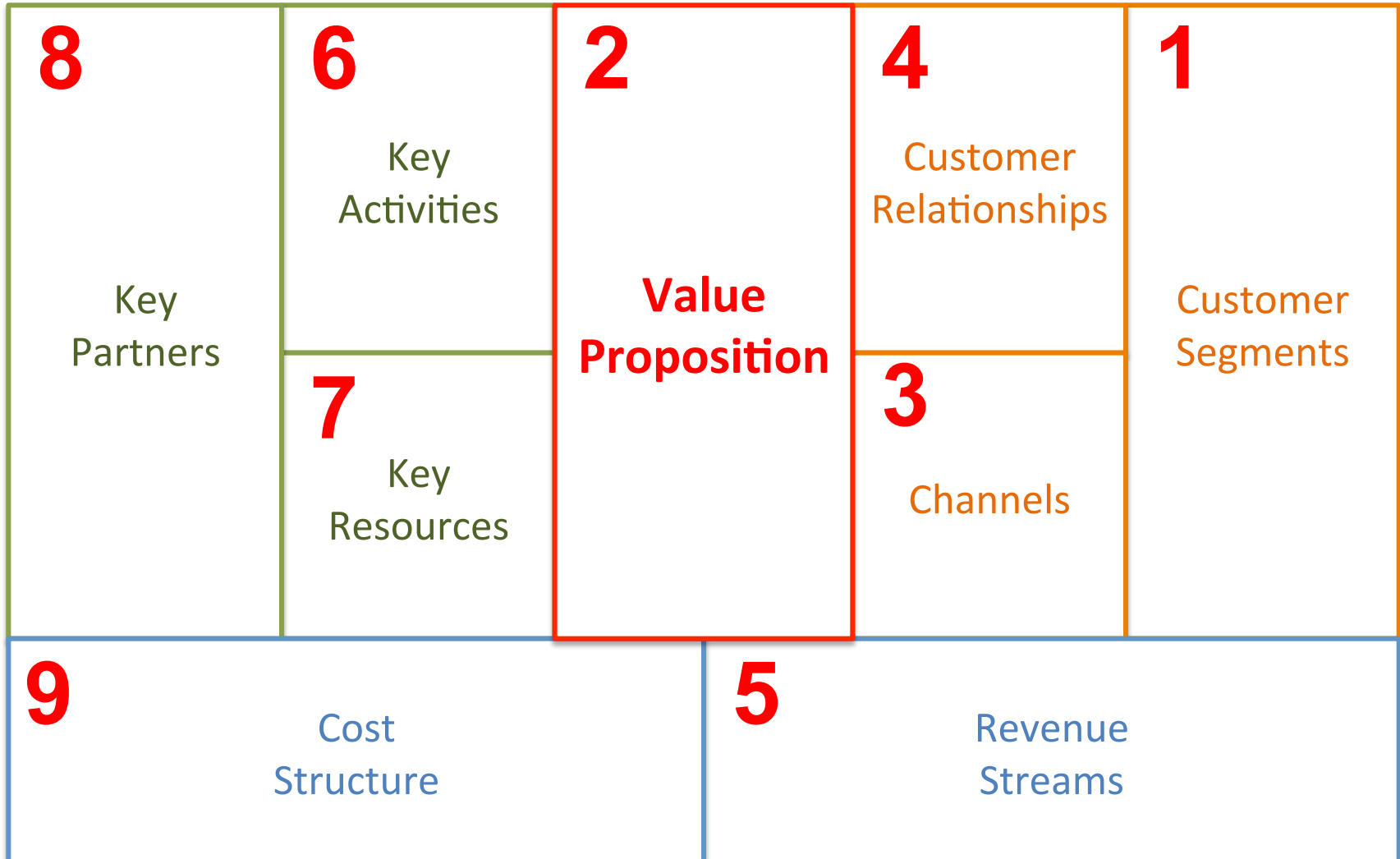   (Social Media Trends and Applications)
3. 社群口碑趨勢分析
   (Word-of-Mouth in Social Media: Trends Analytics)

Understanding Business Model

- **Business Model**
- Revenue Model

- Business Strategy
- Business Strategy and Information System Alignment

Value

Business Model

8	6	2	4	1
Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
	7 Key Resources		3 Channels	

9	5
Cost Structure	Revenue Streams

Definition of Business Model

A **business model** describes the **rationale** of how an **organization** **creates**, **delivers**, and **captures** **value**.

E-commerce
Business Models

1. Portal
2. E-tailer
3. Content Provider
4. Transaction Broker
5. Market Creator
6. Service Provider
7. Community Provider

E-commerce
Revenue Models

1. Advertising

2. Sales

3. Subscription
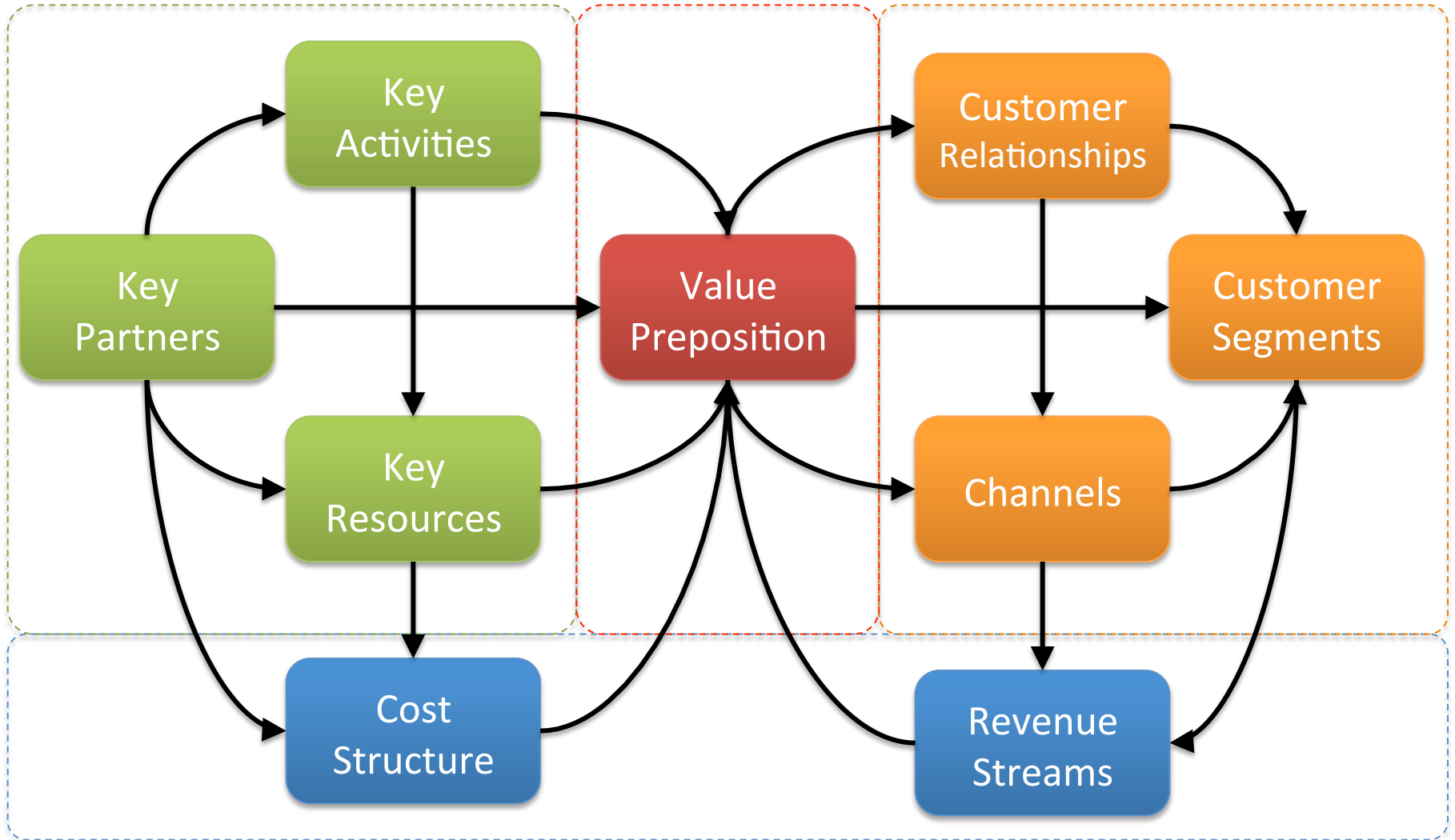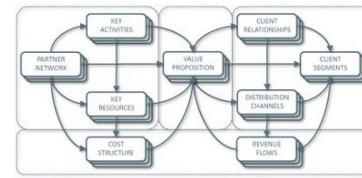
4. Free/Freemium

5. Transaction Fee

6. Affiliate

Types of E-commerce

1. Business-to-consumer (B2C)

2. Business-to-business (B2B)

3. Consumer-to-consumer (C2C)

4. Mobile commerce (m-commerce)
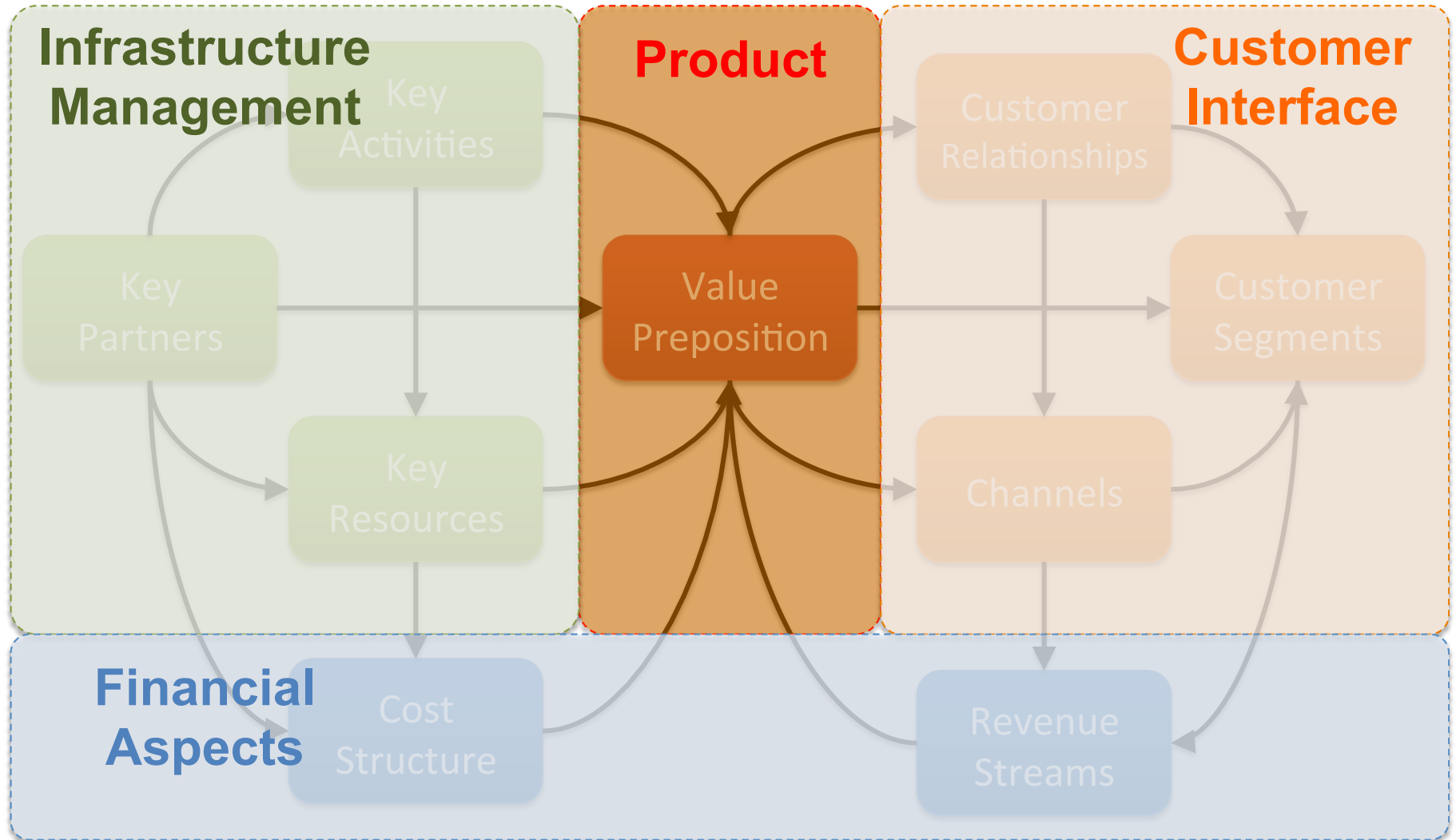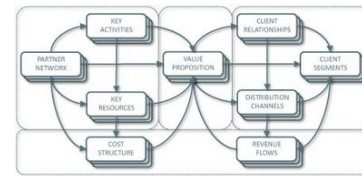
Definition of Business Model

A **business model** describes the **rationale** of how an **organization** **creates**, **delivers**, and **captures** **value**.

Business Model Canvas

13

Business Model Canvas

Infrastructure Management | Product | Customer Interface

- Key Activities
- Key Partners
- Key Resources
- Value Preposition
- Customer Relationships
- Customer Segments
- Channels

Financial Aspects
- Cost Structure
- Revenue Streams

Business Model Canvas Explained

The 9 Building Blocks of Business Model

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
8	6	2	4	1
	Key Resources		Channels	
	7		3	

Cost Structure	Revenue Streams
9	5
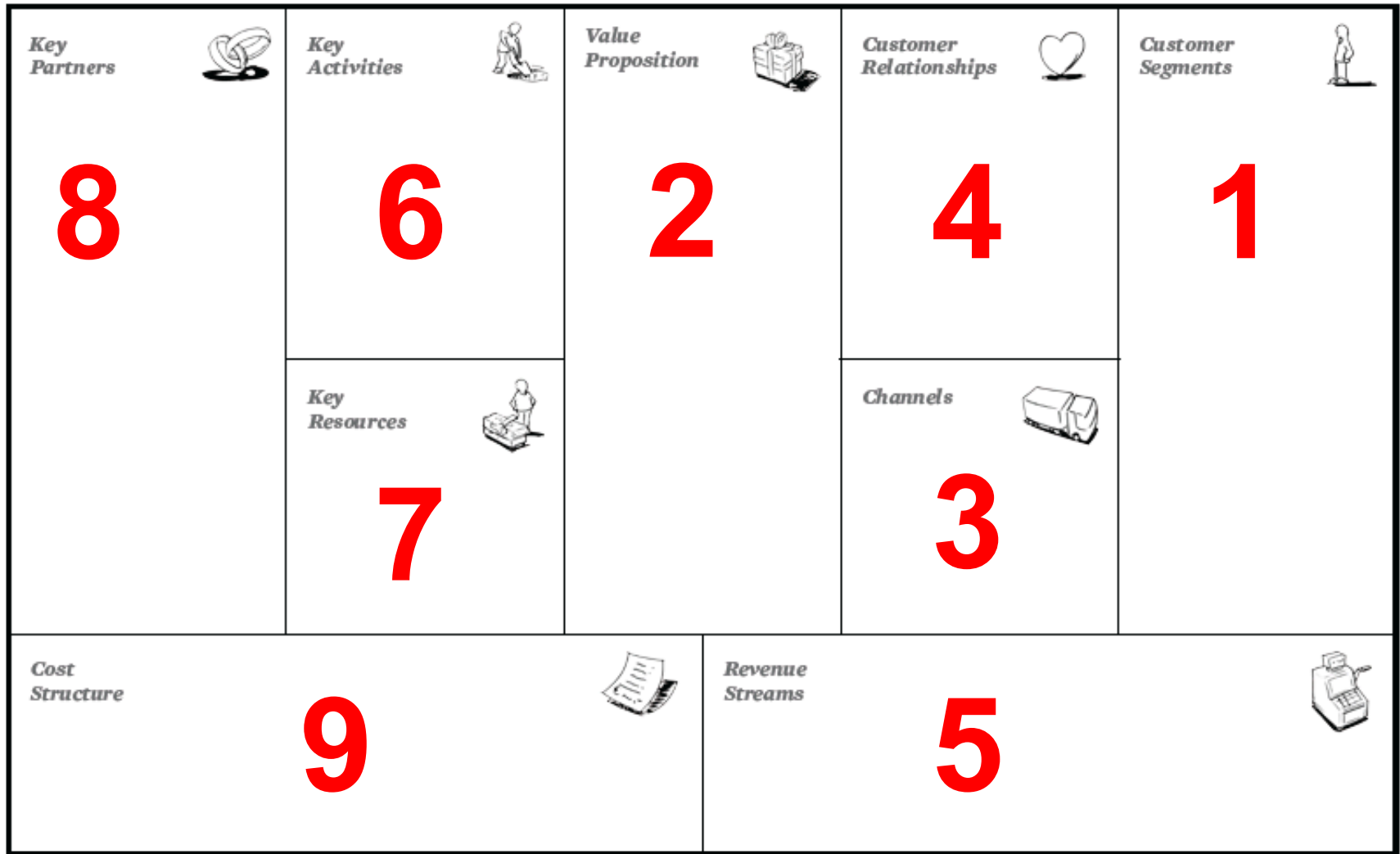
The 9 Building Blocks of Business Model

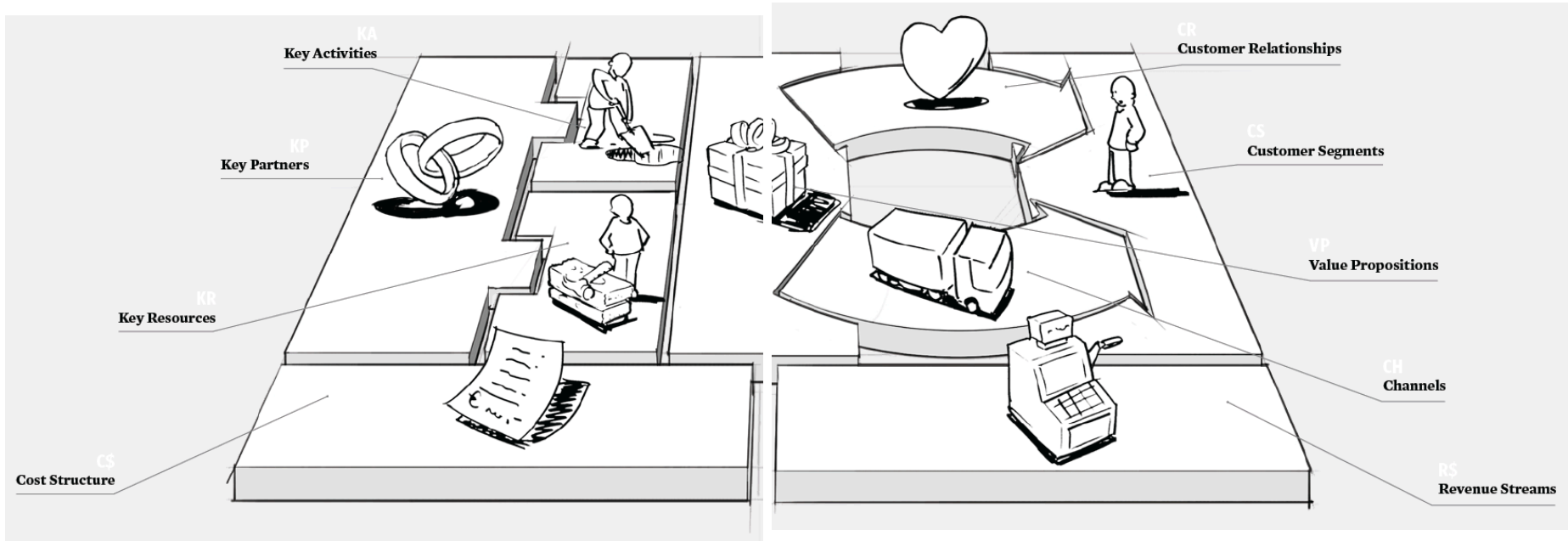# 1. Customer Segments

Defines the different groups of people or organizations an enterprise aims to reach and serve
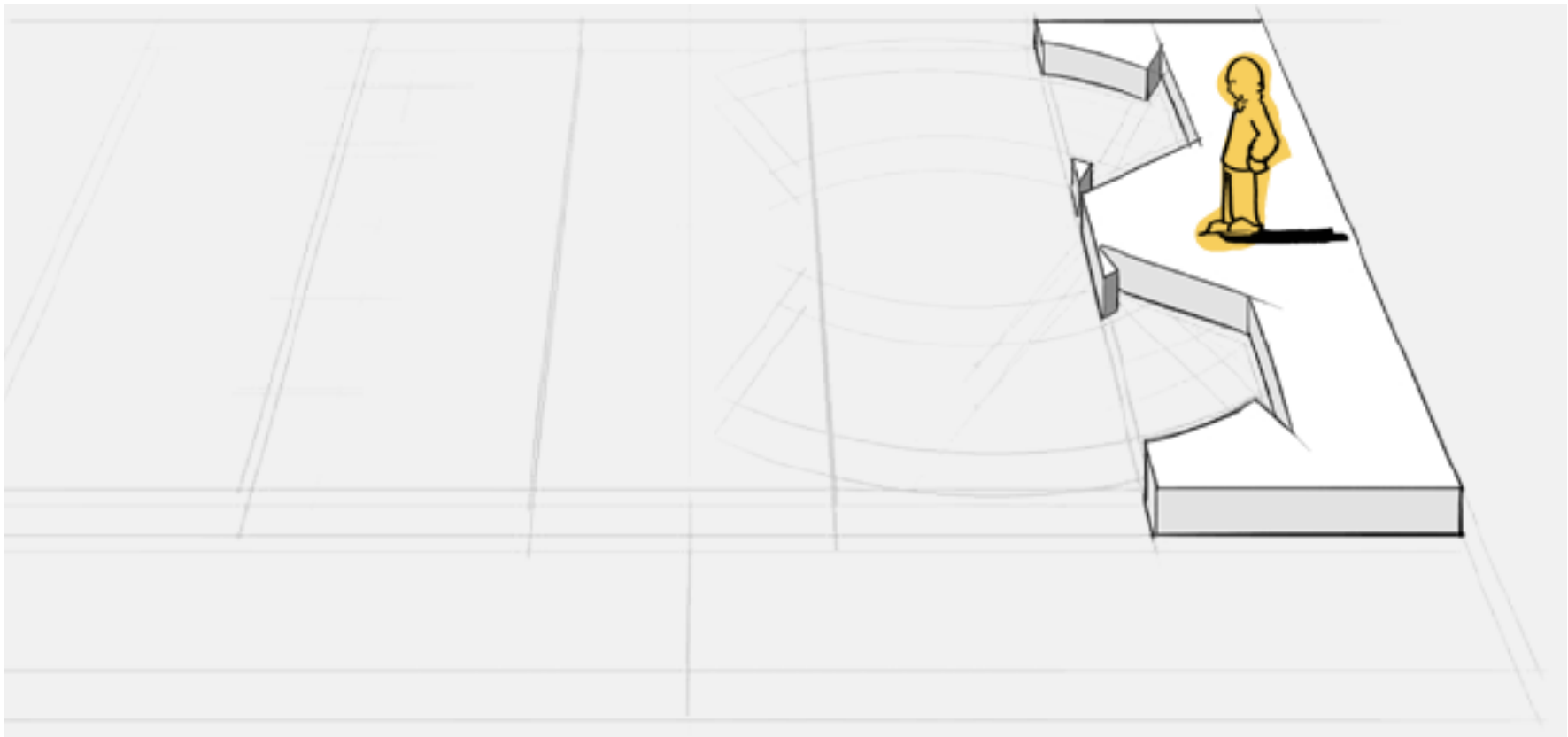
2. Value Propositions

Describes the bundle of products and services that create value for a specific Customer Segment

3. Channels

Describes how a company communicates with and reaches its Customer Segments to deliver a Value Proposition
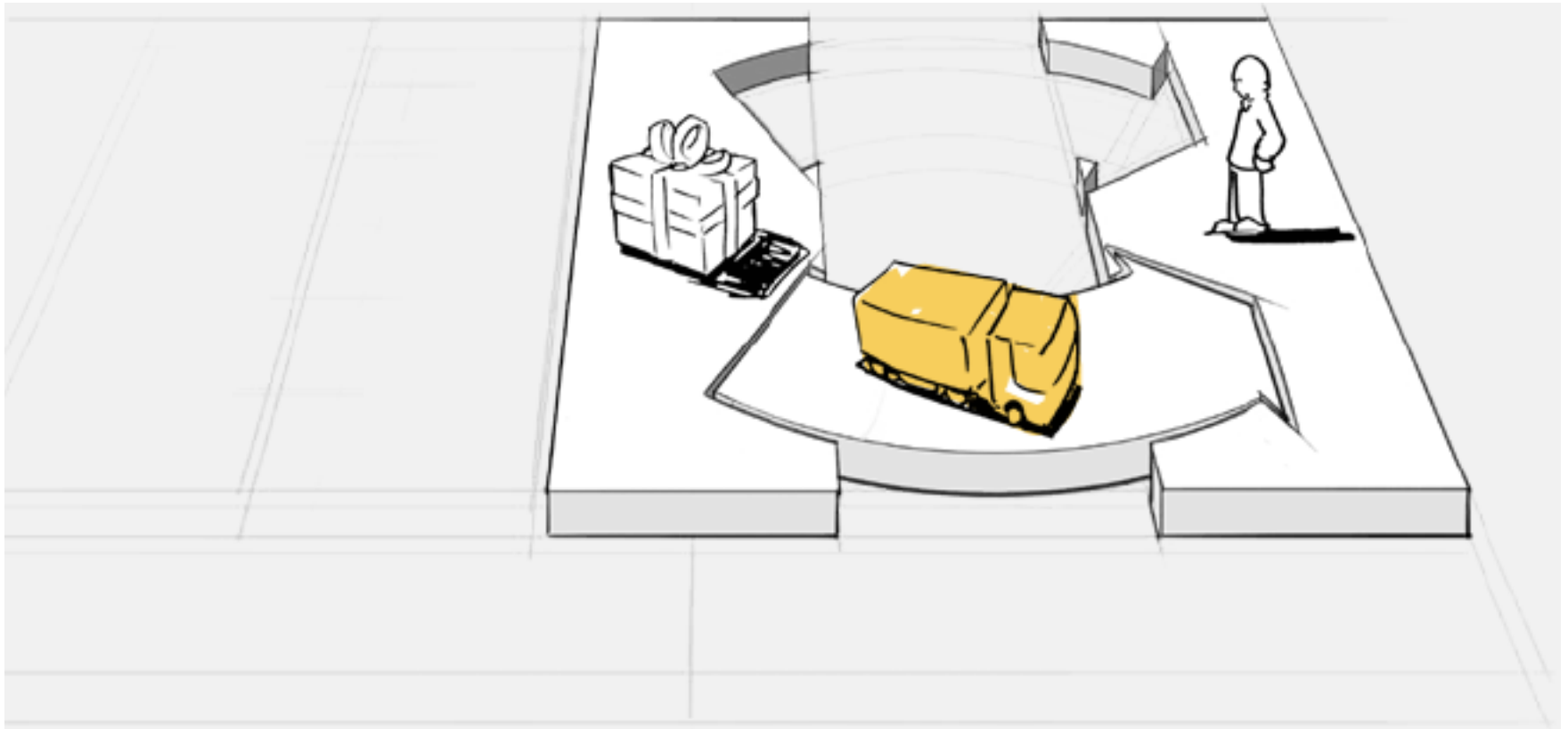
4. Customer Relationships

Describes the types of relationships a company establishes with specific Customer Segments
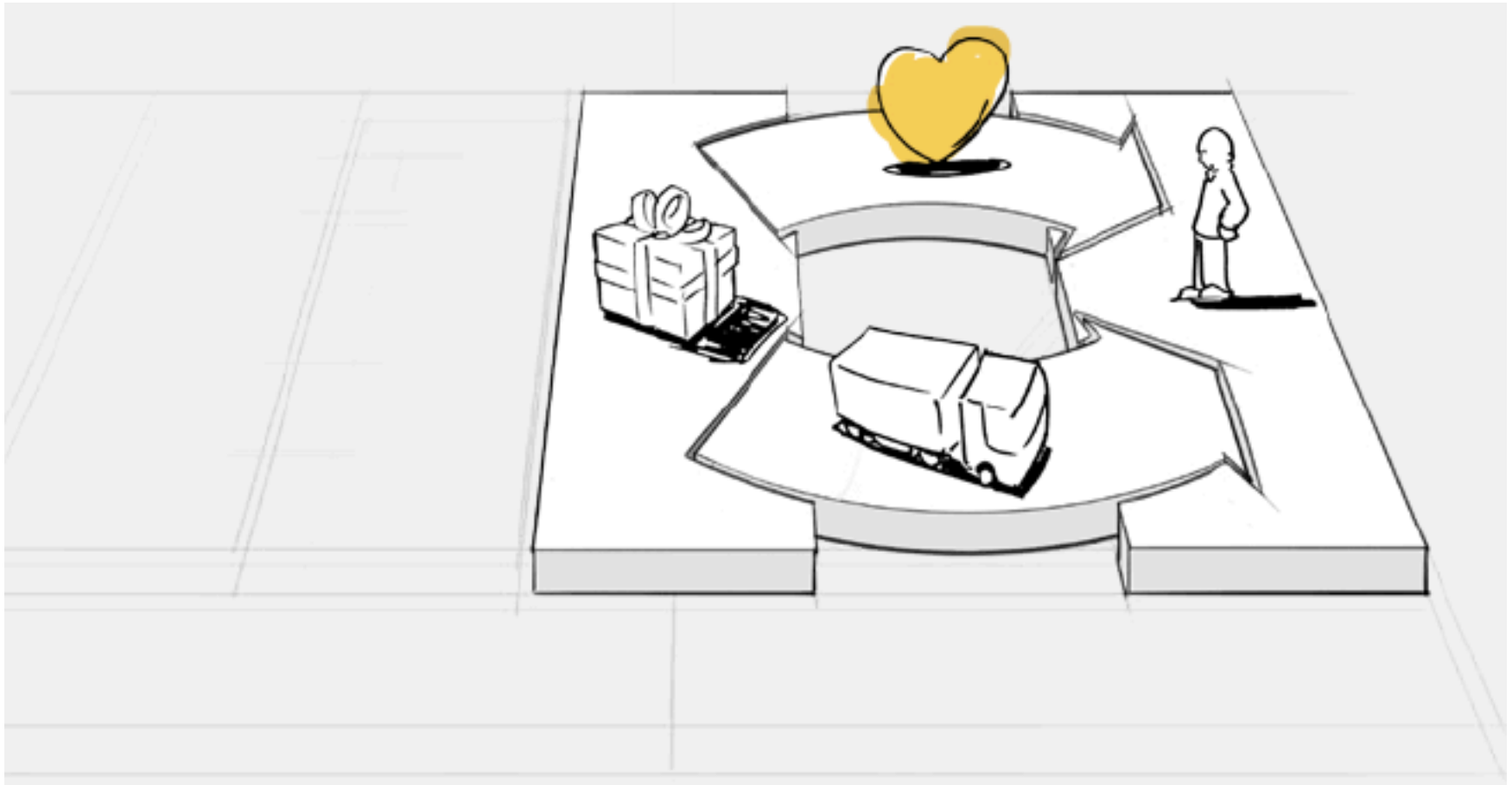
5. Revenue Streams

Represents the cash a company generates from each Customer Segment (costs must be subtracted from revenues to create earnings)
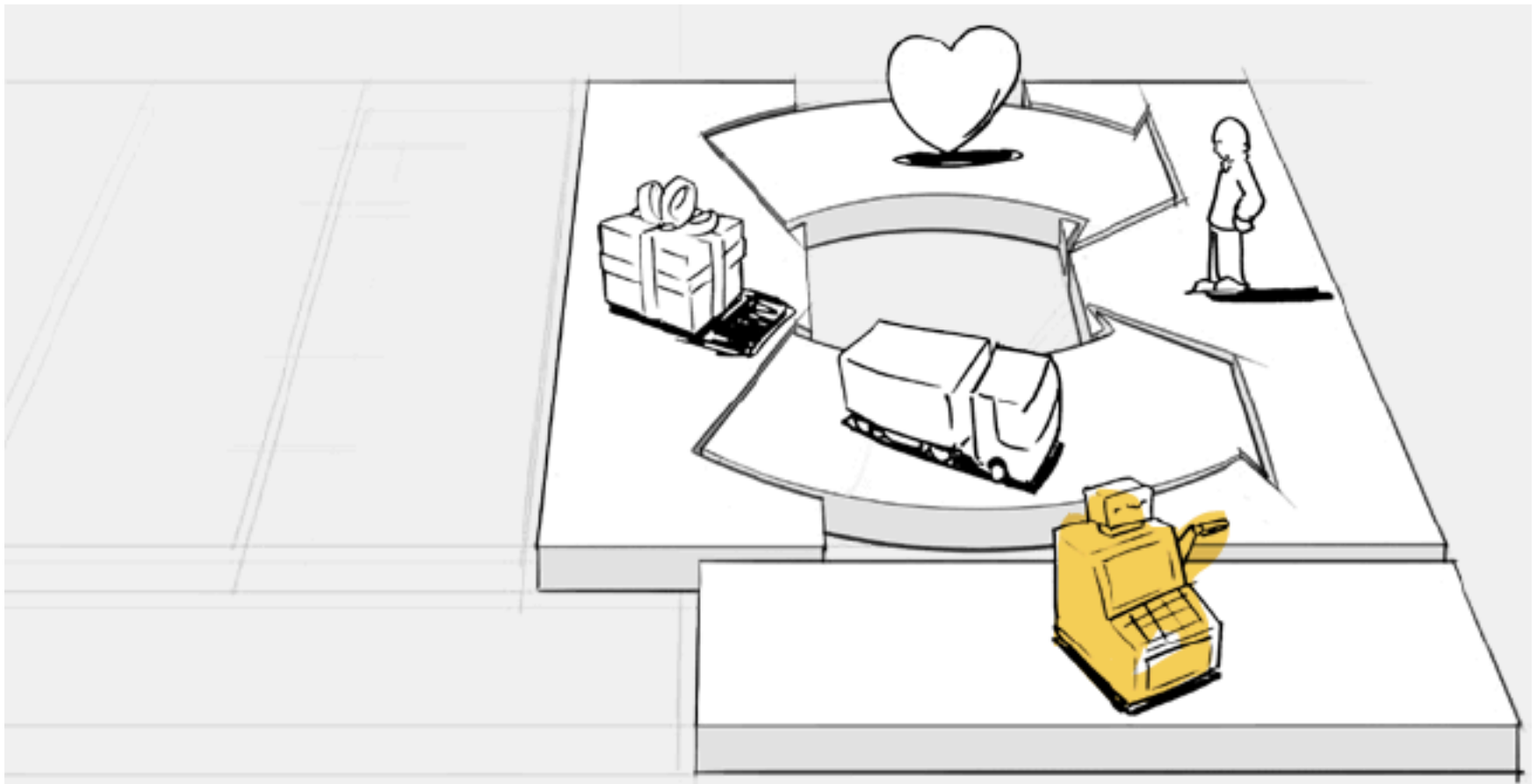
6. Key Resources

Describes the most important assets required to make a business model work
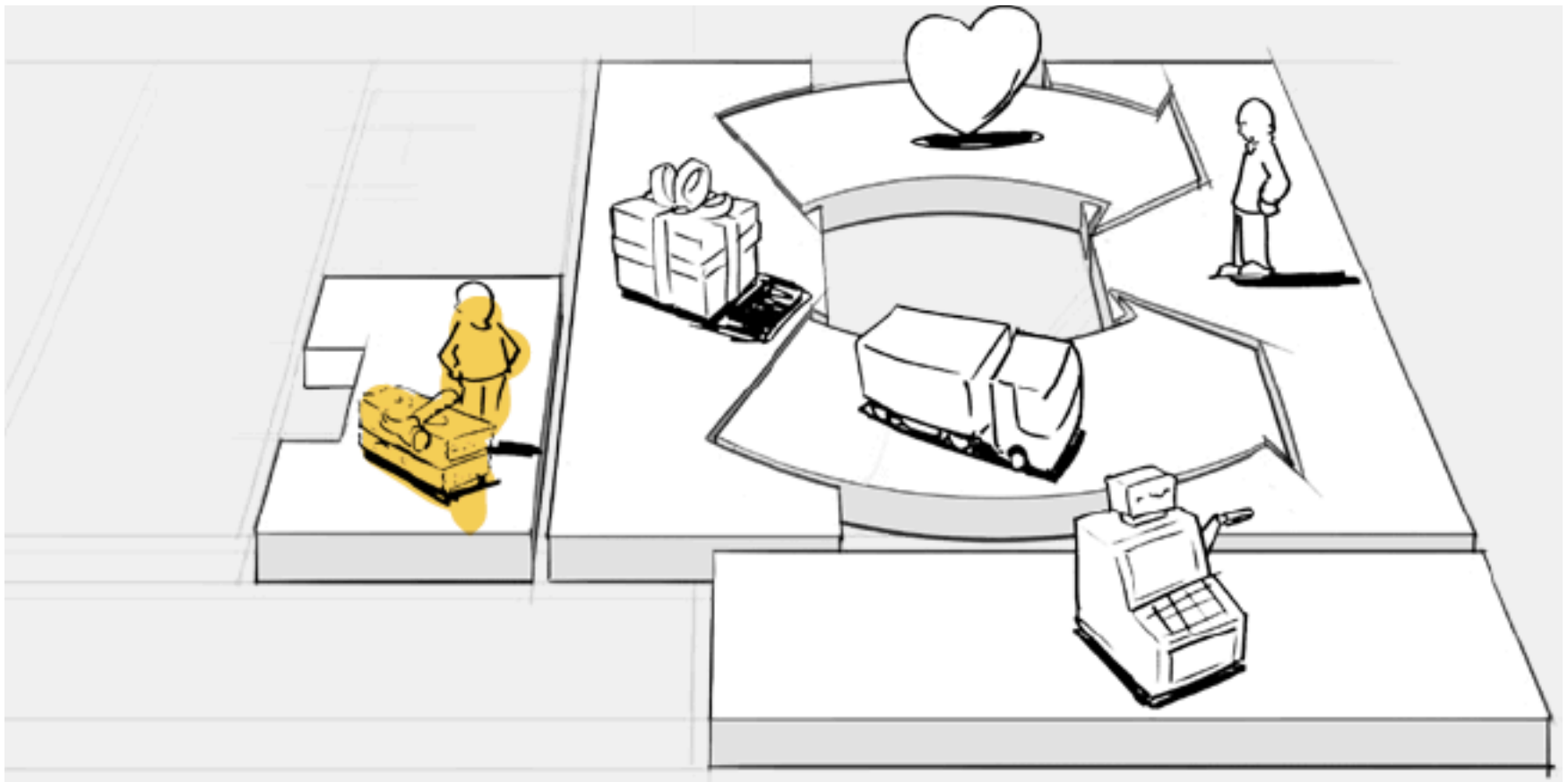
7. Key Activities

Describes the most important things a company must do to make its business model work
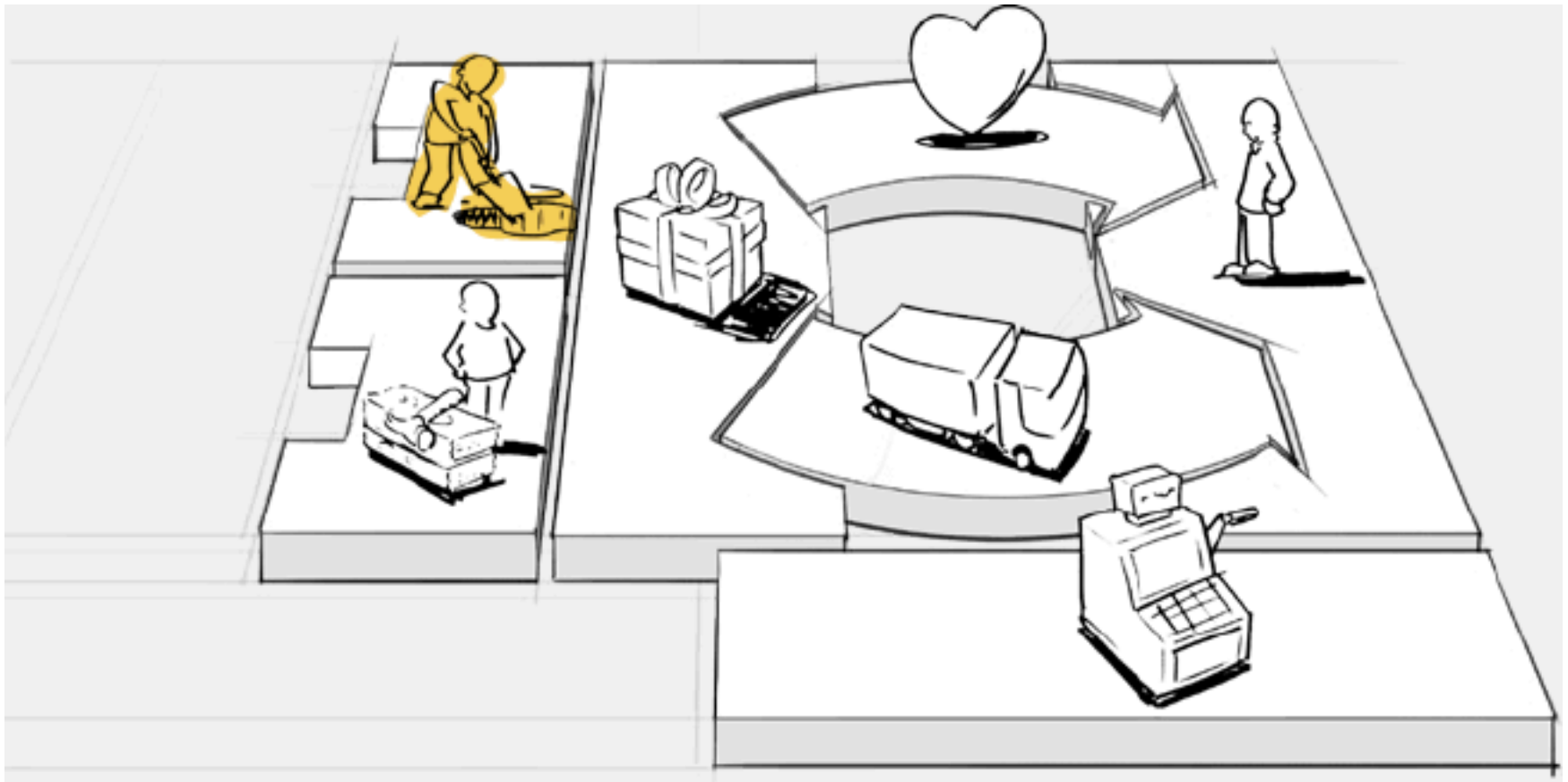
8. Key Partnerships

Describes the network of suppliers and partners that make the business model work
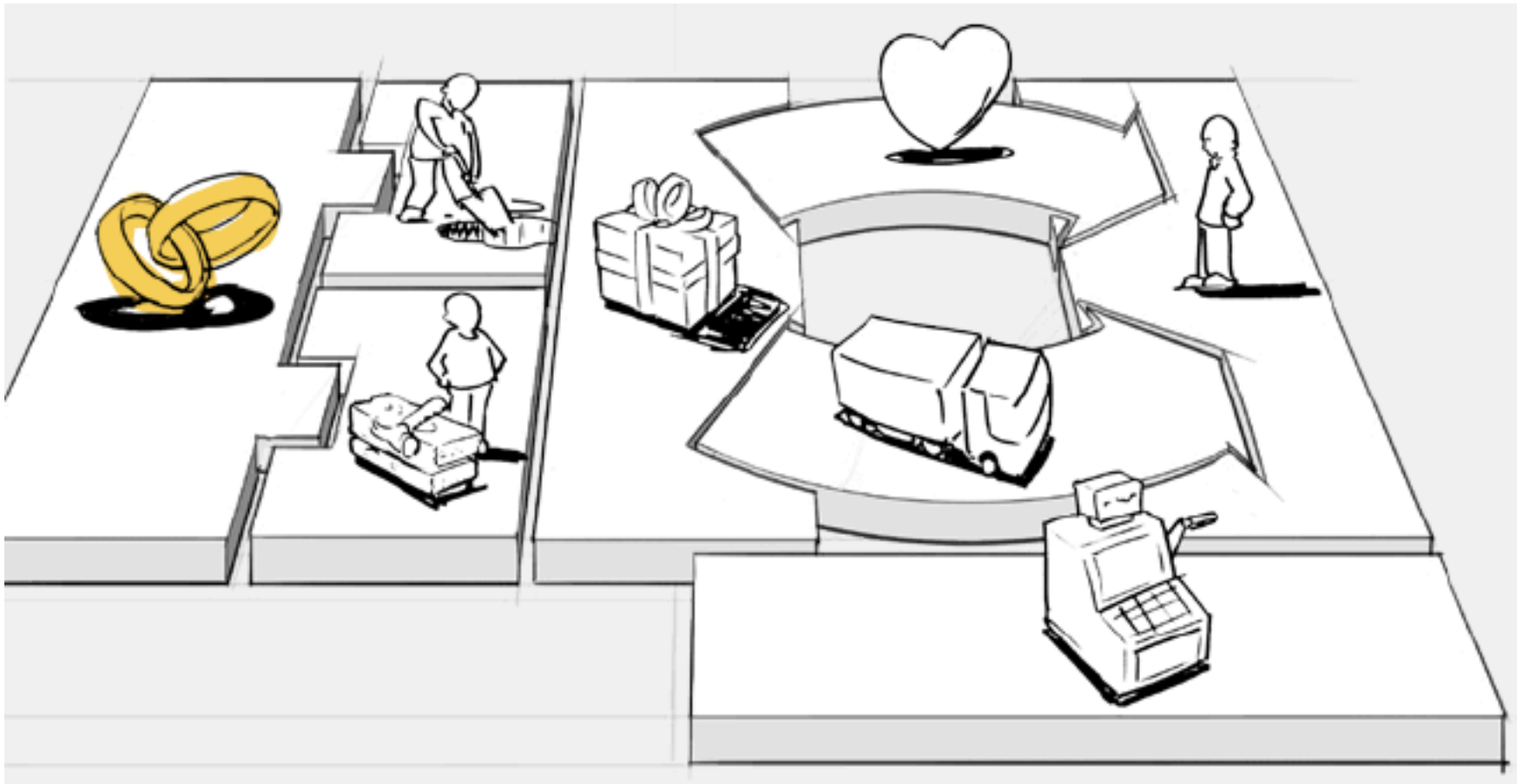
9. Cost Structure

Describes all costs incurred to operate a business model
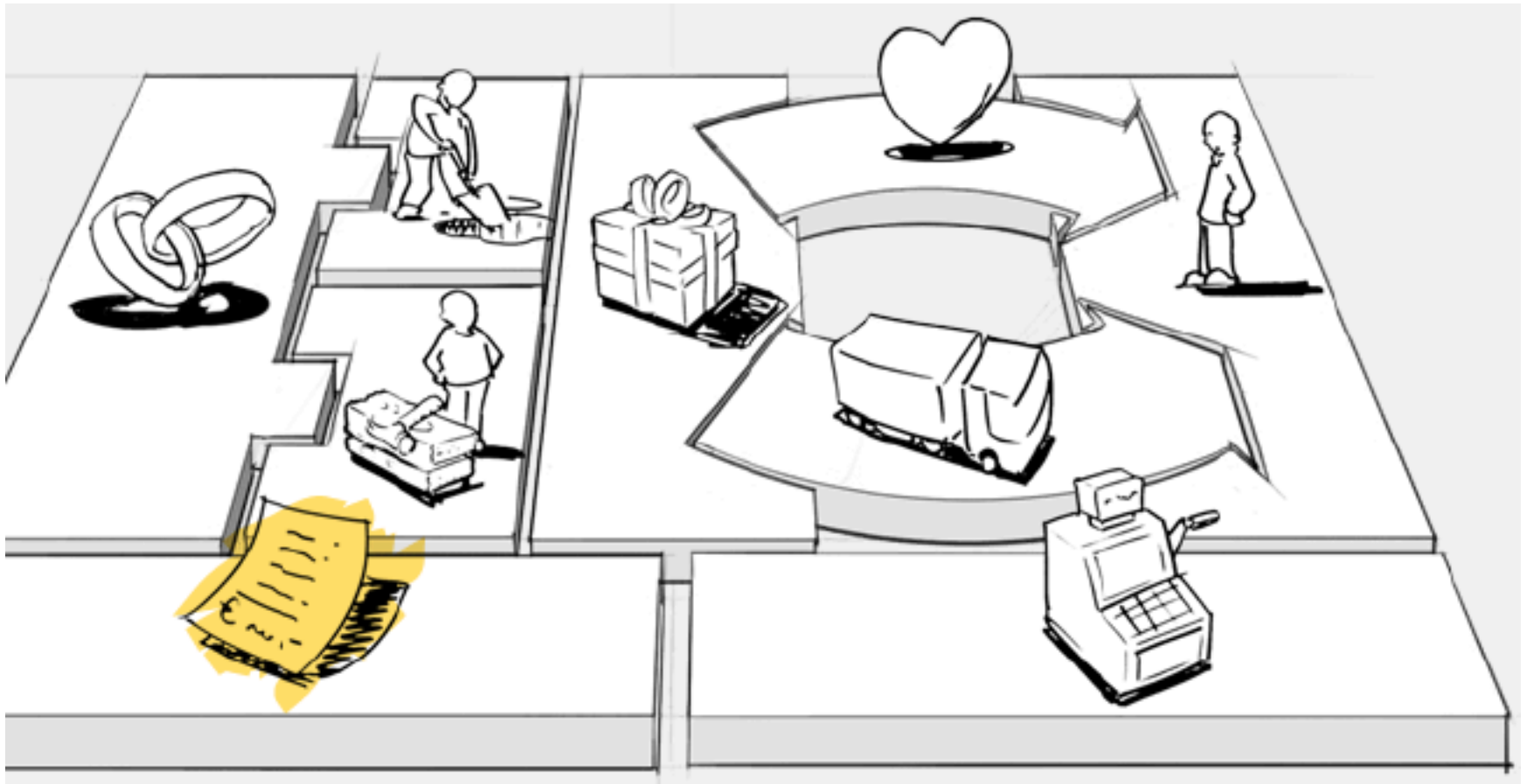
The 9 Building Blocks of Business Model

1. Customer Segments
   - An organization serves one or several Customer Segments.

2. Value Propositions
   - It seeks to solve customer problems and satisfy customer needs with value propositions.

3. Channels
   - Value propositions are delivered to customers through communication, distribution, and sales Channels.

4. Customer Relationships
   - Customer relationships are established and maintained with each Customer Segment.

The 9 Building Blocks of Business Model

5. Revenue Streams
   – Revenue streams result from value propositions successfully offered to customers.

6. Key Resources
   – Key resources are the assets required to offer and deliver the previously described elements...

7. Key Activities
   – ...by performing a number of Key Activities.

8. Key Partnerships
   – Some activities are outsourced and some resources are acquired outside the enterprise.

9. Cost Structure
   – The business model elements result in the cost structure.

Business Model

8 Key Partners	**6** Key Activities	**2** Value Proposition	**4** Customer Relationships	**1** Customer Segments
	7 Key Resources		**3** Channels	

9 Cost Structure	**5** Revenue Streams

Business Model Generation

Source: Alexander Osterwalder & Yves Pigneur, Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers, Wiley, 2010.

30
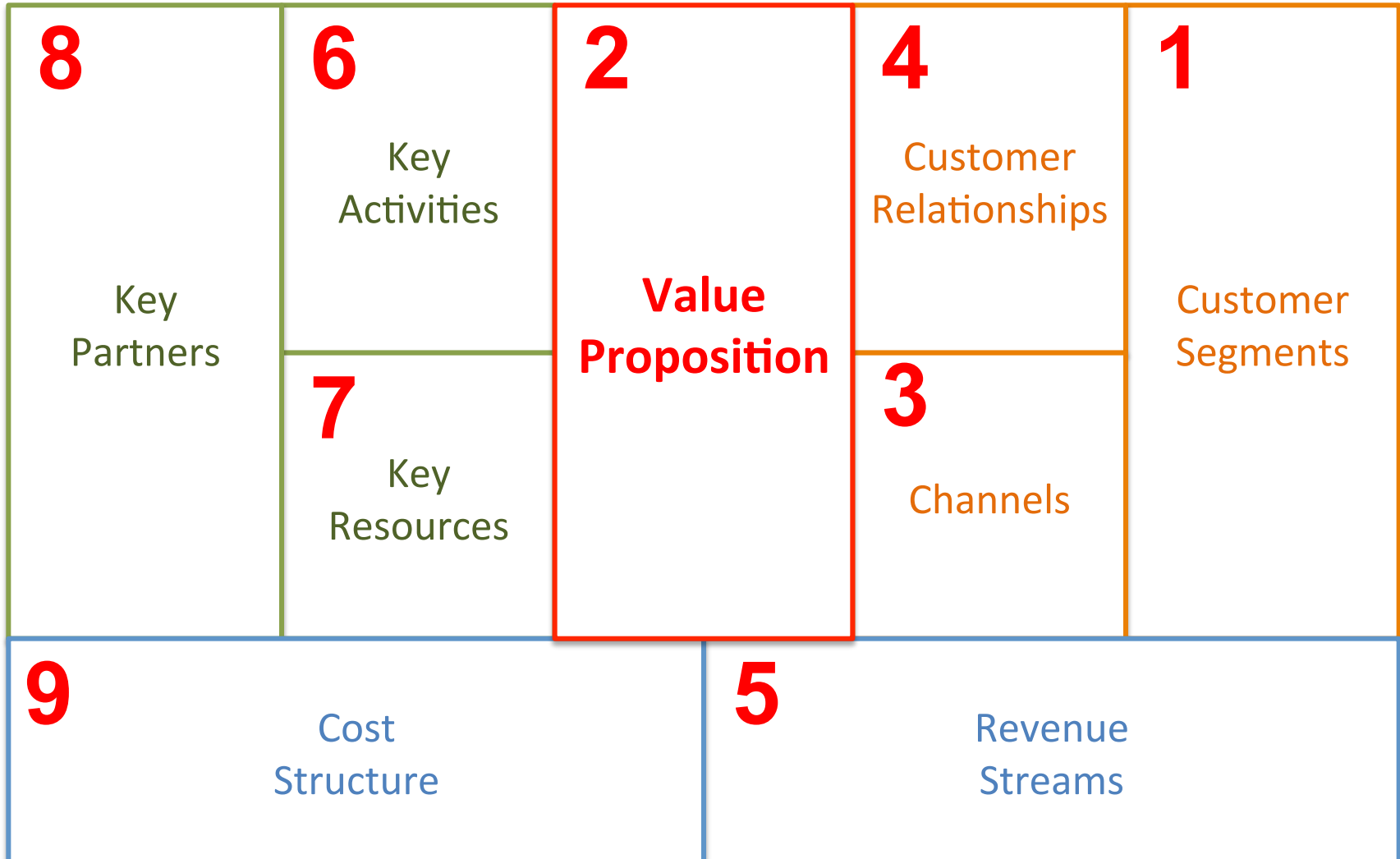
Business Model Generation
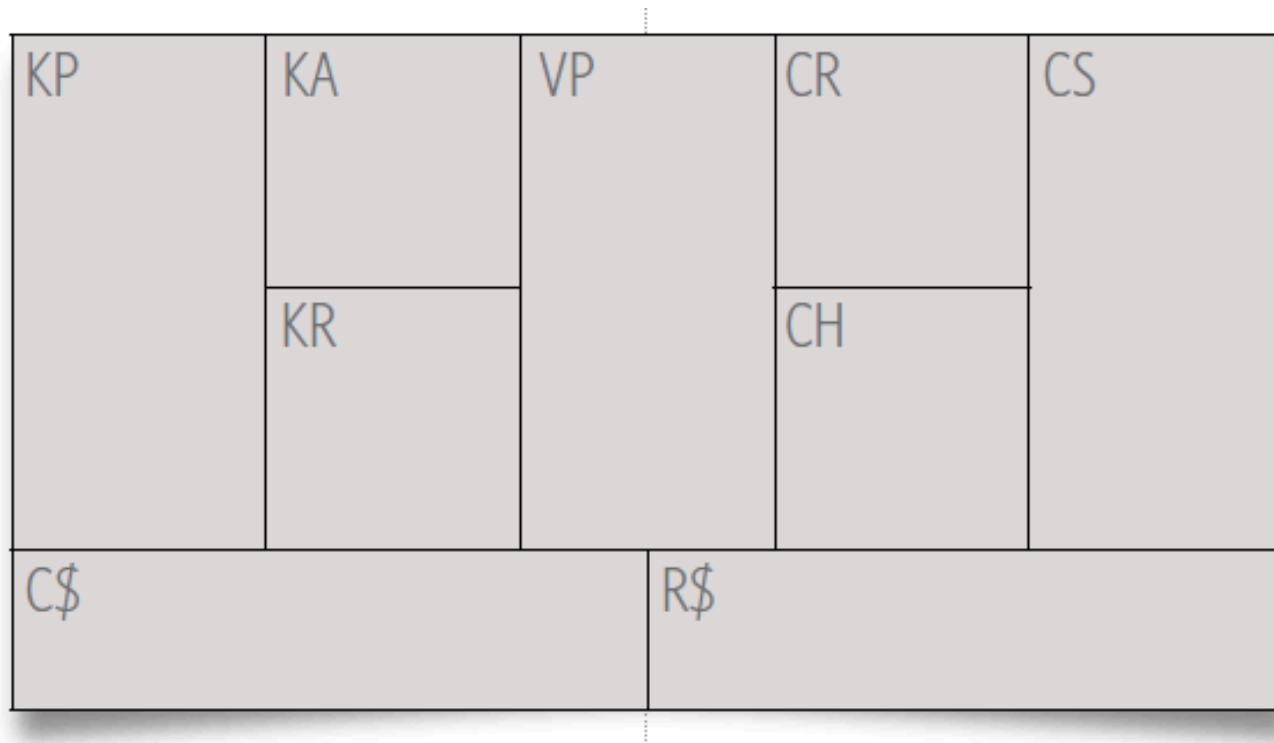
LEFT CANVAS efficiency

KP	KA	VP	CR	CS
	KR		CH	
C$		R$		

RIGHT CANVAS value

Production and Logistics

Anything beyond content creation is outsourced to readily available service providers.

Differentiation

An entirely different format, business model, and story for the book makes it stand out in a crowded market.

Community

The book is co-created with practitioners from around the world who feel ownership thanks to attribution as contributing co-authors.

Buyers

Paying customers are not only readers, but co-creators and companies that want customized books for their employees and clients.

KP

THE MOVEMENT (DESIGN)

NING PLATFORM

AMAZON.COM

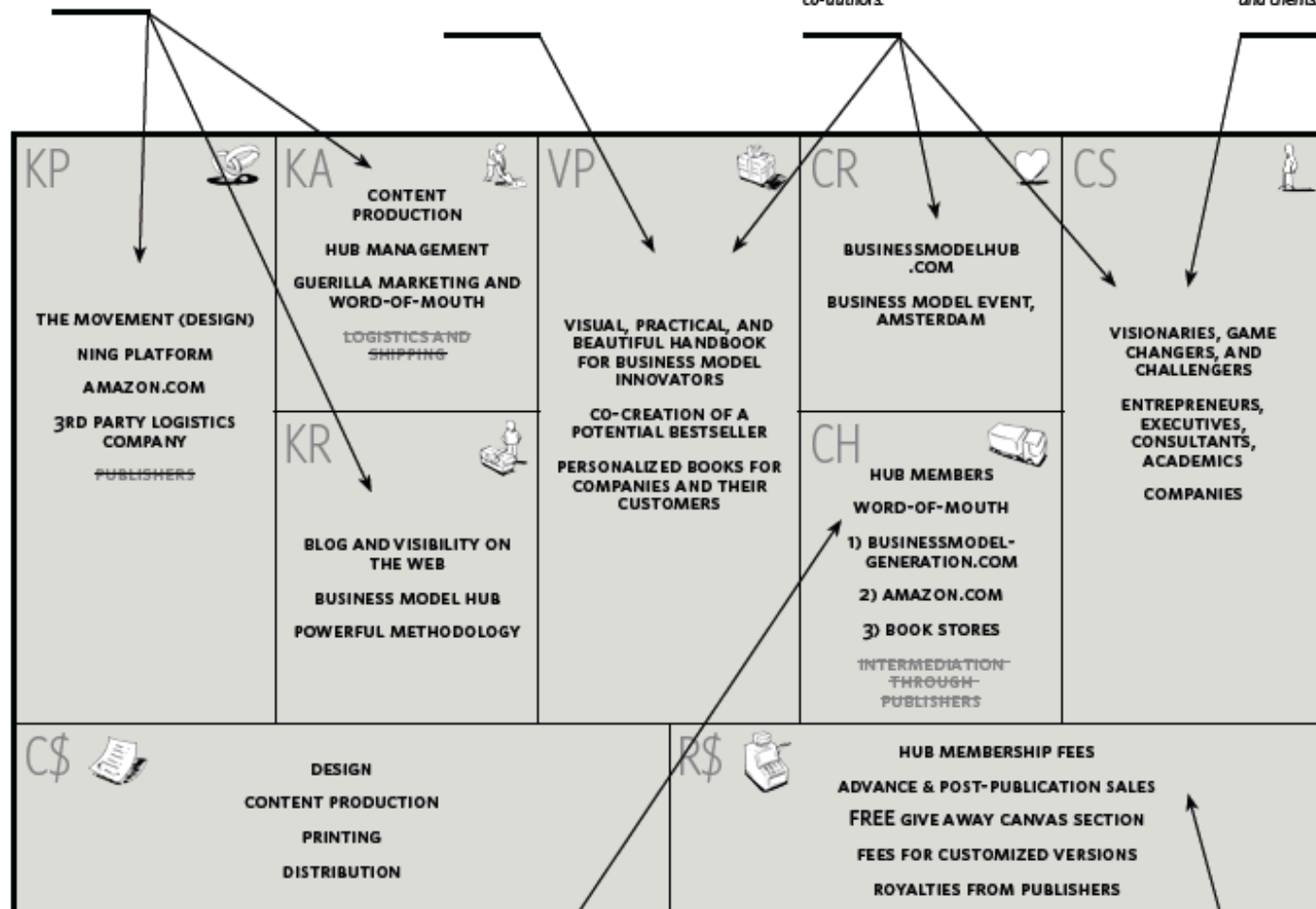3RD PARTY LOGISTICS COMPANY

~~PUBLISHERS~~

KA

CONTENT PRODUCTION

HUB MANAGEMENT

GUERILLA MARKETING AND WORD-OF-MOUTH

~~LOGISTICS AND SHIPPING~~

KR

BLOG AND VISIBILITY ON THE WEB

BUSINESS MODEL HUB

POWERFUL METHODOLOGY

VP

VISUAL, PRACTICAL, AND BEAUTIFUL HANDBOOK FOR BUSINESS MODEL INNOVATORS

CO-CREATION OF A POTENTIAL BESTSELLER

PERSONALIZED BOOKS FOR COMPANIES AND THEIR CUSTOMERS

CR

BUSINESSMODELHUB .COM

BUSINESS MODEL EVENT, AMSTERDAM

CH

HUB MEMBERS

WORD-OF-MOUTH

1) BUSINESSMODEL-GENERATION.COM

2) AMAZON.COM

3) BOOK STORES

~~INTERMEDIATION THROUGH PUBLISHERS~~

CS

VISIONARIES, GAME CHANGERS, AND CHALLENGERS

ENTREPRENEURS, EXECUTIVES, CONSULTANTS, ACADEMICS

COMPANIES

C$

DESIGN

CONTENT PRODUCTION

PRINTING

DISTRIBUTION

R$

HUB MEMBERSHIP FEES

ADVANCE & POST-PUBLICATION SALES

FREE GIVE AWAY CANVAS SECTION

FEES FOR CUSTOMIZED VERSIONS

ROYALTIES FROM PUBLISHERS

THE CANVAS OF BUSINESS MODEL GENERATION
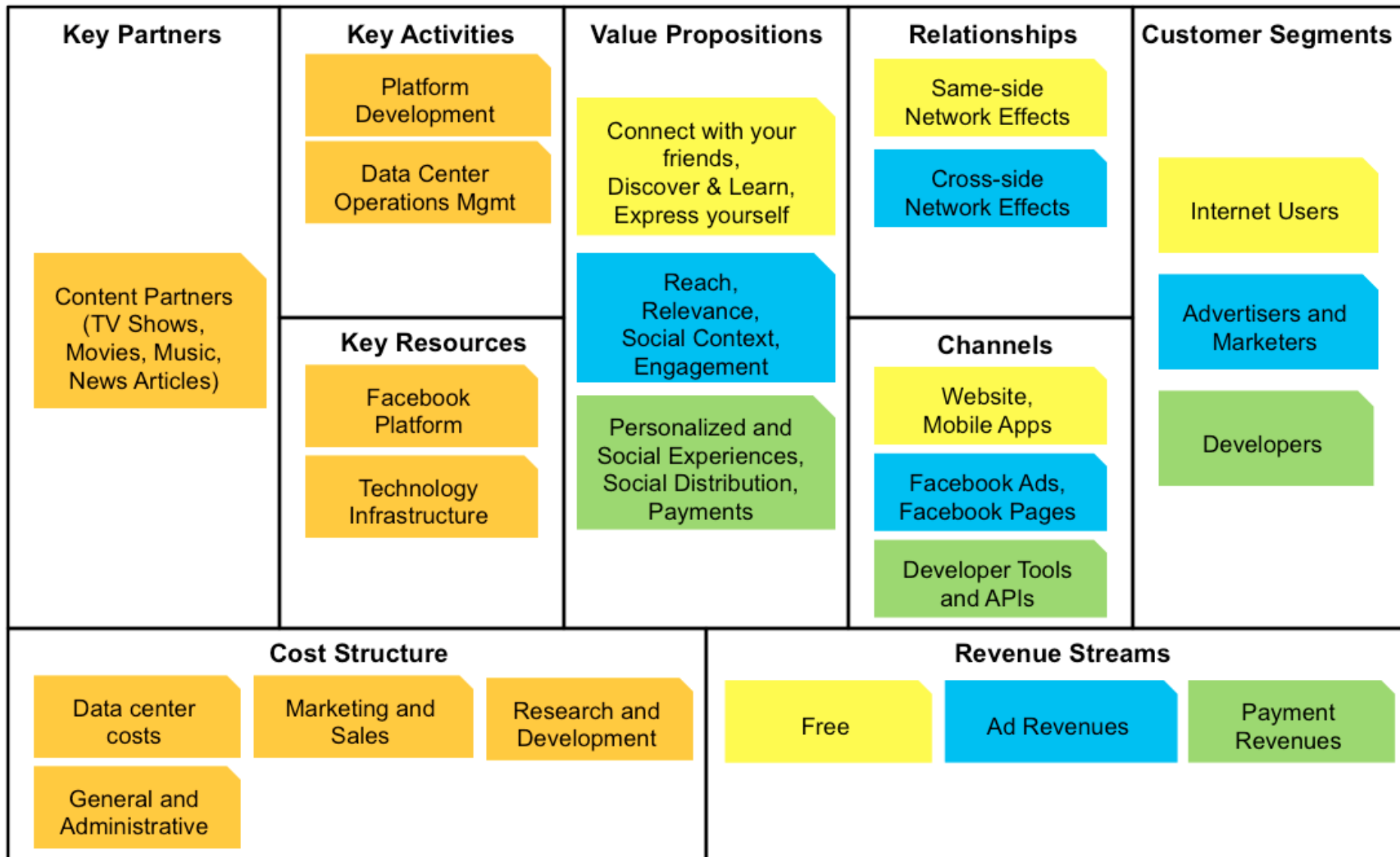
Reach

A mix of direct and indirect Channels and a phased approach optimizes reach and margins. The story of the book lends itself well to viral marketing and word-of-mouth promotion.
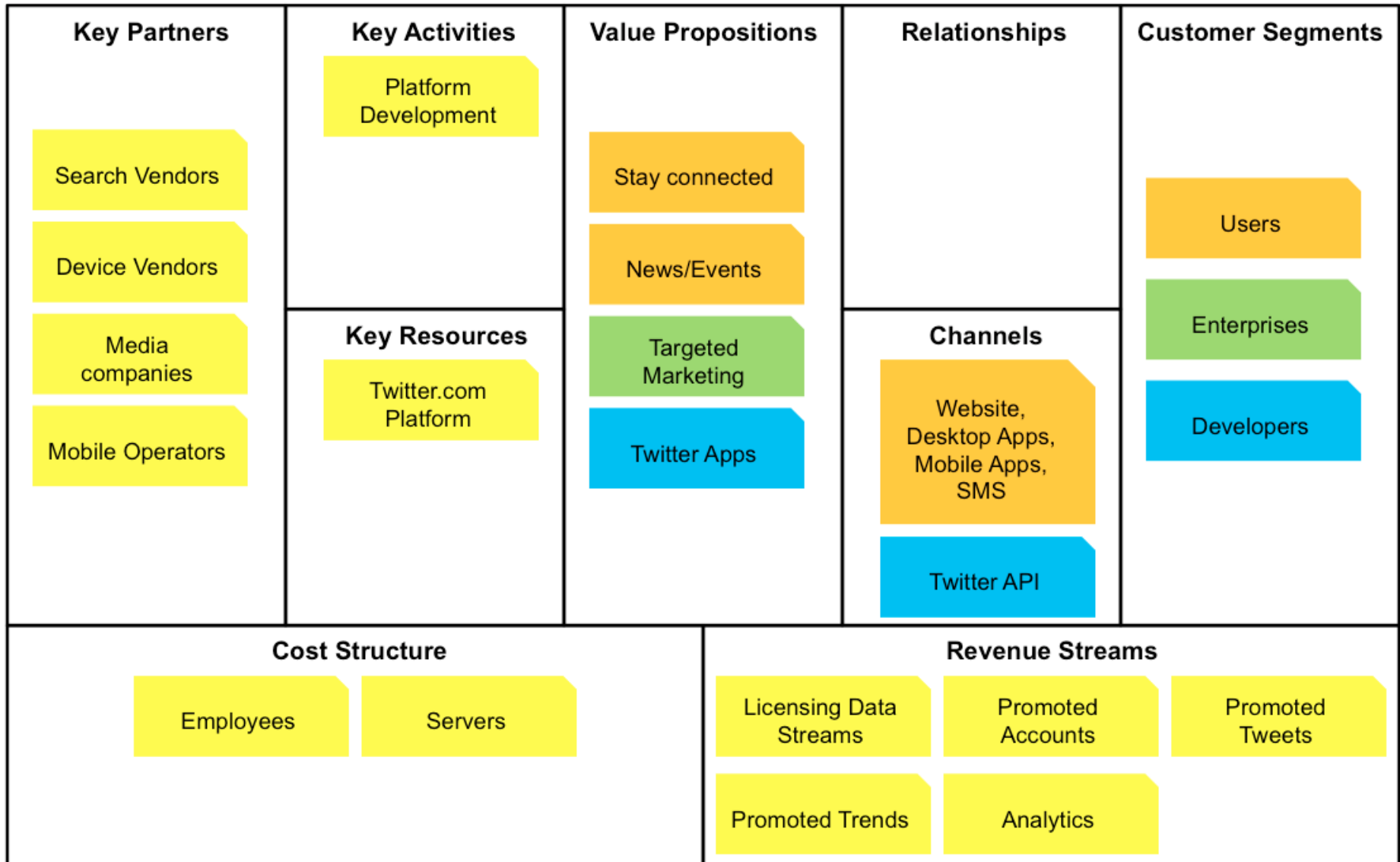
Revenues

The book was financed through advanced sales and fees paid by co-creators. Additional revenues come from customized versions for companies and their clients.
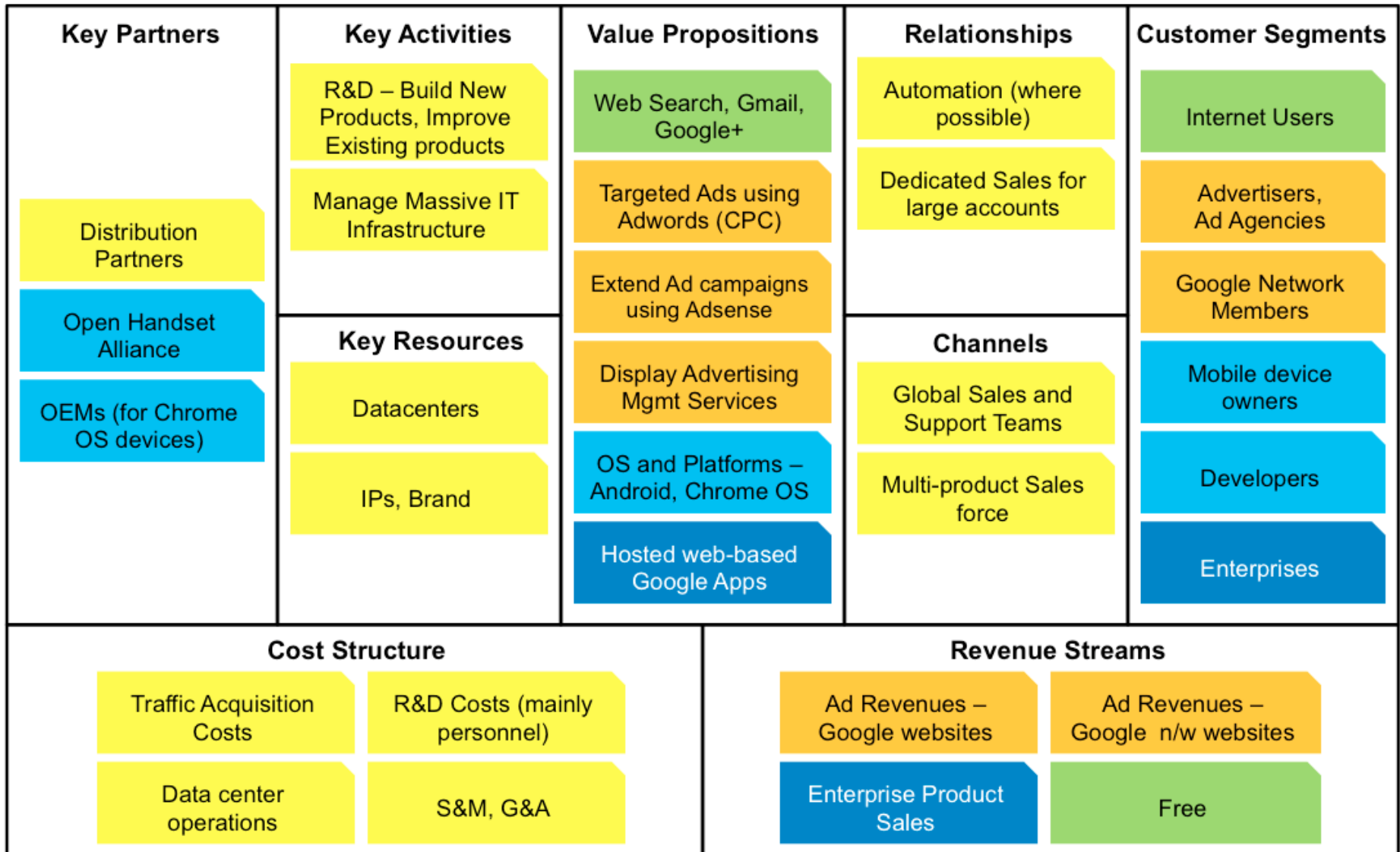
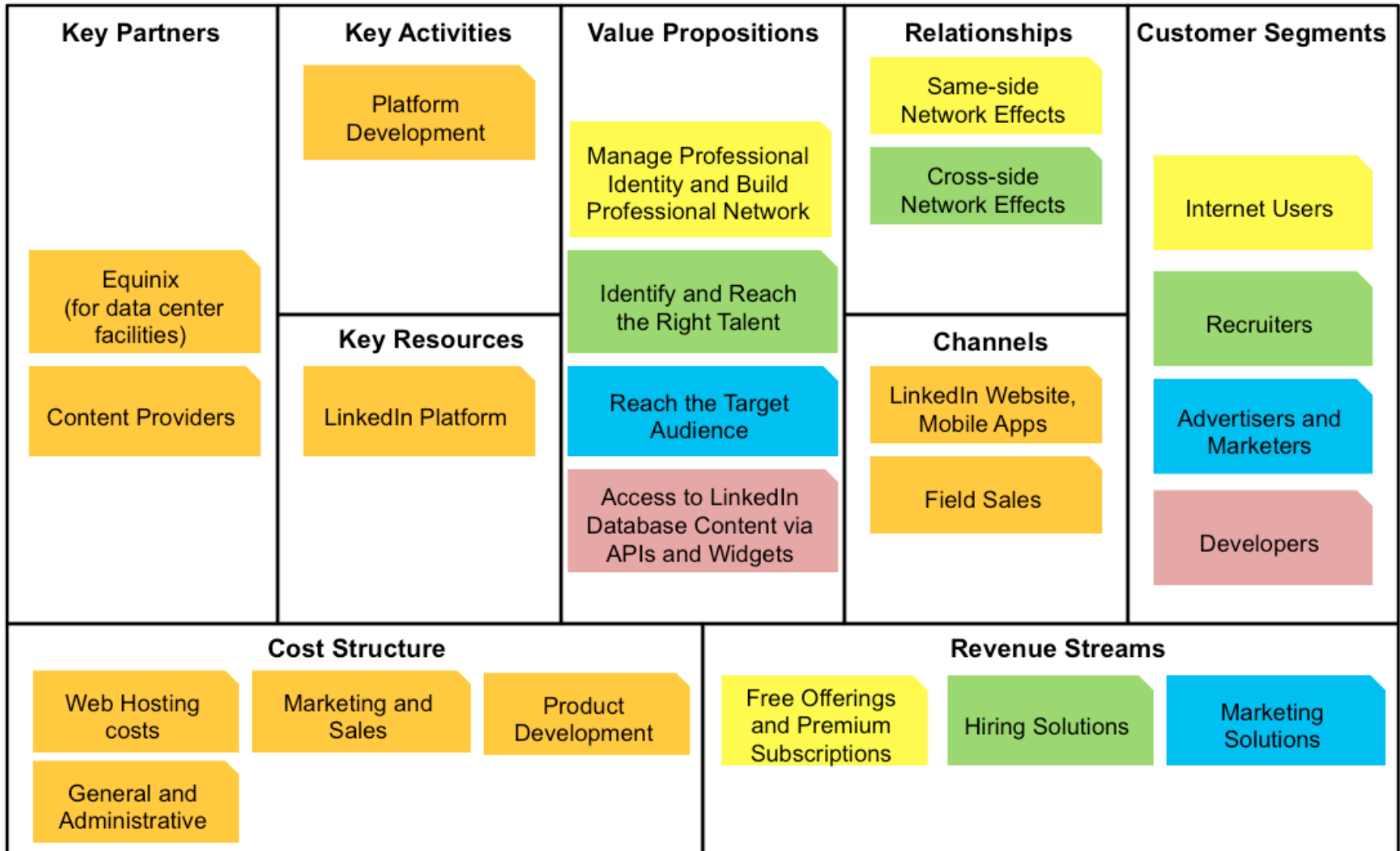# Facebook – World's leading Social Networking Site (SNS)

Key Partners

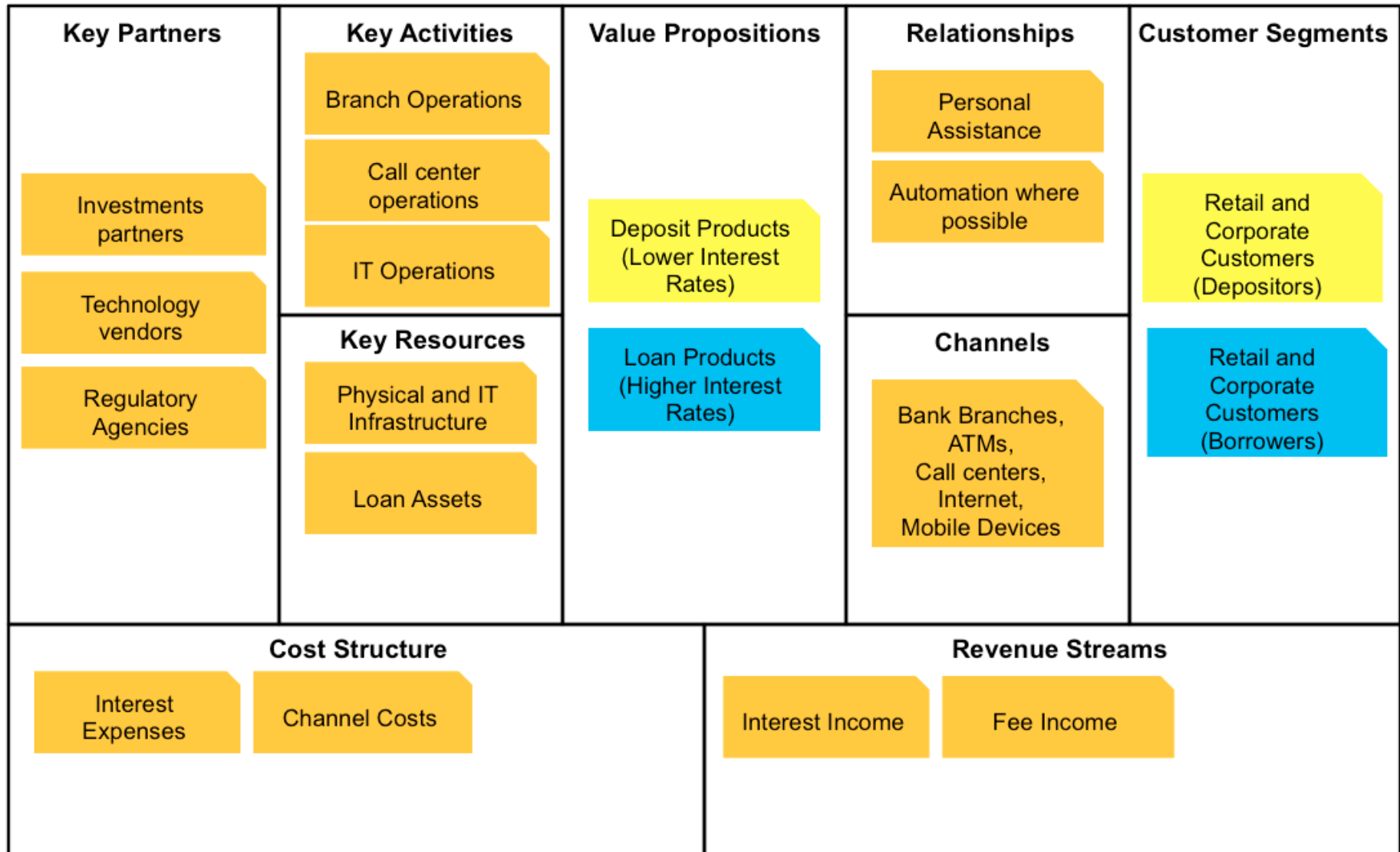Content Partners (TV Shows, Movies, Music, News Articles)

Key Activities

Platform Development

Data Center Operations Mgmt

Key Resources

Facebook Platform

Technology Infrastructure

Value Propositions

Connect with your friends, Discover & Learn, Express yourself

Reach, Relevance, Social Context, Engagement

Personalized and Social Experiences, Social Distribution, Payments

Relationships

Same-side Network Effects

Cross-side Network Effects

Channels

Website, Mobile Apps

Facebook Ads, Facebook Pages

Developer Tools and APIs

Customer Segments

Internet Users

Advertisers and Marketers

Developers

Cost Structure

Data center costs

Marketing and Sales

Research and Development

General and Administrative

Revenue Streams

Free

Ad Revenues

Payment Revenues

www.businessmodelgeneration.com

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Twitter Business Model

Key Partners	Key Activities	Value Propositions	Relationships	Customer Segments
Search Vendors	Platform Development	Stay connected		Users
Device Vendors		News/Events		Enterprises
Media companies	**Key Resources**	Targeted Marketing	**Channels**	Developers
Mobile Operators	Twitter.com Platform	Twitter Apps	Website, Desktop Apps, Mobile Apps, SMS	
			Twitter API	

Cost Structure	Revenue Streams
Employees Servers	Licensing Data Streams Promoted Accounts Promoted Tweets Promoted Trends Analytics

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Google Business Model

Key Partners	Key Activities	Value Propositions	Relationships	Customer Segments
Distribution Partners	R&D – Build New Products, Improve Existing products	Web Search, Gmail, Google+	Automation (where possible)	Internet Users
Open Handset Alliance	Manage Massive IT Infrastructure	Targeted Ads using Adwords (CPC)	Dedicated Sales for large accounts	Advertisers, Ad Agencies
OEMs (for Chrome OS devices)	**Key Resources**	Extend Ad campaigns using Adsense		Google Network Members
	Datacenters	Display Advertising Mgmt Services	**Channels**	Mobile device owners
	IPs, Brand	OS and Platforms – Android, Chrome OS	Global Sales and Support Teams	Developers
		Hosted web-based Google Apps	Multi-product Sales force	Enterprises

Cost Structure	Revenue Streams
Traffic Acquisition Costs — R&D Costs (mainly personnel) — Data center operations — S&M, G&A	Ad Revenues – Google websites — Ad Revenues – Google n/w websites — Enterprise Product Sales — Free

www.businessmodelgeneration.com

LinkedIn – World's Largest Professional Network

Key Partners

Equinix (for data center facilities)

Content Providers

Key Activities

Platform Development

Key Resources

LinkedIn Platform

Value Propositions

Manage Professional Identity and Build Professional Network

Identify and Reach the Right Talent

Reach the Target Audience

Access to LinkedIn Database Content via APIs and Widgets

Relationships

Same-side Network Effects

Cross-side Network Effects

Channels

LinkedIn Website, Mobile Apps

Field Sales

Customer Segments

Internet Users

Recruiters

Advertisers and Marketers

Developers

Cost Structure

Web Hosting costs

Marketing and Sales

Product Development

General and Administrative

Revenue Streams

Free Offerings and Premium Subscriptions

Hiring Solutions

Marketing Solutions

www.businessmodelgeneration.com

Source: http://bmimatters.com/tag/business-model-canvas-examples/

Business Model of Banking companies

Key Partners	Key Activities	Value Propositions	Relationships	Customer Segments
Investments partners	Branch Operations	Deposit Products (Lower Interest Rates)	Personal Assistance	Retail and Corporate Customers (Depositors)
Technology vendors	Call center operations		Automation where possible	
Regulatory Agencies	IT Operations	Loan Products (Higher Interest Rates)	**Channels**	Retail and Corporate Customers (Borrowers)
	Key Resources		Bank Branches, ATMs, Call centers, Internet, Mobile Devices	
	Physical and IT Infrastructure			
	Loan Assets			

Cost Structure	Revenue Streams
Interest Expenses Channel Costs	Interest Income Fee Income

www.businessmodelgeneration.com

Source: http://bmimatters.com/tag/business-model-canvas-examples/

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VISA – Leader in Global Payments Industry

Key Partners
- Technology Alliances
- Commercial Partners

Key Activities
- Payments Network Management
- Transaction Processing
- Value-added Services

Key Resources
- Payment Products Platform
- VISA Brand

Value Propositions
- Payment Product Platforms for card programs and cashless payments
- Convenience, Security, Rewards associated with card payments
- Improved Sales, Customer Convenience

Relationships

Channels
- Sponsorships (FIFA World cup, Olympics)
- TV ads, Tradeshows, Conferences

Customer Segments
- Financial Institutions (Issuers)
- Financial Institutions (Acquirers)
- Card Holders
- Merchants

Cost Structure
- Personnel
- Network, EDP, & Communications
- Brand Promotion
- Litigations Provision

Revenue Streams
- Services Revenues
- Data Processing Revenues
- International Revenues

www.businessmodelgeneration.com

The Business Model Canvas

Designed for: Techno Cake
Designed by: Danilo Tič
On: 1.2.2011
Iteration: 01

Key Partners

Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

- MC Miš
- Local presenters
- Volunteers

Key Activities

- Event s Management
- Marketing Management
- Best presentations

Key Resources

What Key Resources do our Value Propositions require?

- Volunteers
- Presentation Hall

Value Propositions

What value do we deliver to the customer?
Which one of our customer's problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?

- Techno cake talks and presentations
- Videos about talks and presentations
- Advertising Video WWW

Customer Relationships

What type of relationship does each of our Customer Segments expect us to establish and maintain with them?

- Facebook, Twitter Flickr Video-www

Channels

Through which Channels do our Customer Segments want to be reached?
How are we reaching them now?

- Facebook, Twitter Flickr Videos JAPTI, RIC

Customer Segments

For whom are we creating value?
Who are our most important customers?

- Geeks
- IT customers
- Engineers

- IT Companies
- Mobile operators
- Banks
- Insurence Co...

Cost Structure

What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?

- Event s Manag. Costs
- Authors' costs

Revenue Streams

For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

- Advertising fee
- Videos
- Logos..

www.businessmodelgeneration.com

Source: http://businessmodelcombo.wordpress.com/2011/02/04/what-would-a-sustainable-techno-cake-business-model-look-like/

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Customer Value

Marketing

"Meeting needs profitably"

Value

the sum of the tangible and intangible **benefits and costs**

Value

Customer Value Triad
Quality, Service, and Price (qsp)

Quality

Service **Price**

Source: Philip Kotler & Kevin Lane Keller, Marketing Management, 14th ed., Pearson, 2012
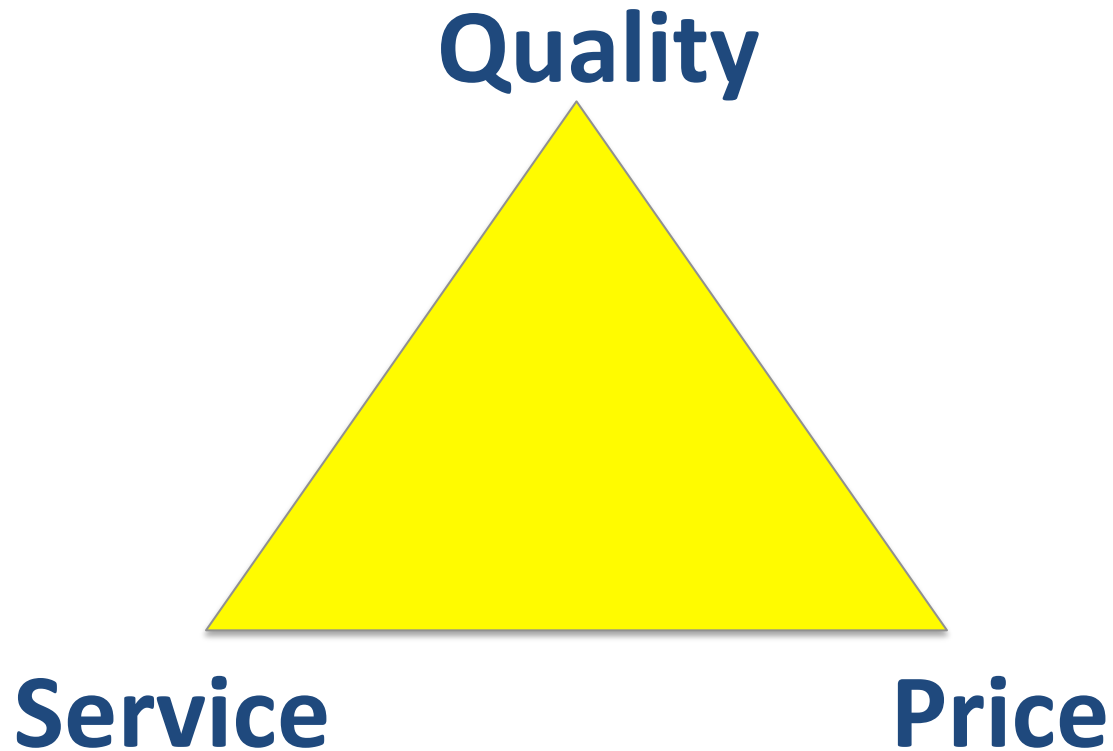
Value and Satisfaction

- Marketing
  - identification, creation, communication, delivery, and monitoring of customer value.

- Satisfaction
  - a person's judgment of a product's perceived performance in relationship to expectations

Building **Customer Value**, Satisfaction, and Loyalty

Customer Perceived Value

Product benefit		
Services benefit	Total customer **benefit**	
Personnel benefit		Customer perceived **value**
Image benefit		
Monetary cost		
Time cost	Total customer **cost**	
Energy cost		
Psychological cost		

Source: Philip Kotler & Kevin Lane Keller, Marketing Management, 14th ed., Pearson, 2012

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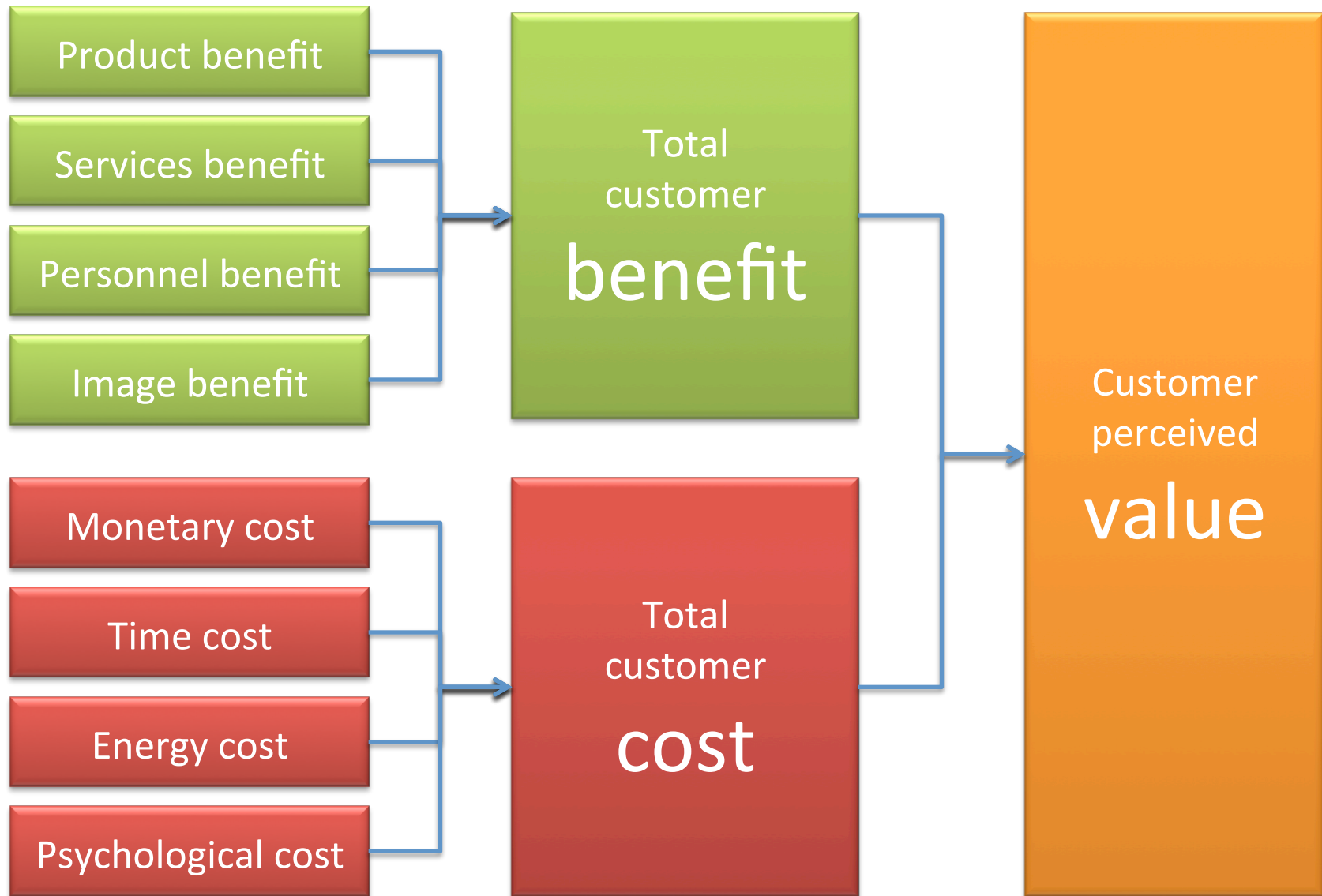
Satisfaction

"a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance (or outcome) to expectations"

Loyalty

**"a deeply held commitment to
rebuy or repatronize
a preferred product or service
in the future
despite situational influences and
marketing efforts having the
potential to cause switching
behavior."**

Customer Perceived Value, Customer Satisfaction, and Loyalty
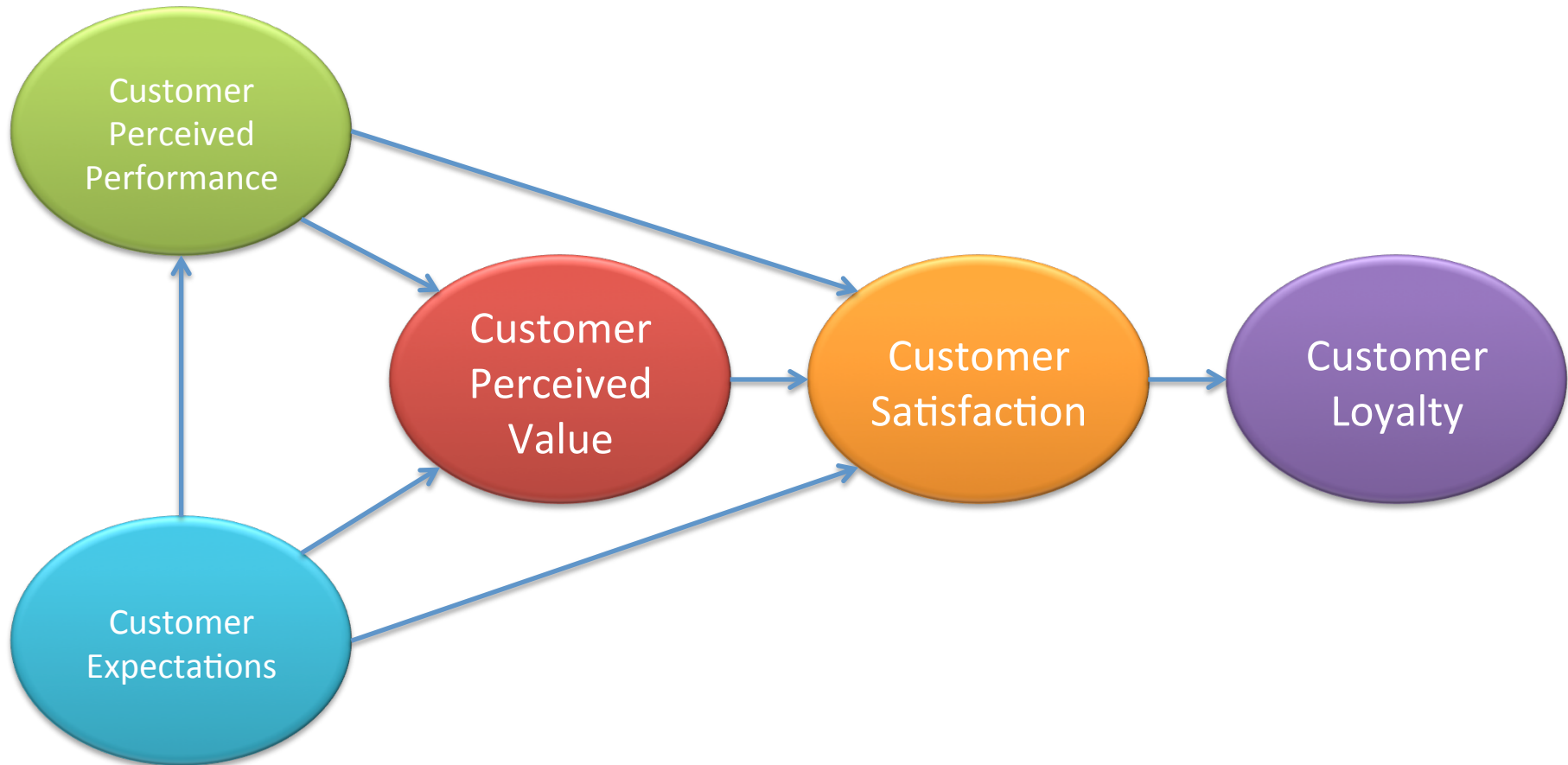
Consumer Behavior Analysis

Analyzing Consumer Markets

- The aim of marketing is to meet and satisfy target customers' needs and wants better than competitors.

- Marketers must have a thorough understanding of
how consumers think, feel, and act
and offer clear value to each and every target consumer.

How consumers think, feel, and act

Model of Consumer Behavior

Marketing Stimuli	Other Stimuli
• Products & Services • Price • Distribution • Communications	• Economic • Technological • Political • Cultural

Psychology
- Motivation
- Perception
- Learning
- Memory

Consumer Characteristics
- Cultural
- Social
- Personal

Buying Decision Process
- Problem Recognition
- Information Search
- Evaluation of Alternatives
- Purchase decision
- Post-purchase behavior

Purchase Decision
- Product choice
- Brand choice
- Dealer choice
- Purchase amount
- Purchase timing
- Payment method

The Evolution of Marketing Management

Marketing Mix Four Ps	Modern Marketing Management Four Ps	Marketing Mix Four Cs
Product	People	Customer solution
Place	Processes	Customer cost
Promotion	Programs	Convenience
Price	Performance	Communication

Marketing 4Ps and 4Cs

Marketing Mix Four Ps	Modern Marketing Management Four Ps	Customer Satisfaction	Social Media
		Marketing Four Cs	**Marketing New Four Ps** by Kim Kadlec (2012)
Product	People	Customer solution	Purpose
Place	Processes	Customer cost	Presence
Promotion	Programs	Convenience	Proximity
Price	Performance	Communication	Partnership

What Influences Consumer Behavior?

- Cultural Factors

- Social Factors

- Personal Factors

Consumer Behavior

- Consumer behavior is the study of how individuals, groups, and organizations select, buy, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and wants.

- Marketers must fully understand both the theory and reality of consumer behavior.

Key Psychological Processes

- Motivation
  - Freud, Maslow, Herzberg
- Perception
  - Perception is the process by which we select, organize, and interpret information inputs to create a meaningful picture of the world
- Learning
- Emotions
- Memory

Maslow's Hierarchy of Needs
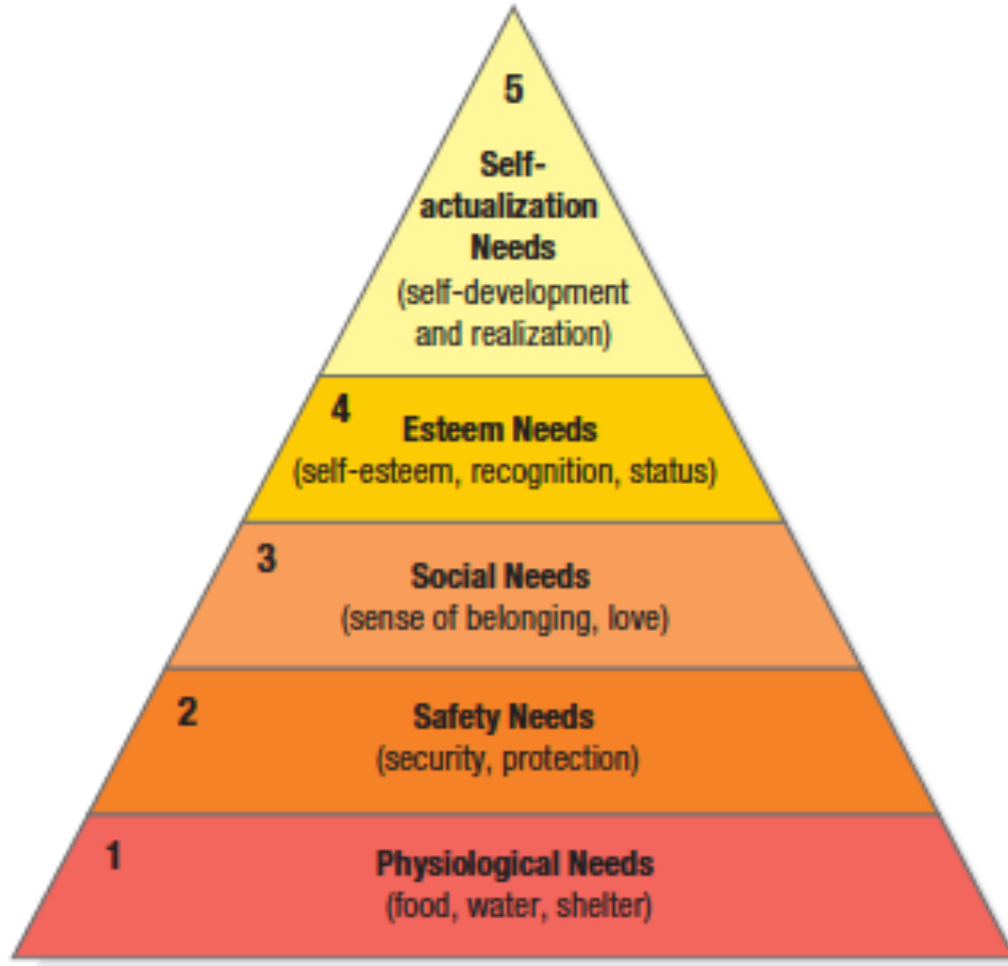
Maslow's hierarchy of human needs
(Maslow, 1943)

Maslow's Hierarchy of Needs

Self-actualization: achieving one's full potential, including creative activities — Self-fulfillment needs

Esteem needs: prestige and feeling of accomplishment — Psychological needs

Belongingness and love needs: intimate relationships, friends

Safety needs: security, safety — Basic needs

Physiological needs: food, water, warmth, rest

Social Media Hierarchy of Needs

Hierarchy of Needs

Maslow's

Social Media

| Self Actualization | Personal Fulfilment | | Optimization & Monetization |

| Esteem | self-esteem, Status, Reputation | building a solid image. Engaging in conversations. Voicing your expertise. | Personal Branding |

| Love & Belonging | Love, Affection, family, & relationships | Connecting with people. Joining Groups. Engaging in conversations. Finding people who share your passion and beliefs. | Community Building |

| Safety & Security | Shelter, protection, Safety & Stability | Choosing the platforms you are comfortable with to voice your opinion. A human tendency to follow what the masses are using – the safe choice! | Structure |

| Physiological | air, sleep, food, hunger, thirst, warmth | Create your social network profile. The need to exist and have a voice! | Existence (Presence) |

Social Media Hierarchy of Needs - by John Antonios

Social Media Hierarchy of Needs

Self actualization — Creativity & sense-making

Esteem — Respect of and by others

Love/Belonging — Friendship and family

Safety — Employment

Physiological — Basic human needs
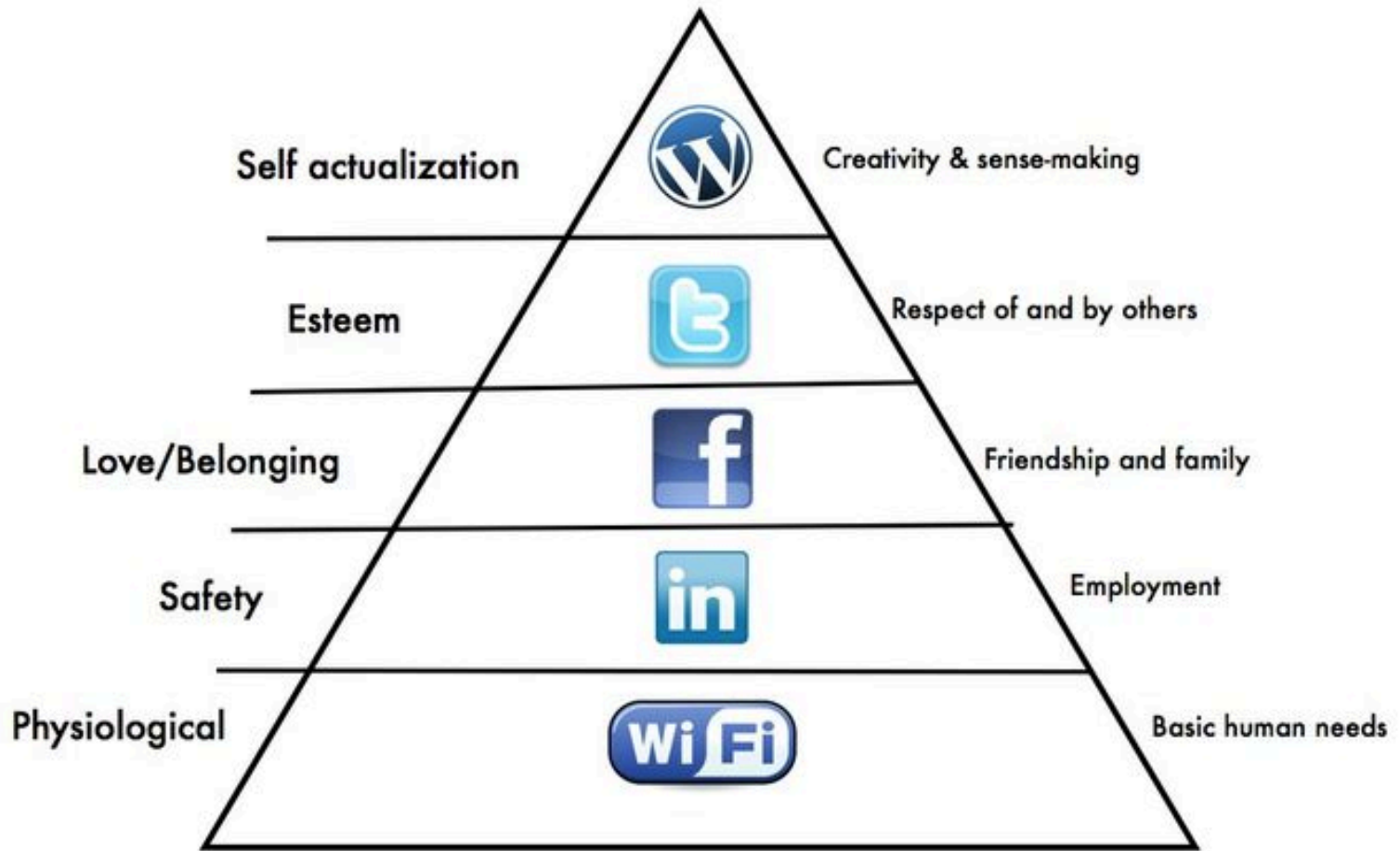
@daveduarte

Factors Affecting Consumer Behavior

CULTURAL

- Culture
- Subculture
- Social Class

SOCIAL

- Reference Group
- Family
- Roles and Status

PERSONAL

- Age & Lifecycle stage
- Occupation
- Economic Circumstances
- Lifestyle
- Personality

PSYCHOLOGICAL

- Motivation
- Perception
- Learning
- Beliefs and Attitudes

BUYER
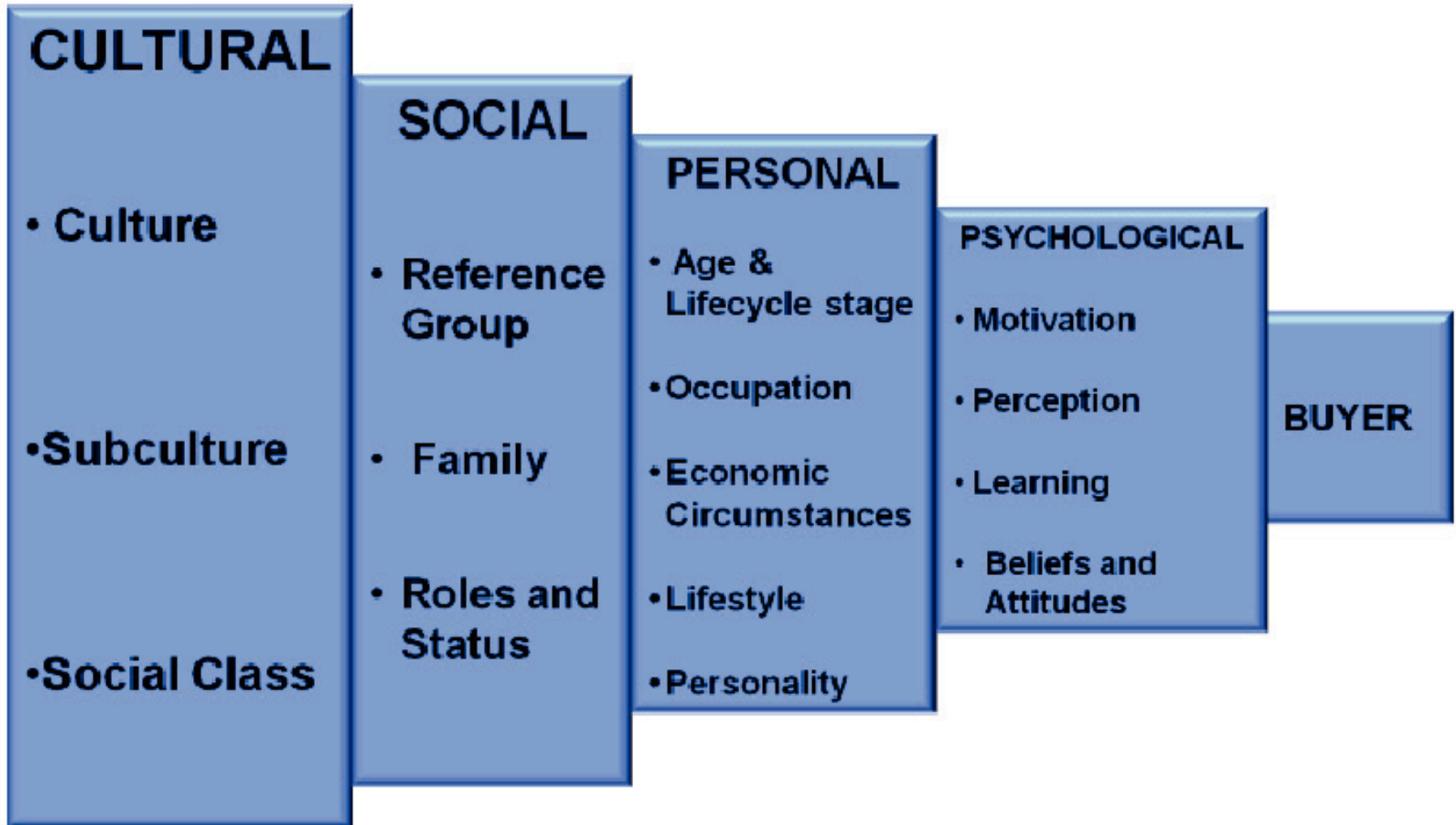
The Social Feedback Cycle
Consumer Behavior on Social Media

Marketer-Generated

User-Generated

Awareness | Consideration | **Purchase** | Use | **Form Opinion** | **Talk**
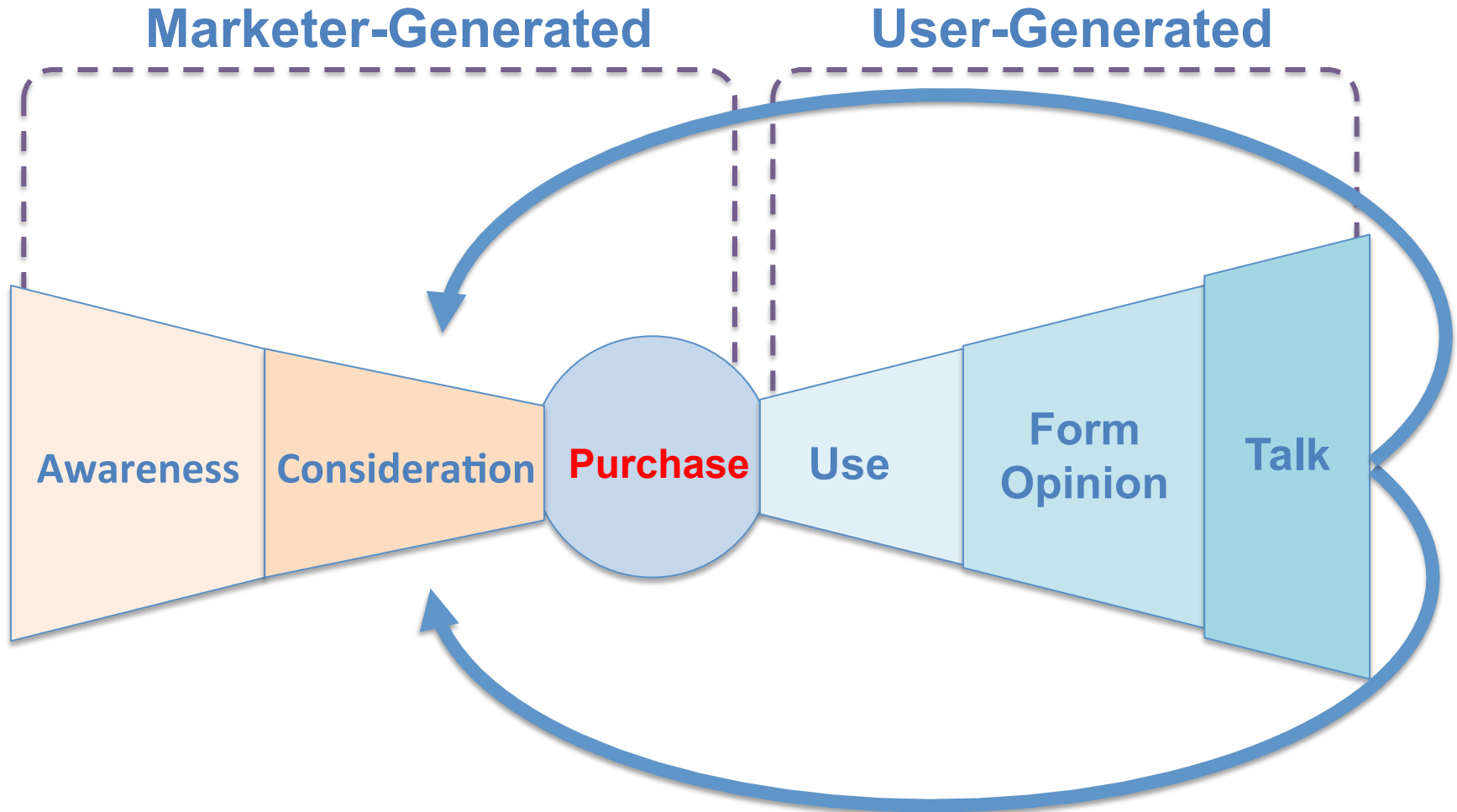
The New Customer Influence Path
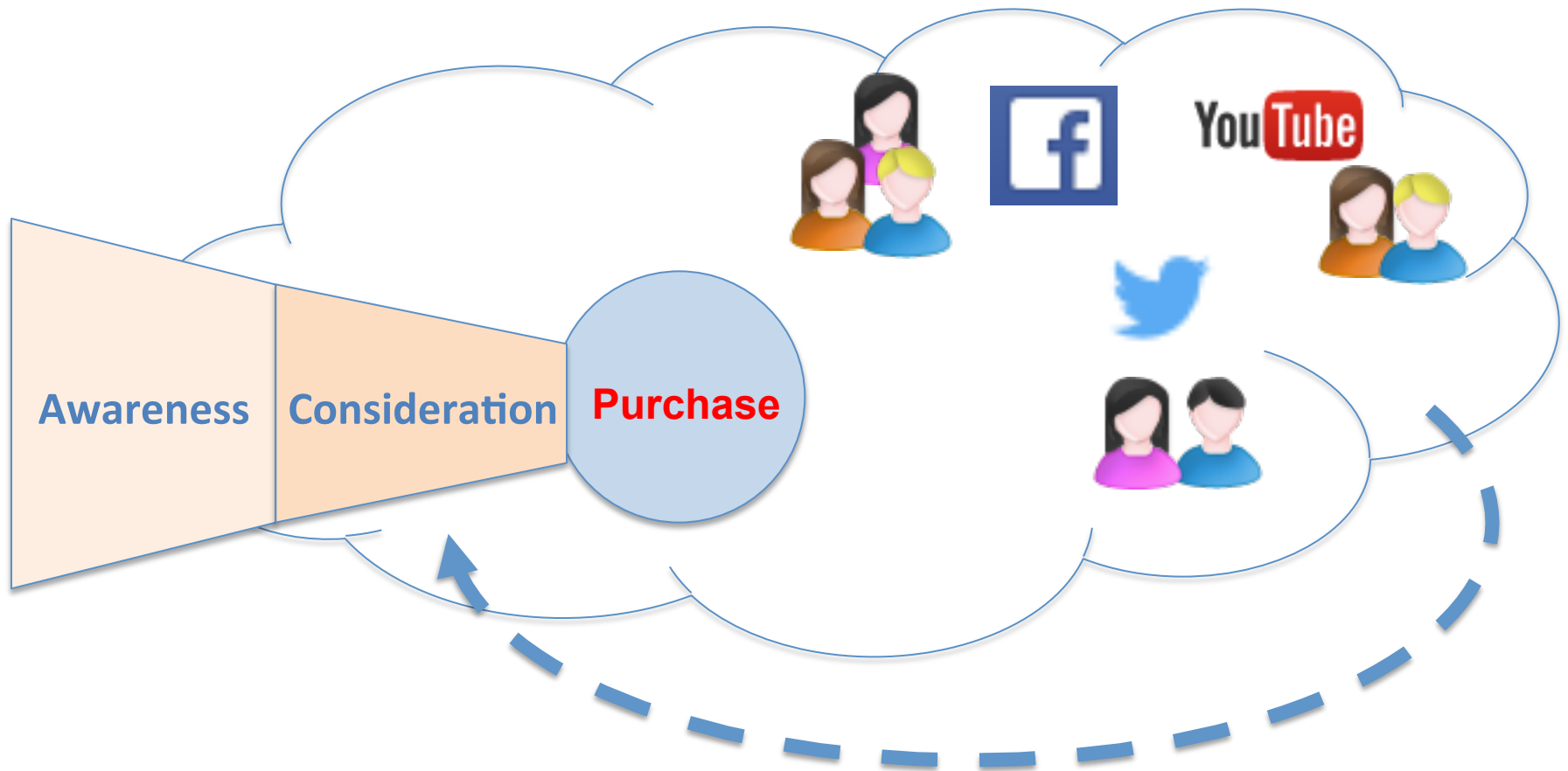
Structured Engagement
Engagement Process on Social Media
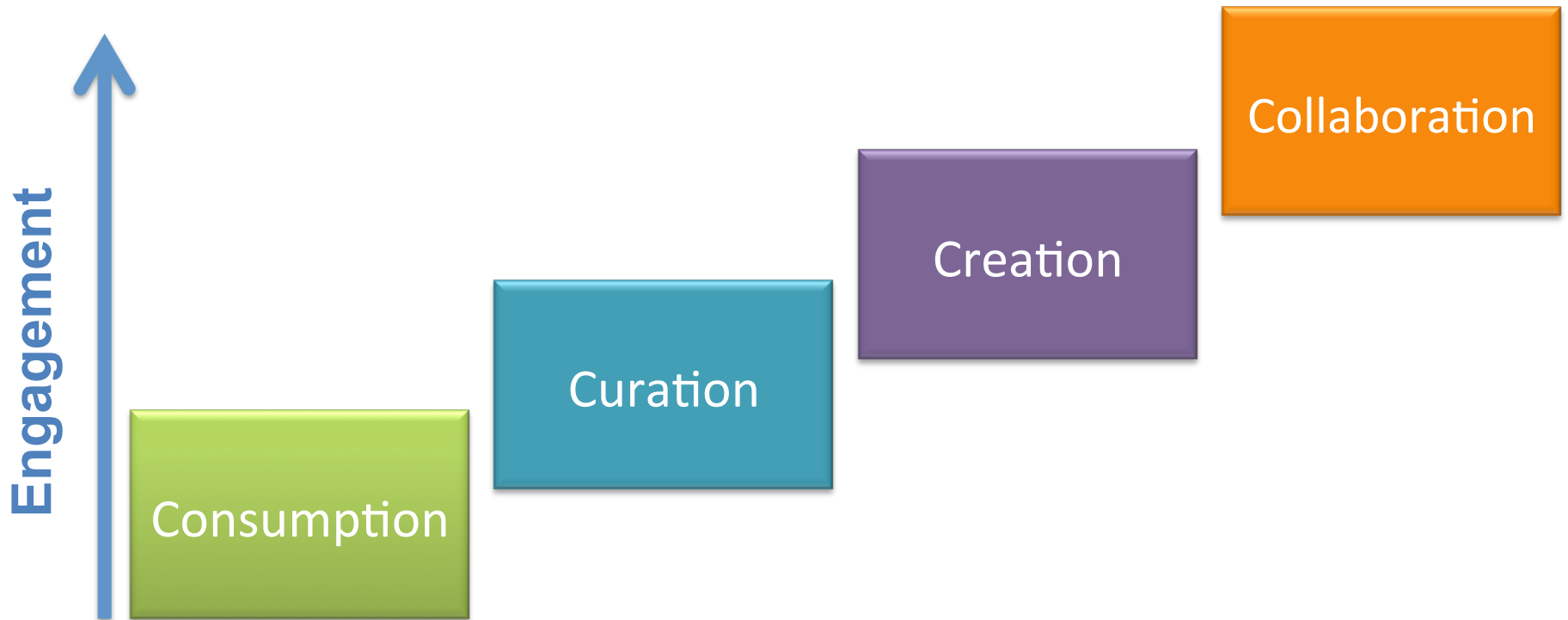
Business model vs. Strategy

- Business models
  - a system that shows how the pieces of a business fit together.
  - an abstraction of a firm's strategy
- Strategy
  - includes competition

Implementing Business Models

Design Business Model		Finance Business Model		Implement Business Model
Management defines and designs a business concept that responds to market circumstances	→	Management works out a financial structure for the business model (e.g. internal funding, venture capital, stock	→	The business model is implemented into business structure, business processes and
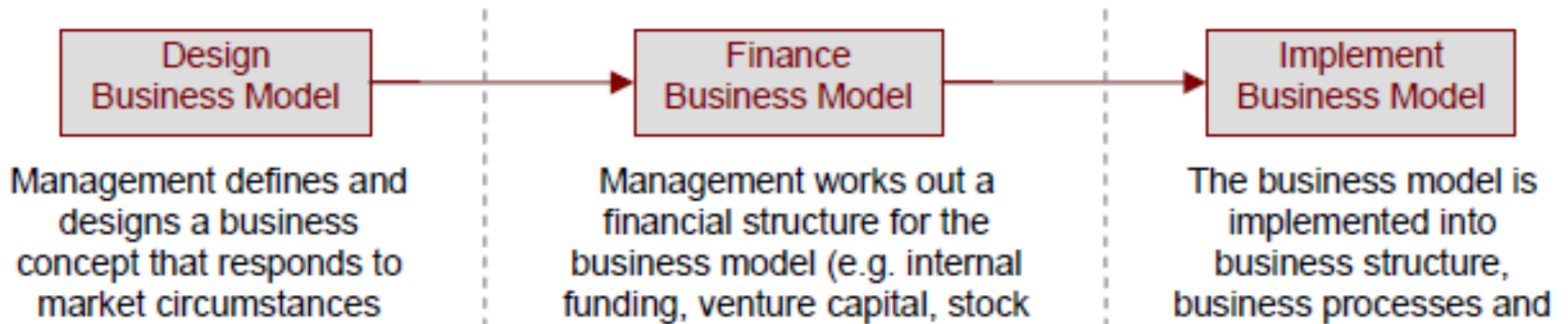
The Business Model's Place in the Firm
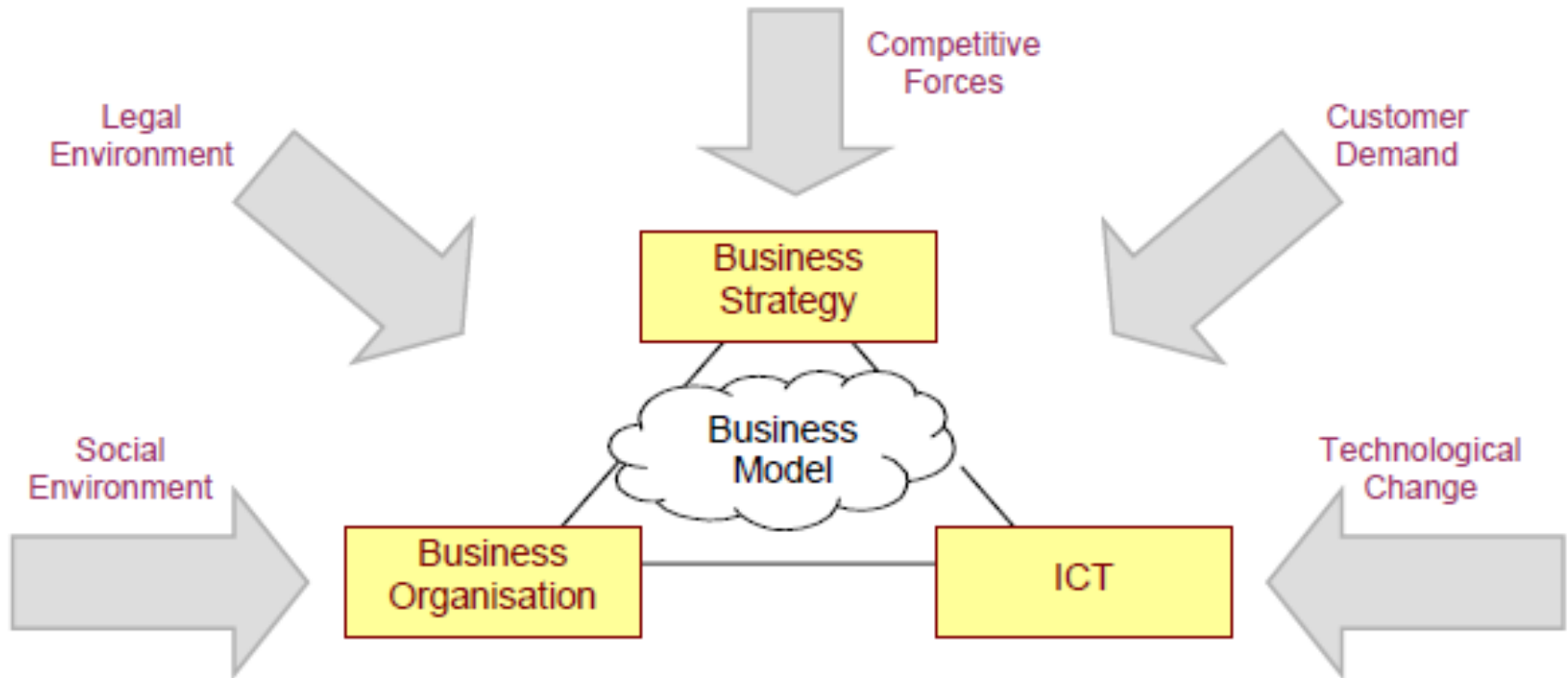
Planning, Changing and Implementing Business Models
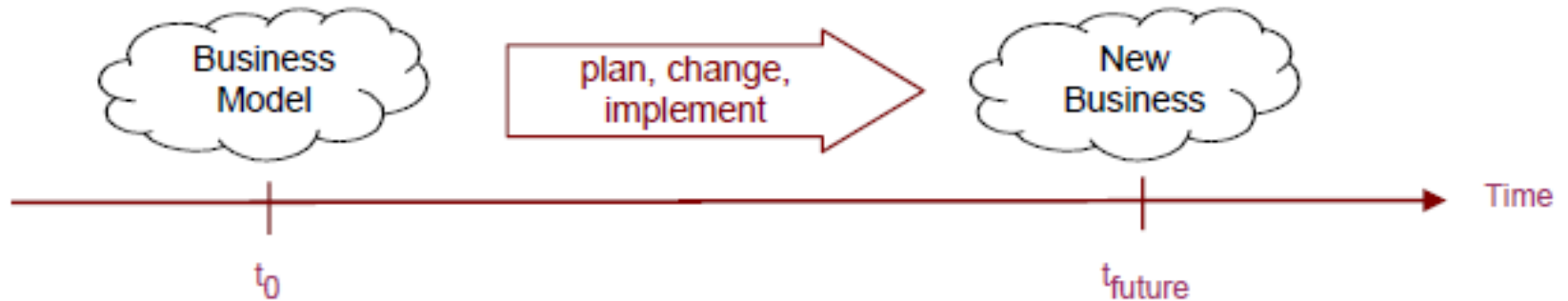
Business Strategy and Information Systems Alignment

Managers are aware of the use of Information Systems to realize goals, exploit opportunities and obtain competitive advantage

Business ➝ **Business Model** ⬅ Information Systems
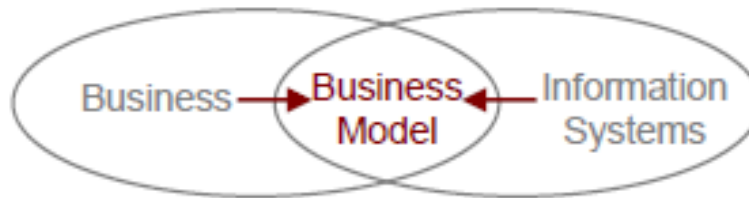
Information Systems support the company's business model and are targeted on areas that are critical to successful business performance

Business and IT/IS Alignment
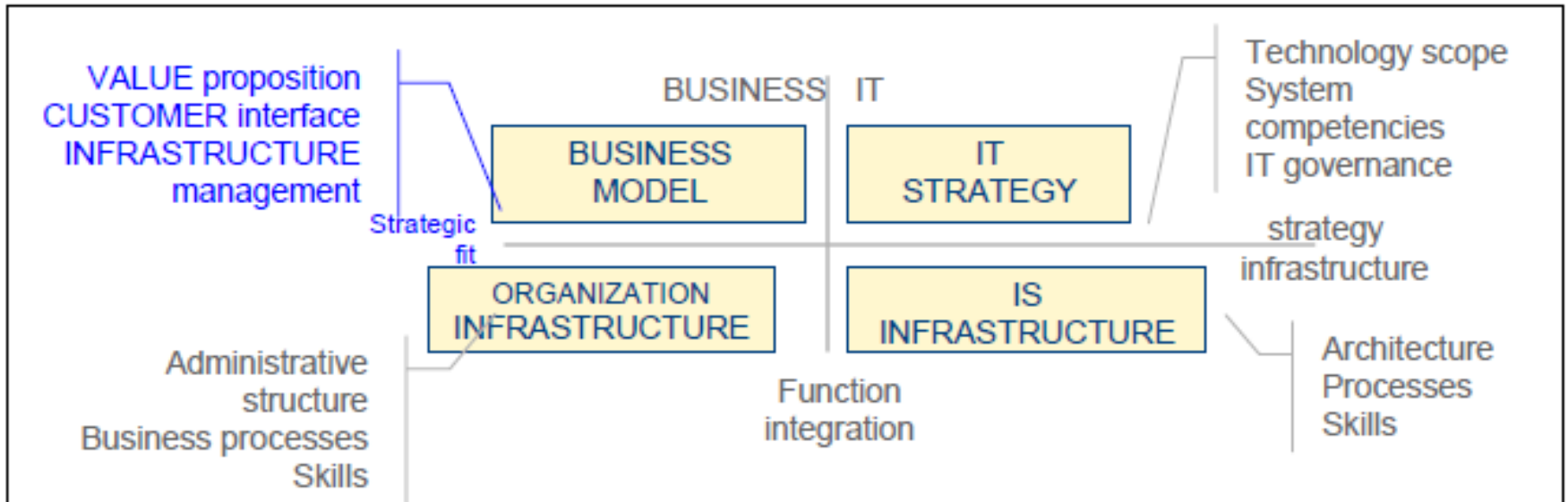
Adapted from [Henderson and Venkatraman 1999]

Impact of Social Media
Social Media Affects Business Functions Differently

Low   Impact of Social Media   High

- Legal
- Finance

- R&D
- Supply Chain

- IT
- Sales
- Marketing
- Service
- Human Resources
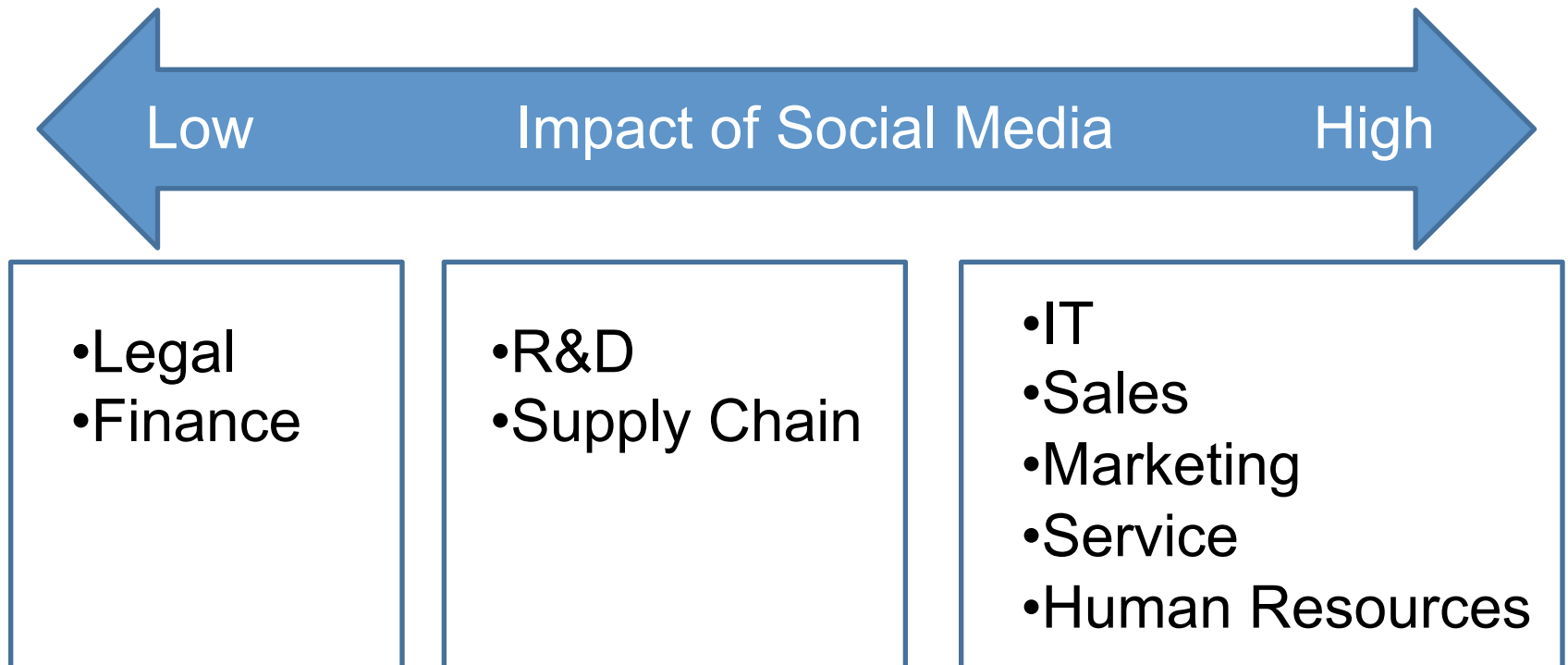
Social Media Management Framework
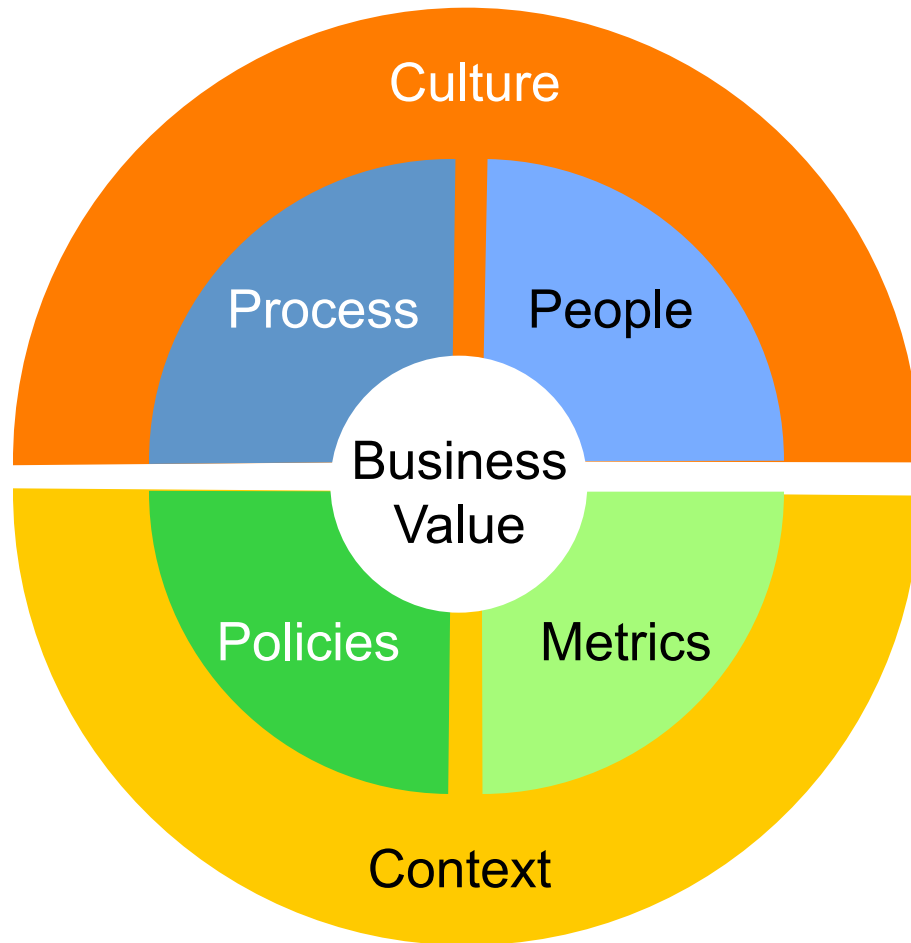
Social Media Management Framework
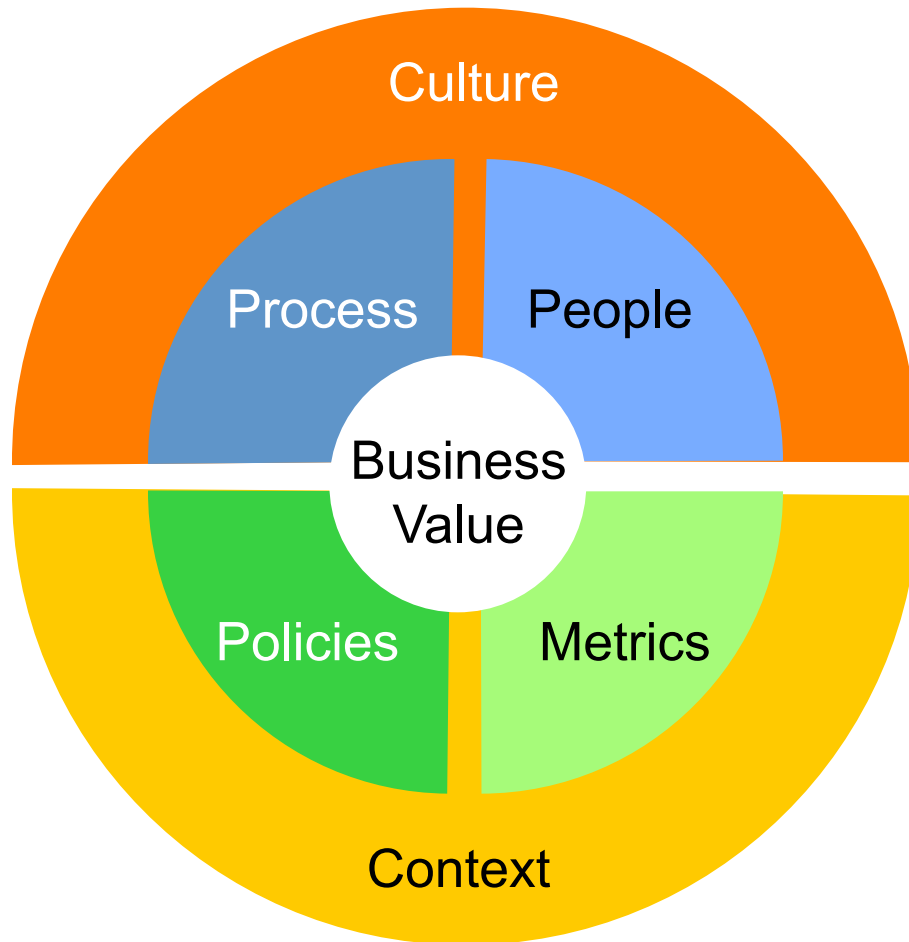
Culture

- **Habits and behaviors**
- **Ways of working**
- **Subcultures**

Context

- **Business environment and objectives**
- **Regulatory environment**

Social Media Management Framework
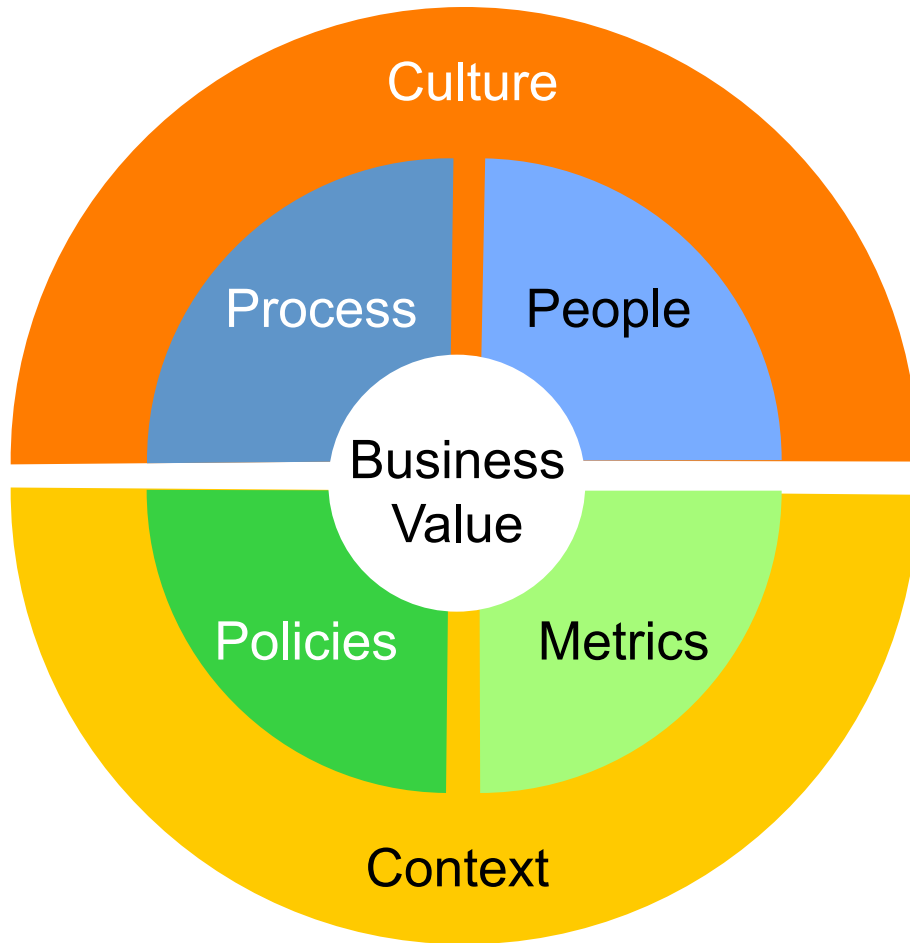
Process

- **Leadership**: Degree to which leadership for social media decisions is formalized and accountability for business outcomes is clear

- **Alignment**: Degree of alignment between various agendas to ensure resources and funds are appropriately allocated

Social Media Management Framework
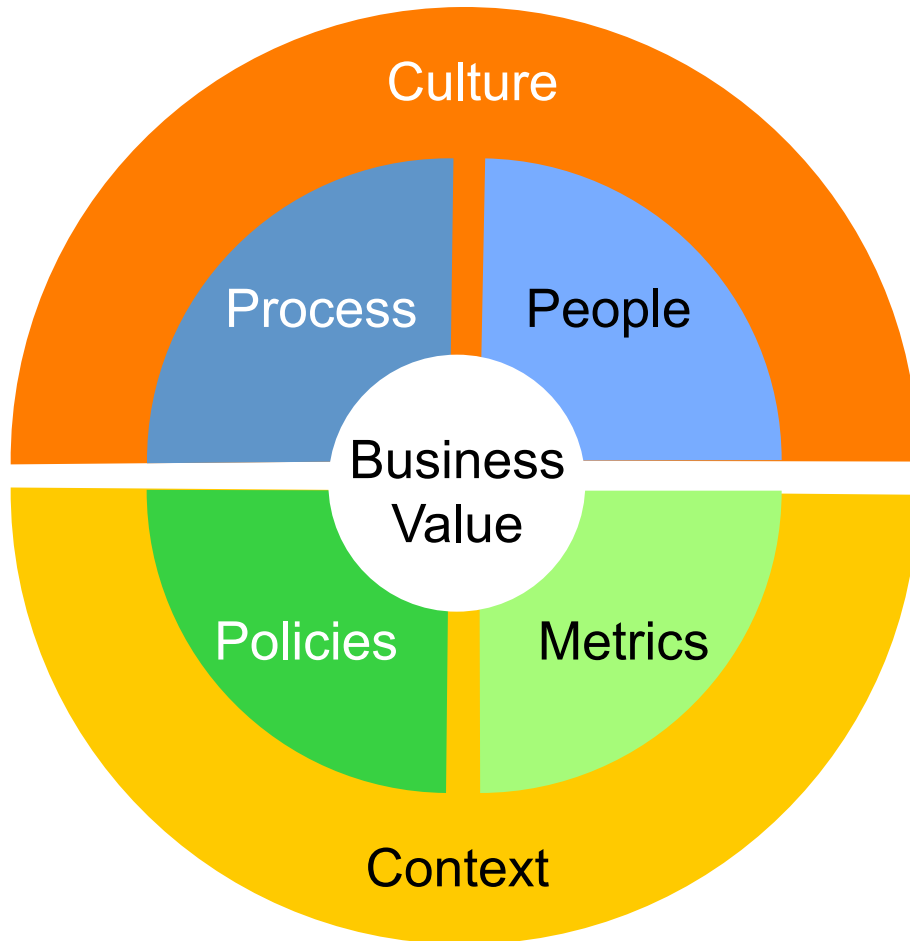
People

- **Training and Development:** Adequacy and accessibility of training and professional development

- **Leverage:** Extent to which best practices are identified, shared and utilized

- **Roles:** Clarity and adequacy of roles and responsibilities

Social Media Management Framework
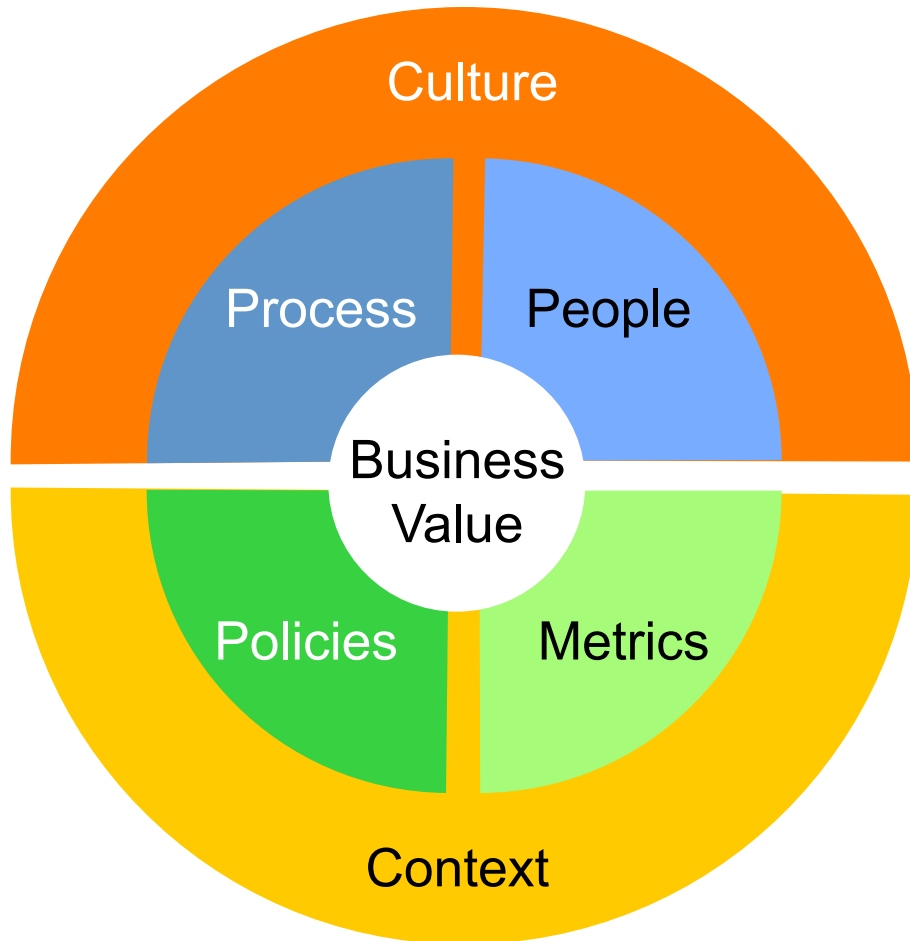
Policies

- **Clarity:**
Degree to which policies clarify boundaries for employees

- **Empowerment:**
Degree to which policies empower employees to achieve business outcomes, consistent with the cultural, regulatory and business realities

- **Differentiation:**
Degree to which policies support differentiation of the organization in the market

Social Media Management Framework
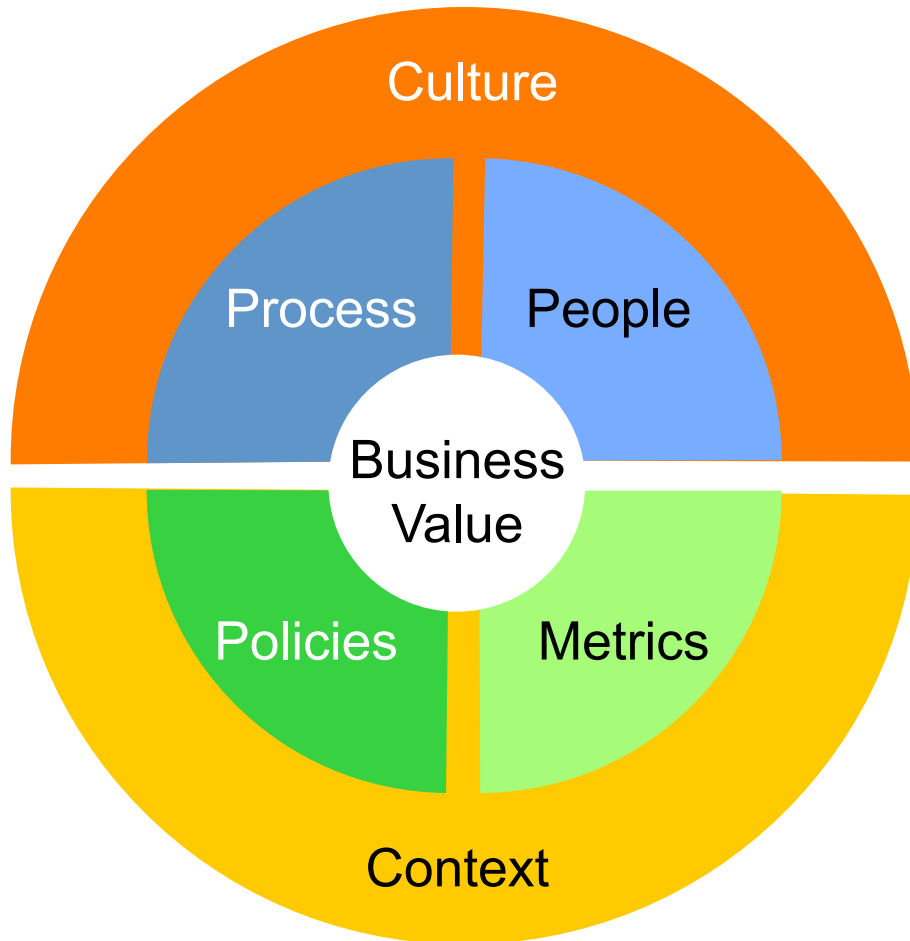
Metrics

- **Resource Management:** Level of visibility into the efficient utilization of social media assets (people and technology) and level of efficiency achieved

- **Performance Management:** Degree to which results are measured and behavior rewarded for success or failure in achieving performance targets

- **Financial Management:** Level to which costs are tracked and controlled, and the degree of ownership by the business for social media costs

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   (Word-of-Mouth in Social Media: Trends Analytics)

Google Trends on Social Media

	social media	social computing	big data

Queries		Top	Rising
social marketing		100	▬▬▬▬
social media marketing		100	▬▬▬▬
social media icons		40	▬▬
social media sites		35	▬▬
social business		35	▬▬
social networking		20	▪
social network		20	▪
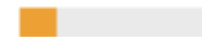
social media **social computing** big data

Queries		Top	Rising
social cloud		100	▬▬▬▬▬
social cloud computing		95	▬▬▬▬▬
social network computing		35	▬
mobile computing		30	▬
social science computing		25	▬
social computing software		15	▪
social computing definition		10	▪

	social media	social computing	**big data**

Queries		Top	Rising
data analytics		100	████████
big data analytics		95	████████
hadoop big data		75	██████░░
hadoop		75	██████░░
google big data		40	███░░░░░
big data ibm		30	██░░░░░░
big data analysis		25	██░░░░░░

Brand

2014 Brand Keys Customer Loyalty Engagement Index

Social Networking Sites
Facebook/Twitter (tie)
YouTube/LinkedIn (tie)
Flickr/ Google Plus (tie)
Tumblr
Instagram
DeviantArt
Orkut
Myspace/Pinterest (tie)
hi5
Tagged
Yelp

Tablets
Amazon/ Apple (tie)
Samsung
Acer/Asus
Google/ Microsoft (tie)
Toshiba
Sony
Dell
Barnes & Noble
Kobo/Lenovo (tie)
LG

Source: http://brandkeys.com/

The World's Most Valuable Brands

Rank ▲	Brand		Brand Value ($bil)	1-Yr Value Change (%)	Brand Revenue ($bil)	Company Advertising ($mil)	Industry
1		**Apple**	104.3	20	156.5	1,100	Technology
2	Microsoft	**Microsoft**	56.7	4	77.8	2,600	Technology
3	Coca-Cola	**Coca-Cola**	54.9	9	23.5	3,342	Beverages
4	IBM	**IBM**	50.7	5	104.5	1,339	Technology
5	Google	**Google**	47.3	26	43.5	772	Technology
6		**McDonald's**	39.4	5	88.3	788	Restaurants
7	GE	**General Electric**	34.2	2	132.1	-	Diversified
8	intel	**Intel**	30.9	-4	53.3	2,000	Technology
9	SAMSUNG	**Samsung**	29.5	53	181.0	4,398	Technology
10	LV	**Louis Vuitton**	28.4	16	9.4	4,211	Luxury

Apple

Market Cap $416.62 B

As of May 2013

+ **Follow** (2095)

At a Glance

Industry: **Computer Hardware**

Founded: **1976**

Country: **United States**

CEO: **Timothy Cook**

Website: www.apple.com

Employees: **72,800**

Sales: **$164.69 B**

Headquarters: **Cupertino, California**

Forbes Lists

#1 World's Most Valuable Brands

#79 Innovative Companies (#26 in 2012)

#15 Global 2000

| #15 in Sales

| #2 in Profit

| #141 in Assets

| #1 in Market value

PROFILE & NEWS   AAPL: Detailed Financial Data

Coca-Cola

Market Cap $173.05 B
As of May 2013

+ Follow (510)

At a Glance

Industry: **Beverages**

Founded: **1892**

Country: **United States**

CEO: **Muhtar Kent**

Website: www.thecoca-colacompany.com

Employees: **150,900**

Sales: **$48.02 B**

Headquarters: **Atlanta, Georgia**

Forbes Lists

#3 World's Most Valuable Brands

#79 Global 2000

| #182 in Sales

| #49 in Profit

| #285 in Assets

| #26 in Market value

PROFILE & NEWS   KO: Detailed Financial Data

Google

Market Cap **$268.44 B**
As of May 2013

+ **Follow** (1709)

At a Glance

Industry: **Computer Services**

Founded: **1998**

Country: **United States**

CEO: **Larry Page**

Website:
www.google.com/corporate/index.html

Employees: **53,861**

Sales: **$50.18 B**

Headquarters: **Mountian View, California**

Forbes Lists

#5 World's Most Valuable Brands

#47 Innovative Companies (#24 In 2012)

#68 Global 2000

#176 in Sales

#38 in Profit

#263 in Assets

#3 in Market value

PROFILE & NEWS   GOOG: Detailed Financial Data

Liana Li Evans

Social Media
Strategies for Engaging in Facebook, Twitter & Other Social Media

Marketing

que biztech

Source: http://www.amazon.com/Social-Media-Marketing-Strategies-Engaging/dp/0789742845

94

The Complete Social Media Community Manager's Guide
Essential Tools and Tactics for Business Success

SYBEX SERIOUS SKILLS. Marty Weintraub and Lauren Litwinka

Big Data Marketing
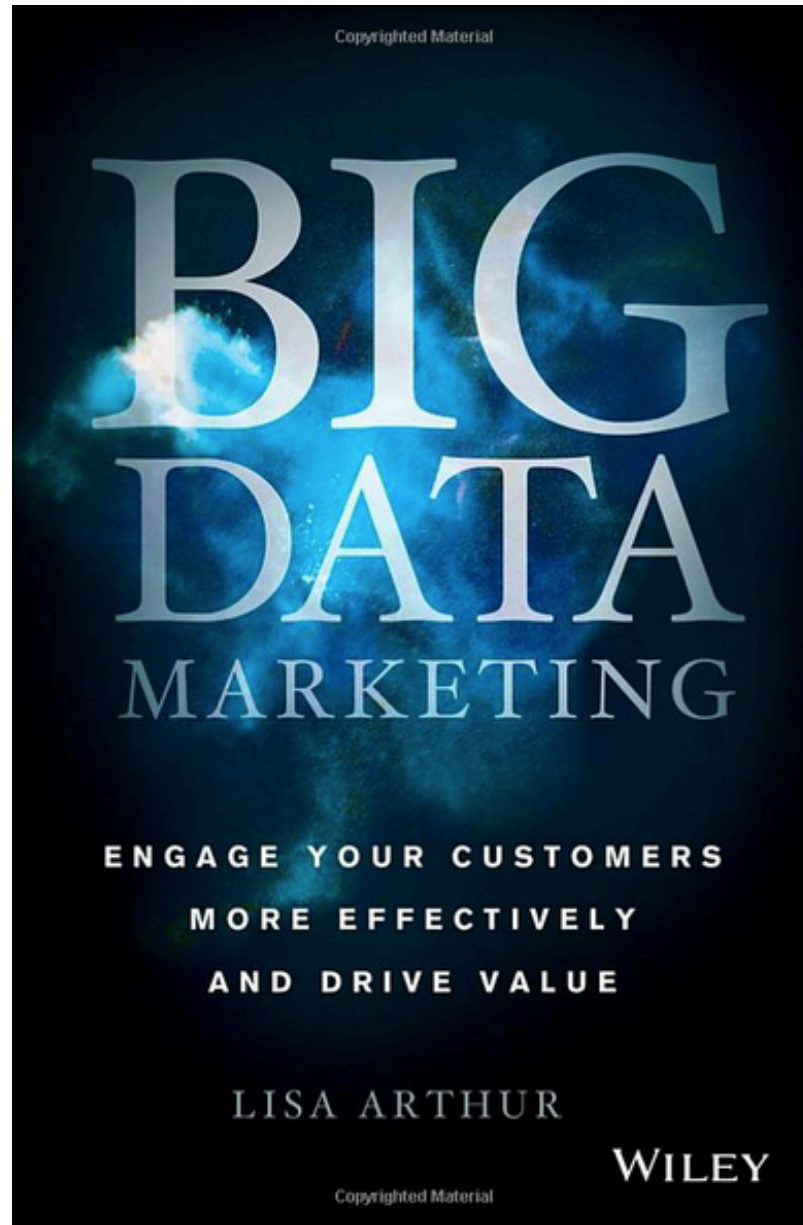
Social Media Management Pyramid

Social Media Marketing For Business

Social Media Landscape 2013

Source: http://www.fredcavazza.net/2013/04/17/social-media-landscape-2013/

SOCIAL LUMAscape
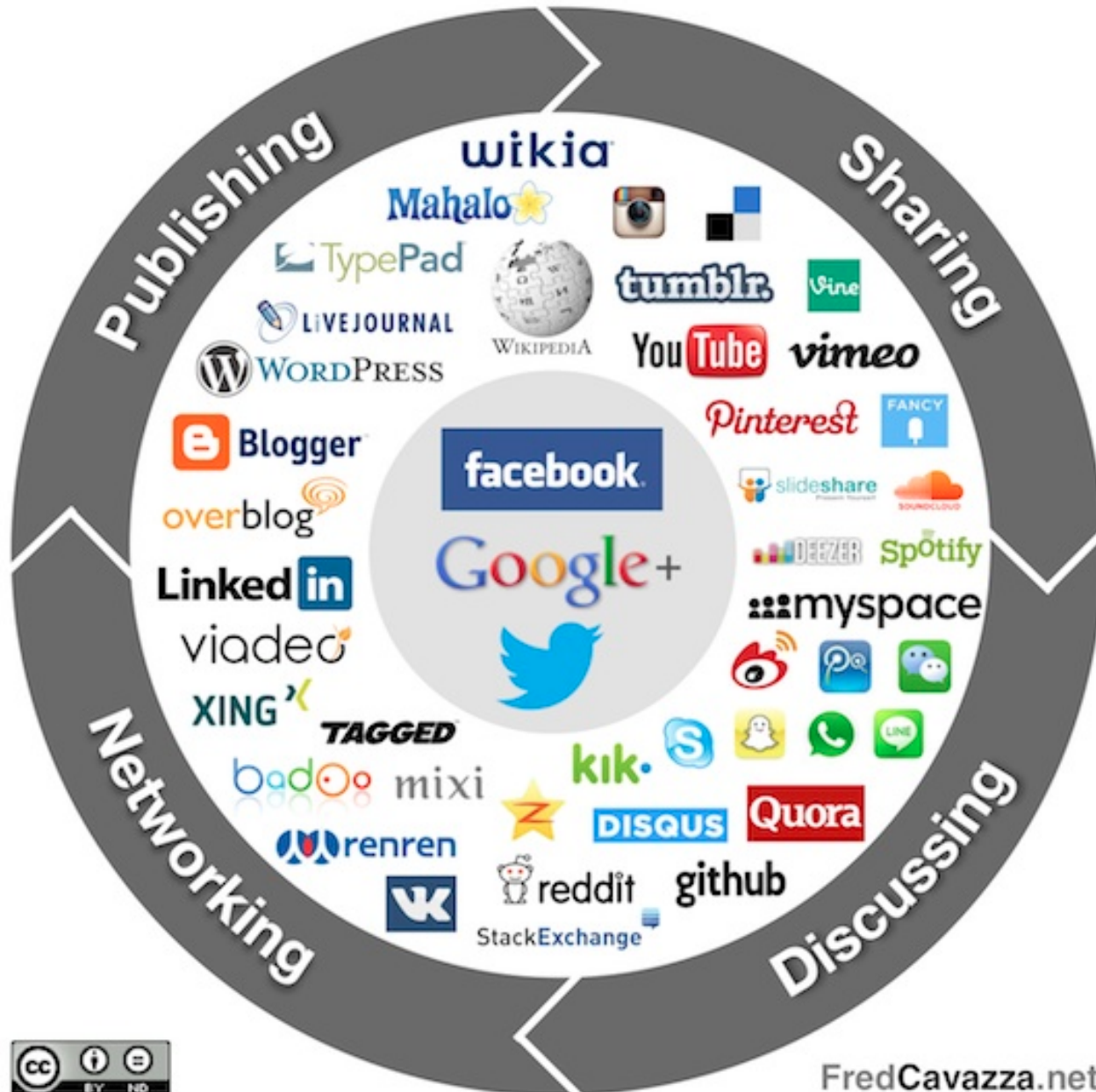
A full-page LUMAscape infographic titled "SOCIAL LUMAscape" mapping companies between MARKETER (left) and CONSUMER (right). Categories include: Social Marketing Management, URL Shorteners, Stream Platforms, Twitter Apps, Social Publishing Platforms, Analytics, Content Curation, Facebook Apps, Social Promotion Platforms, Social Commerce Platforms, Facebook Gaming, Social Advertising Platforms, Social Brand Engagement, Social Ad Networks, Social Data, Social Search & Browsing, Social Intelligence, Social Scoring, Social TV, Social Networks – Other, Social/Mobile Apps & Games, Social Shopping, Content Sharing (Reviews/Q&A/Docs), Social Business Software (External/Customer Facing, Internal/Employee Facing), Blogging Platforms, Community Platforms, Social Referral, Image/Video Sharing, Social Content & Forums, Traditional Publishers, Social Login/Sharing, Gamification.

CMO Social Media Landscape

WEB SITE	CUSTOMER COMMUNICATION	BRAND EXPOSURE	TRAFFIC TO YOUR SITE	SEO
facebook A *social-networking* site where users can add friends, send messages, and build their own profiles	A central and open communication portal, Facebook is the hub through which businesses want to drive social interaction. Positive or negative, companies can use Facebook to get their messages out and to receive customer feedback.	Using pages as a persona allows companies to position their brands on other relevant pages. For example, Starbucks' page itself can now post on large coffee-lovers' pages.	For many Web sites, Facebook has emerged as one of the top traffic sources. While the "viral potential" is lower on Facebook than others, nothing is more consistent at driving a steady flow of traffic to every message or post.	Google and Bing have both indicated that they are using "social signals" as part of their ranking algorithms, pointing to Facebook and Twitter, in particular. While the links themselves are "no-follow," the search benefits exist, especially in instances where "Query Deserves Freshness."
twitter A *microblogging* site that enables users to send "tweets," or messages of 140 characters or less	Twitter is the ultimate outbound messaging tool. Inbound customer communications are quick and to the point, allowing for simple monitoring and management of conversations.	It isn't what you're saying on Twitter that exposes your brand. It's what you can get others to say about you that has the real impact. Getting retweets and interactions can do more for brand exposure than any other social site.	The prevalence of noise and spam have reduced Twitter's ability to send direct traffic. However, it is an exceptional tool for assisting with traffic generation from other sites, like Digg, StumbleUpon, and Facebook.	As with Facebook, Twitter has been singled out as a component of Google's and Bing's social component. The links are "nofollow," but the social component is real and expected to become more prominent over time.
flickr An *image-and-video-* hosting Web site where community members can share and comment on media	As a PR tool, Flickr gives company-sponsored events a pictoral home that can be more professional and better organized than on other social image-sharing sites (including Facebook).	Flickr's improved search rankings and integration with other social sites makes it the high-quality image posting service of choice. Bulk images should go on Facebook. Quality images should go on Flickr.	Even if you get tens of thousands of visits to a photo with your URL hyperlinked below, the click-through rates are among the lowest around. All links are "nofollow."	Flickr is very much indexed in search engines and passes links and page rank. It is also a major part of Google's and Bing's social search component—photos liked by individuals can be seen more prevalently in their friends' searches.
Linked in A *social-networking* site for business professionals	Not the primary focus, but you can potentially engage customers by encouraging employees to answer industry-related questions people post and become known as an expert in the field.	LinkedIn is great for personal branding and showing the professional prowess in your organization. Encourage employees to maintain complete profiles to show off your solid team.	LinkedIn continues to improve its standing in traffic generation by encouraging sharing through every new feature it has rolled out during the past year. It isn't as consistent as Facebook or as viral as Digg, but it's getting better.	Very high page rank, almost guaranteed to be a ranking on the first page of search results, especially for your individual employee names. High SEO value for vanity search for your name, but that is about it.
You Tube A *video-sharing* Web site where users can share and upload new videos	Whether you seek to entertain, inform, or both, video is a powerful channel for quickly responding to customer complaints and showing your social-media savvy. It is also the best venue for reputation "repair" if things go wrong.	Your YouTube branding is second only to Facebook when people are researching your company. Be certain that the messages are frequent and that they align with what you want as your perceived company persona.	YouTube is growing in the traffic-generation segment, particularly through in-video messaging through annotations and URL branding. Clicks on content links are still minimal, but even those numbers have seen a recent rise.	Very good for building links back to your site because the videos rank very well. YouTube channels are a tried-and-true way to send some really good exposure and SEO back to your brand.

GOOD!

OKAY!

BAD!

Source: http://www.cmo.com/sites/default/files/CMOcom-SocialMediaLandscape2011.pdf

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MARKETING TECHNOLOGY LUMAscape

Source: http://www.lumapartners.com/lumascapes/marketing-technology-lumascape/

chiefmartec.com Marketing Technology Landscape — January 2014

by Scott Brinker @chiefmartec http://chiefmartec.com

Source: http://chiefmartec.com/2014/01/marketing-technology-landscape-supergraphic-2014/

Outline

1. 社群網路商業模式
   (Social Media Business Model)

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   (Word-of-Mouth in Social Media: Trends Analytics)

Understanding customers needs and wants

Social Computing

- Social Computing
  - Business Computing
- Business Application
  - Content
  - Context
- Social Media Monitoring/Analysis
- Social Network Analysis

Word-of-mouth
on the Social media

- Personal experiences and opinions about anything in reviews, forums, blogs, micro-blog, Twitter.

- Posting at social networking sites, e.g., Facebook

- Comments about articles, issues, topics, reviews.

Social media + beyond

- Global scale
  - No longer – one's circle of friends.

- Organization internal data
  - Customer feedback from emails, call center

- News and reports
  - Opinions in news articles and commentaries

Social Media and the Voice of the Customer

- Listen to the Voice of the Customer (VoC)
  - Social media can give companies a torrent of highly valuable customer feedback.
  - Such input is largely free
  - Customer feedback issued through social media is qualitative data, just like the data that market researchers derive from focus group and in-depth interviews
  - Such qualitative data is in digital form – in text or digital video on a web site.

Listen and Learn
Text Mining for VoC

- Categorization
  - Understanding what topics people are talking or writing about in the unstructured portion of their feedback.

- Sentiment Analysis
  - Determining whether people have positive, negative, or neutral views on those topics.

Opinion Mining and Sentiment Analysis

- Mining opinions which indicate positive or negative sentiments

- Analyzes people's opinions, appraisals, attitudes, and emotions toward entities, individuals, issues, events, topics, and their attributes.

Opinion Mining and Sentiment Analysis

- Computational study of
opinions,
sentiments,
subjectivity,
evaluations,
attitudes,
appraisal,
affects,
views,
emotions,
ets., expressed in text.
  - Reviews, blogs, discussions, news, comments, feedback, or any other documents

Terminology

- Sentiment Analysis
  is more widely used in industry

- Opinion mining / Sentiment Analysis
  are widely used in academia

- Opinion mining / Sentiment Analysis
  can be used interchangeably

Example of Opinion: review segment on iPhone

"I bought an iPhone a few days ago.

It was such a nice phone.

The touch screen was really cool.

The voice quality was clear too.

However, my mother was mad with me as I did not tell her before I bought it.

She also thought the phone was too expensive, and wanted me to return it to the shop. ... "

Source: Bing Liu (2011) , "Web Data Mining: Exploring Hyperlinks, Contents, and Usage Data," Springer, 2nd Edition,

Example of Opinion: review segment on iPhone

"(1) I bought an iPhone a few days ago.

(2) It was such a **nice** phone.

(3) The touch screen was really **cool**.

+Positive Opinion

(4) The voice quality was **clear** too.

(5) However, my mother was mad with me as I did not tell her before I bought it.

(6) She also thought the phone was too **expensive**, and wanted me to return it to the shop. … "

-Negative Opinion

Source: Bing Liu (2011) , "Web Data Mining: Exploring Hyperlinks, Contents, and Usage Data," Springer, 2nd Edition,

Why are opinions important?

- "Opinions" are key influencers of our behaviors.

- Our beliefs and perceptions of reality are conditioned on how others see the world.

- Whenever we need to make a decision, we often seek out the opinion of others.
  In the past,
  - Individuals
    - Seek opinions from friends and family
  - Organizations
    - Use surveys, focus groups, opinion pools, consultants

Applications of Opinion Mining

- Businesses and organizations
  - Benchmark products and services
  - Market intelligence
    - Business spend a huge amount of money to find consumer opinions using consultants, surveys, and focus groups, etc.
- Individual
  - Make decision to buy products or to use services
  - Find public opinions about political candidates and issues
- Ads placements: Place ads in the social media content
  - Place an ad if one praises a product
  - Place an ad from a competitor if one criticizes a product
- Opinion retrieval: provide general search for opinions.

Research Area of Opinion Mining

- Many names and tasks with difference objective and models
  - Sentiment analysis
  - Opinion mining
  - Sentiment mining
  - Subjectivity analysis
  - Affect analysis
  - Emotion detection
  - Opinion spam detection

Existing Tools

("Social Media Monitoring/Analysis")

- Radian 6
- Social Mention
- Overtone OpenMic
- Microsoft Dynamics Social Networking Accelerator
- SAS Social Media Analytics
- Lithium Social Media Monitoring
- RightNow Cloud Monitor

Word-of-mouth
Voice of the Customer

- 1. Attensity
  - Track social sentiment across brands and competitors
  - http://www.attensity.com/home/

- 2. Clarabridge
  - Sentiment and Text Analytics Software
  - http://www.clarabridge.com/

Attensity: Track social sentiment across brands and competitors
http://www.attensity.com/

http://www.youtube.com/watch?v=4goxmBEg2Iw#!

Clarabridge: Sentiment and Text Analytics Software
http://www.clarabridge.com/

http://www.youtube.com/watch?v=IDHudt8M9P0

http://www.radian6.com/

http://www.youtube.com/watch?feature=player_embedded&v=8i6Exg3Urg0

http://www.sas.com/software/customer-intelligence/social-media-analytics/

http://www.tweetfeel.com

http://tweetsentiments.com/

Sentiment Analysis

- Sentiment
  - A thought, view, or attitude, especially one based mainly on emotion instead of reason

- Sentiment Analysis
  - opinion mining
  - use of natural language processing (NLP) and computational techniques to automate the extraction or classification of sentiment from typically unstructured text

Applications of Sentiment Analysis

- Consumer information
  - Product reviews
- Marketing
  - Consumer attitudes
  - Trends
- Politics
  - Politicians want to know voters' views
  - Voters want to know policitians' stances and who else supports them
- Social
  - Find like-minded individuals or communities

Sentiment detection

- How to interpret features for sentiment detection?
  - Bag of words (IR)
  - Annotated lexicons (WordNet, SentiWordNet)
  - Syntactic patterns
- Which features to use?
  - Words (unigrams)
  - Phrases/n-grams
  - Sentences

Problem statement of Opinion Mining

- Two aspects of abstraction
  - Opinion definition
    - What is an opinion?
    - What is the structured definition of opinion?
  - Opinion summarization
    - Opinion are subjective
      - An opinion from a single person (unless a VIP) is often not sufficient for action
    - We need opinions from many people, and thus opinion summarization.

Abstraction (1) : what is an opinion?

- Id: **Abc123** on **5-1-2008** "*I bought an iPhone a few days ago. It is such a nice phone. The touch screen is really cool. The voice quality is clear too. It is much better than my old Blackberry, which was a terrible phone and so difficult to type with its tiny keys. However, my mother was mad with me as I did not tell her before I bought the phone. She also thought the phone was too expensive, …*"

- One can look at this review/blog at the
  - Document level
    - Is this review + or -?
  - Sentence level
    - Is each sentence + or -?
  - Entity and feature/aspect level

Entity and aspect/feature level

- Id: **Abc123** on **5-1-2008** "*I bought an iPhone a few days ago. It is such a nice phone. The touch screen is really cool. The voice quality is clear too. It is much better than my old Blackberry, which was a terrible phone and so difficult to type with its tiny keys. However, my mother was mad with me as I did not tell her before I bought the phone. She also thought the phone was too expensive, …*"

- What do we see?
  - Opinion targets: entities and their features/aspects
  - Sentiments: positive and negative
  - Opinion holders: persons who hold the opinions
  - Time: when opinion are expressed

Two main types of opinions

- Regular opinions: Sentiment/Opinion expressions on some target entities

  – Direct opinions: sentiment expressions on one object:

    - "The touch screen is really cool."
    - "The picture quality of this camera is great"

  – Indirect opinions: comparisons, relations expressing similarities or differences (objective or subjective) of more than one object

    - "phone X is cheaper than phone Y." (objective)
    - "phone X is better than phone Y." (subjective)

- Comparative opinions: comparisons of more than one entity.

  – "iPhone is better than Blackberry."

Subjective and Objective

- Objective
  - An objective sentence expresses some factual information about the world.
  - "I returned the phone yesterday."
  - Objective sentences can implicitly indicate opinions
    - "The earphone broke in two days."
- Subjective
  - A subjective sentence expresses some personal feelings or beliefs.
  - "The voice on my phone was not so clear"
  - Not every subjective sentence contains an opinion
    - "I wanted a phone with good voice quality"
- ➔ Subjective analysis

Sentiment Analysis vs. Subjectivity Analysis

Sentiment Analysis	Subjectivity Analysis
Positive	Subjective
Negative	
Neutral	Objective

A (regular) opinion

- Opinion (a restricted definition)
  – An opinion (regular opinion) is simply a positive or negative sentiment, view, attitude, emotion, or appraisal about an entity or an aspect of the entity from an opinion holder.

- Sentiment orientation of an opinion

  – Positive, negative, or neutral (no opinion)
  – Also called:
    - Opinion orientation
    - Semantic orientation
    - Sentiment polarity

Entity and aspect

- Definition of Entity:
  - An *entity e* is a product, person, event, organization, or topic.
  - e is represented as
    - A hierarchy of components, sub-components.
    - Each node represents a components and is associated with a set of attributes of the components

- An opinion can be expressed on any node or attribute of the node

- Aspects(features)
  - represent both components and attribute

Entity and aspect
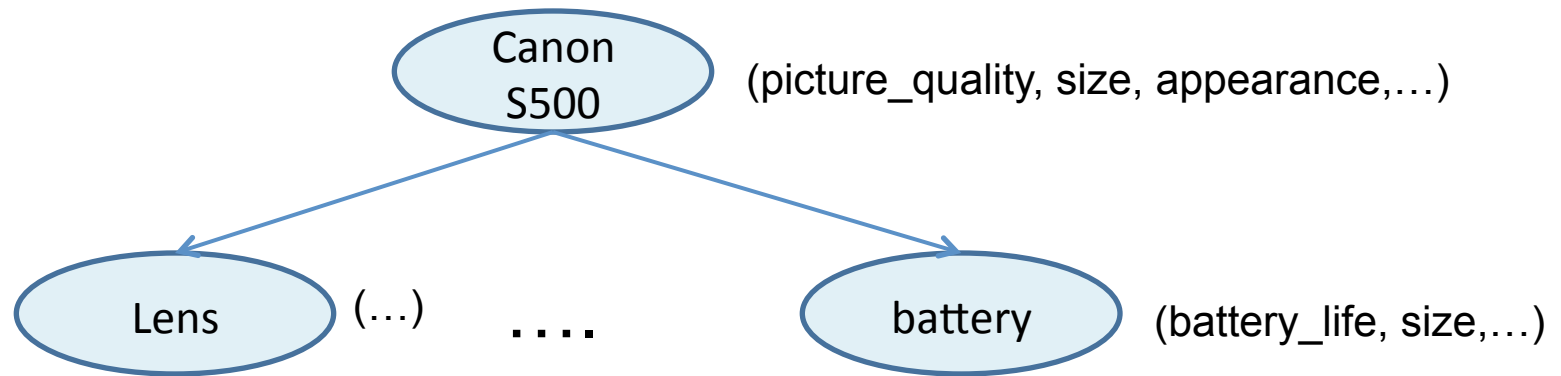
Canon S500 (picture_quality, size, appearance,…)

Lens (…)   ….   battery (battery_life, size,…)

Opinion definition

- An opinion is a quintuple
  $(e_j, a_{jk}, so_{ijkl}, h_i, t_l)$
  where

  - e_j is a target entity.

  - a_{jk} is an aspect/feature of the entity e_j .

  - so_{ijkl} is the sentiment value of the opinion from the opinion holder on feature of entity at time.
    so_{ijkl} is +ve, -ve, or neu, or more granular ratings

  - h_i is an opinion holder.

  - t_l is the time when the opinion is expressed.

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  - h_i is an opinion holder.

  - t_l is the time when the opinion is expressed.

- (e_j, a_{jk}) is also called opinion target

Terminologies

- Entity: object
- Aspect: feature, attribute, facet
- Opinion holder: opinion source

- Topic: entity, aspect

- Product features, political issues

Subjectivity and Emotion

- **Sentence subjectivity**
  - An objective sentence presents some factual information, while a subjective sentence expresses some personal feelings, views, emotions, or beliefs.

- **Emotion**
  - Emotions are people's subjective feelings and thoughts.

Emotion

- Six main emotions
  - Love
  - Joy
  - Surprise
  - Anger
  - Sadness
  - Fear

Abstraction (2): opinion summary

- With a lot of opinions, a summary is necessary.
  - A multi-document summarization task
- For factual texts, summarization is to select the most important facts and present them in a sensible order while avoiding repetition
  - 1 fact = any number of the same fact
- But for opinion documents, it is different because opinions have a quantitative side & have targets
  - 1 opinion <> a number of opinions
  - Aspect-based summary is more suitable
  - Quintuples form the basis for opinion summarization

An aspect-based opinion summary

Cellular phone 1:

    Aspect: **GENERAL**

        Positive: 125   \<individual review sentences\>

        Negative: 7   \<individual review sentences\>

    Aspect: **Voice quality**

        Positive: 120   \<individual review sentences\>

        Negative: 8   \<individual review sentences\>

    Aspect: **Battery**

        Positive: 80   \<individual review sentences\>

        Negative: 12   \<individual review sentences\>

…

Visualization of aspect-based summaries of opinions
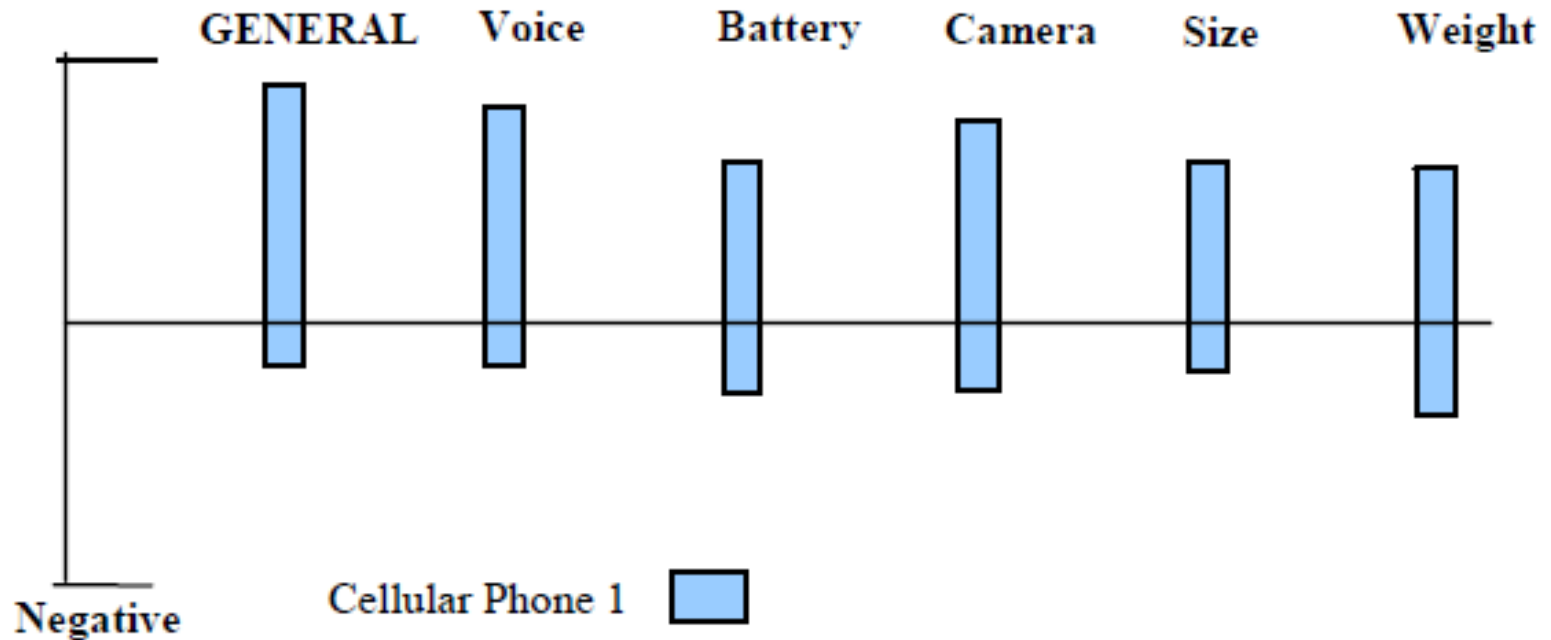
Visualization of aspect-based summaries of opinions
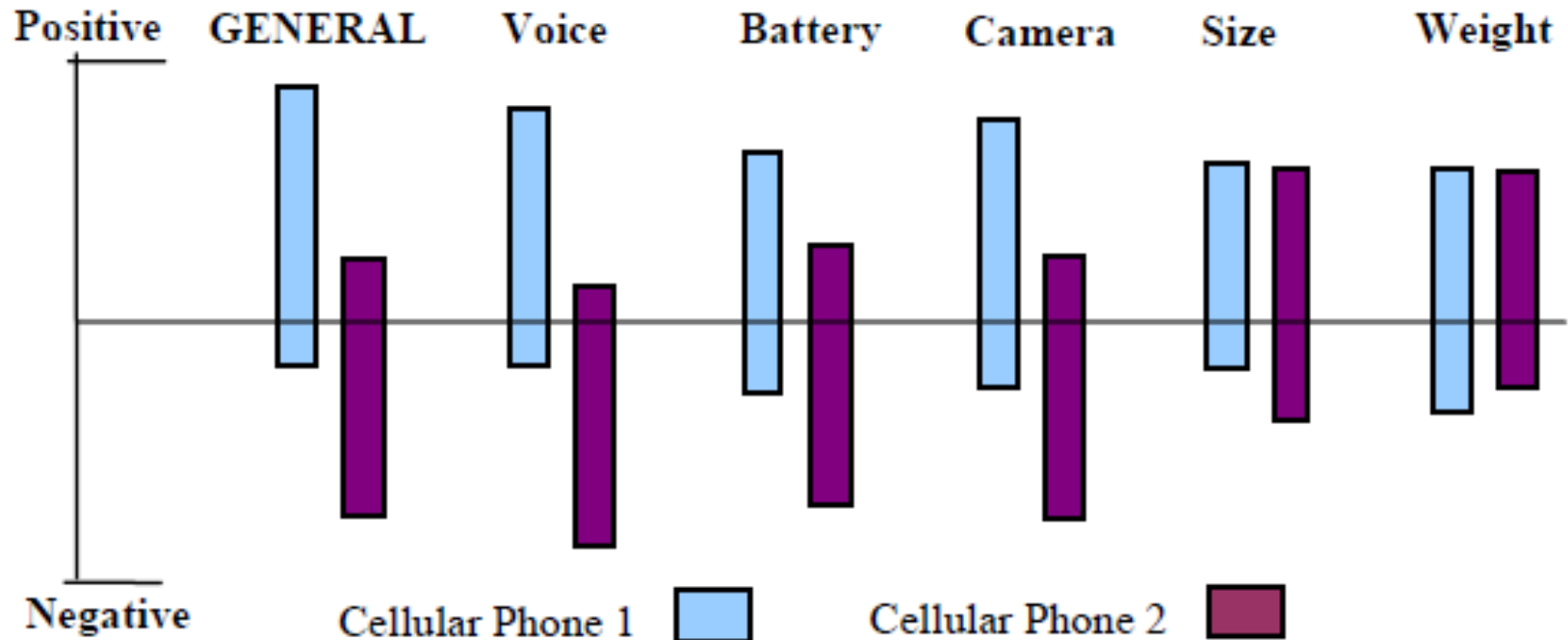
Classification Based on Supervised Learning

- Sentiment classification
  - Supervised learning Problem
  - Three classes
    - *Positive*
    - *Negative*
    - *Neutral*

Opinion words in Sentiment classification

- topic-based classification
  - topic-related words are important
    - e.g., *politics, sciences, sports*

- Sentiment classification
  - topic-related words are unimportant
  - **opinion words** (also called **sentiment words)**
    - **that indicate positive or negative opinions** are important,
      e.g., *great, excellent, amazing, horrible, bad, worst*

Features in Opinion Mining

- *Terms and their frequency*
  - *TF-IDF*
- *Part of speech (POS)*
  - Adjectives
- *Opinion words and phrases*
  - *beautiful, wonderful, good, and amazing are positive opinion words*
  - *bad, poor, and terrible are negative opinion words.*
  - opinion phrases and idioms,
    e.g., *cost someone an arm and a leg*
- *Rules of opinions*
- *Negations*
- *Syntactic dependency*

Rules of opinions

Syntactic template	Example pattern
<subj> passive-verb	<subj> was satisfied
<subj> active-verb	<subj> complained
active-verb <dobj>	endorsed <dobj>
noun aux <dobj>	fact is <dobj>
passive-verb prep <np>	was worried about <np>

A Brief Summary of **Sentiment Analysis** Methods

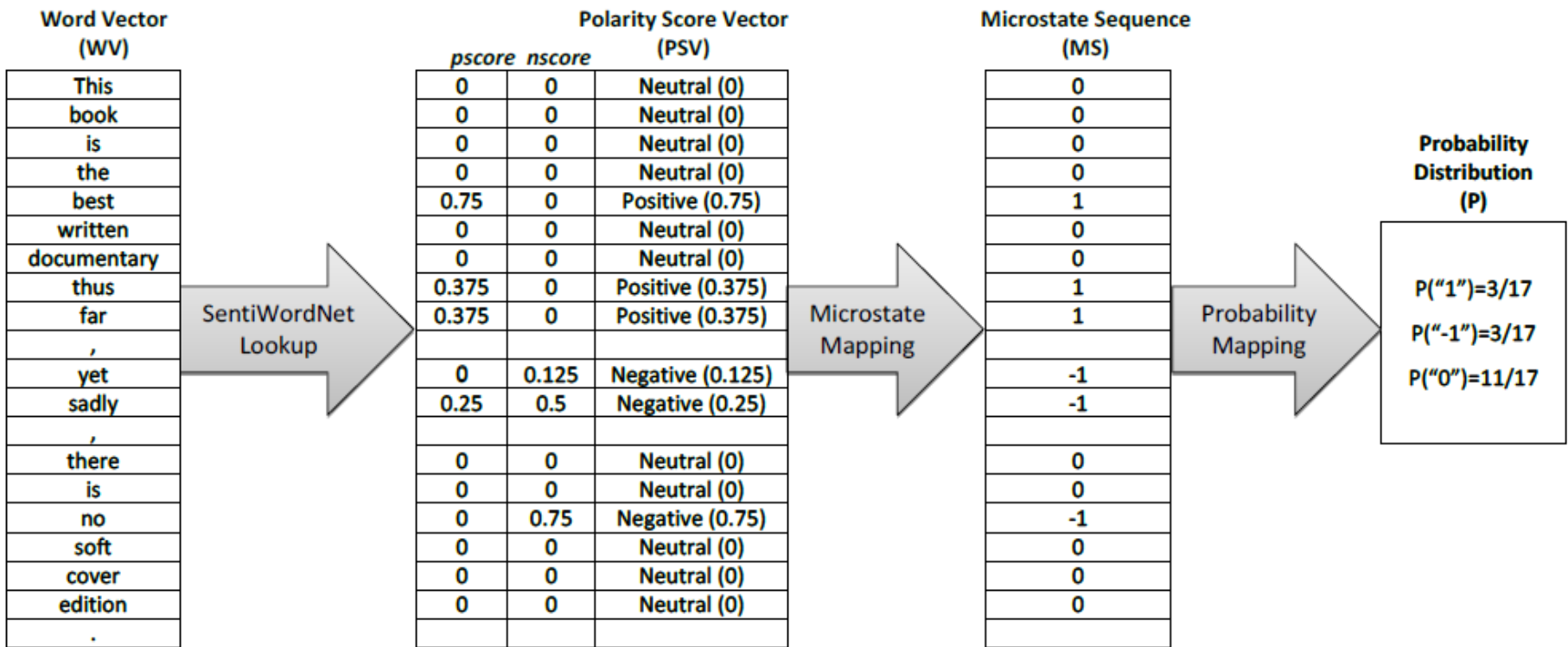| Study	Analysis Task	Sentiment Identification		Sentiment Aggregation		Nature of Measure
		Method	Level	Method	Level	
Hu and Li, 2011	Polarity	ML (Probabilistic model)	Snippet			Valence
Li and Wu, 2010	Polarity	Lexicon/Rule	Phrase	Sum	Snippet	Valence
Thelwall et al., 2010	Polarity	Lexicon/Rule	Sentence	Max & Min	Snippet	Range
Boiy and Moens, 2009	Both	ML (Cascade ensemble)	Sentence			Valence
Chung 2009	Polarity	Lexicon	Phrase	Average	Sentence	Valence
Wilson, Wiebe, and Hoffmann, 2009	Both	ML (SVM, AdaBoost, Rule, etc.)	Phrase			Valence
Zhang et al., 2009	Polarity	Lexicon/Rule	Sentence	Weighted average	Snippet	Valence
Abbasi, Chen, and Salem, 2008	Polarity	ML (GA + feature selection)	Snippet			Valence
Subrahmanian and Reforgiato, 2008	Polarity	Lexicon/Rule	Phrase	Rule	Snippet	Valence
Tan and Zhang 2008	Polarity	ML (SVM, Winnow, NB, etc.)	Snippet			Valence
Airoldi, Bai, and Padman, 2007	Polarity	ML (Markov Blanket)	Snippet			Valence
Das and Chen, 2007	Polarity	ML (Bayesian, Discriminate, etc.)	Snippet	Average	Daily	Valence
Liu et al., 2007	Polarity	ML (PLSA)	Snippet			Valence
Kennedy and Inkpen, 2006	Polarity	Lexicon/Rule, ML (SVM)	Phrase	Count	Snippet	Valence
Mishne 2006	Polarity	Lexicon	Phrase	Average	Snippet	Valence
Liu et al., 2005	Polarity	Lexicon/Rule	Phrase	Distribution	Object	Range
Mishne 2005	Polarity	ML (SVM)	Snippet			Valence
Popescu and Etzioni 2005	Polarity	Lexicon/Rule	Phrase			Valence
Efron 2004	Polarity	ML (SVN, NB)	Snippet			Valence
Wilson, Wiebe, and Hwa, 2004	Both	ML (SVM, AdaBoost, Rule, etc.)	Sentence			Valence
Nigam and Hurst 2004	Polarity	Lexicon/Rule	Chunk	Rule	Sentence	Valence
Dave, Lawrence, and Pennock, 2003	Polarity	ML (SVM, Rainbow, etc.)	Snippet			Valence
Nasukawa and Yi 2003	Polarity	Lexicon/Rule	Phrase	Rule	Sentence	Valence
Yi et al., 2003	Polarity	Lexicon/Rule	Phrase	Rule	Sentence	Valence
Yu and Hatzivassiloglou 2003	Both	ML (NB) + Lexicon/Rule	Phrase	Average	Sentence	Valence
Pang, Lee, and Vaithyanathan 2002	Polarity	ML (SVM, MaxEnt, NB)	Snippet			Valence
Subasic and Huettner 2001	Polarity	Lexicon/Fuzzy logic	Phrase	Average	Snippet	Valence
Turney 2001	Polarity	Lexicon/Rule	Phrase	Average	Snippet	Valence

(Both = Subjectivity and Polarity; ML= Machine Learning; Lexicon/Rule= Lexicon enhanced by linguistic rules)

Word-of-Mouth (WOM)

- "This book is the best written documentary thus far, yet sadly, there is no soft cover edition."

- "This book is the best written documentary thus far, yet sadly, there is no soft cover edition."

Source: Zhang, Z., Li, X., and Chen, Y. (2012), "Deciphering word-of-mouth in social media: Text-based metrics of consumer reviews," ACM Trans. Manage. Inf. Syst. (3:1) 2012, pp 1-23.,

	Word	POS
This	This	DT
book	book	NN
is	is	VBZ
the	the	DT
best	best	JJS
written	written	VBN
documentary	documentary	NN
thus	thus	RB
far	far	RB
,	,	,
yet	yet	RB
sadly	sadly	RB
,	,	,
there	there	EX
is	is	VBZ
no	no	DT
soft	soft	JJ
cover	cover	NN
edition	edition	NN
.	.	.

Conversion of text representation

Word Vector (WV)		Polarity Score Vector (PSV)			Microstate Sequence (MS)		Probability Distribution (P)
		pscore	*nscore*				
This		0	0	Neutral (0)	0		
book		0	0	Neutral (0)	0		
is		0	0	Neutral (0)	0		
the		0	0	Neutral (0)	0		
best		0.75	0	Positive (0.75)	1		
written		0	0	Neutral (0)	0		
documentary		0	0	Neutral (0)	0		
thus		0.375	0	Positive (0.375)	1		P("1")=3/17
far		0.375	0	Positive (0.375)	1		P("-1")=3/17
,							P("0")=11/17
yet		0	0.125	Negative (0.125)	-1		
sadly		0.25	0.5	Negative (0.25)	-1		
,							
there		0	0	Neutral (0)	0		
is		0	0	Neutral (0)	0		
no		0	0.75	Negative (0.75)	-1		
soft		0	0	Neutral (0)	0		
cover		0	0	Neutral (0)	0		
edition		0	0	Neutral (0)	0		
.							

SentiWordNet Lookup → Microstate Mapping → Probability Mapping →

Datasets of Opinion Mining

- Blog06
  - 25GB TREC test collection
  - http://ir.dcs.gla.ac.uk/test collections/access to data.html
- Cornell movie-review datasets
  - http://www.cs.cornell.edu/people/pabo/movie-review-data/
- Customer review datasets
  - http://www.cs.uic.edu/~liub/FBS/CustomerReviewData.zip
- Multiple-aspect restaurant reviews
  - http://people.csail.mit.edu/bsnyder/naacl07
- NTCIR multilingual corpus
  - NTCIR Multilingual Opinion-Analysis Task (MOAT)

Lexical Resources of Opinion Mining

- SentiWordnet
  - http://sentiwordnet.isti.cnr.it/

- General Inquirer
  - http://www.wjh.harvard.edu/～inquirer/

- OpinionFinder's Subjectivity Lexicon
  - http://www.cs.pitt.edu/mpqa/

- NTU Sentiment Dictionary (NTUSD)
  - http://nlg18.csie.ntu.edu.tw:8080/opinion/

- Hownet Sentiment
  - http://www.keenage.com/html/c_bulletin_2007.htm

Example of SentiWordNet

POS   ID   PosScore   NegScore   SynsetTerms   Gloss

a   00217728   0.75   0   beautiful#1   delighting the senses or exciting intellectual or emotional admiration; "a beautiful child"; "beautiful country"; "a beautiful painting"; "a beautiful theory"; "a beautiful party"

a   00227507   0.75   0   best#1   (superlative of `good') having the most positive qualities; "the best film of the year"; "the best solution"; "the best time for planting"; "wore his best suit"

r   00042614   0   0.625   unhappily#2 sadly#1   in an unfortunate way; "sadly he died before he could see his grandchild"

r   00093270   0   0.875   woefully#1 sadly#3 lamentably#1 deplorably#1 in an unfortunate or deplorable manner; "he was sadly neglected"; "it was woefully inadequate"

r   00404501   0   0.25   sadly#2 with sadness; in a sad manner; "`She died last night,' he said sadly"

《知網》情感分析用詞語集（beta版）

- "中英文情感分析用詞語集"
    - 包含詞語約 17887
- "中文情感分析用詞語集"
    - 包含詞語約 9193
- "英文情感分析用詞語集"
    - 包含詞語 8945

中文情感分析用詞語集

中文正面情感詞語	836
中文負面情感詞語	1254
中文正面評價詞語	3730
中文負面評價詞語	3116
中文程度級別詞語	219
中文主張詞語	38
Total	9193

中文情感分析用詞語集

- "正面情感" 詞語
  - 如：
    愛，讚賞，快樂，感同身受，好奇，
    喝彩，魂牽夢縈，嘉許 …
- "負面情感" 詞語
  - 如：
    哀傷，半信半疑，鄙視，不滿意，不是滋
    味兒，後悔，大失所望 …

中文情感分析用詞語集

- "正面評價" 詞語
  - 如：
    不可或缺，部優，才高八斗，沉魚落雁，
    催人奮進，動聽，對勁兒 ...
- "負面評價" 詞語
  - 如：
    醜，苦，超標，華而不實，荒涼，混濁，
    畸輕畸重，價高，空洞無物 ...

中文情感分析用詞語集

- "程度級別"詞語
  - 1. "極其|extreme / 最|most"
    - 非常，極，極度，無以倫比，最為
  - 2. "很|very"
    - 多麼，分外，格外，著實
  - ...
- "主張"詞語
  - 1. {perception|感知}
    - 感覺，覺得，預感
  - 2. {regard|認為}
    - 認為，以為，主張

Opinion Spam Detection

- Opinion Spam Detection: Detecting Fake Reviews and Reviewers

  - Spam Review

  - Fake Review

  - Bogus Review

  - Deceptive review

  - Opinion Spammer

  - Review Spammer

  - Fake Reviewer

  - Shill (Stooge or Plant)

Opinion Spamming

- Opinion Spamming
  - "illegal" activities
    - e.g., writing fake reviews, also called shilling
  - try to mislead readers or automated opinion mining and sentiment analysis systems by giving undeserving positive opinions to some target entities in order to promote the entities and/or by giving false negative opinions to some other entities in order to damage their reputations.

Forms of Opinion spam

- fake reviews (also called bogus reviews)
- fake comments
- fake blogs
- fake social network postings
- deceptions
- deceptive messages

Fake Review Detection

- Methods
  - supervised learning
  - pattern discovery
  - graph-based methods
  - relational modeling
- Signals
  - Review content
  - Reviewer abnormal behaviors
  - Product related features
  - Relationships

Professional Fake Review Writing Services
(some Reputation Management companies)

- Post positive reviews

- Sponsored reviews

- Pay per post

- Need someone to write positive reviews about our company (budget: $250-$750 USD)

- Fake review writer

- Product review writer for hire

- Hire a content writer

- Fake Amazon book reviews (hiring book reviewers)

- People are just having fun (not serious)

Source: http://www.cs.uic.edu/~liub/FBS/fake-reviews.html

Need someone to write and post positive reviews

Like 0 | Send | Tweet 0 | +1 0 | Share

Bids	Avg Bid (USD)	Project Budget (USD)
10	N/A	$250 - $750

Featured | Sealed

CLOSED

Project Description:
We need someone to write and post positive reviews about our company on websites. Please send an example of a review you would post for any company. We can also send examples of comments our customers have sent us to use and refer too as well

This is a long term project, so if it works out there will be a healthy amount of work. Please reply back with all your experience and how much you would charge per post.

thank you.

Skills required:
Publicación en foros, Opiniones

Project posted by:
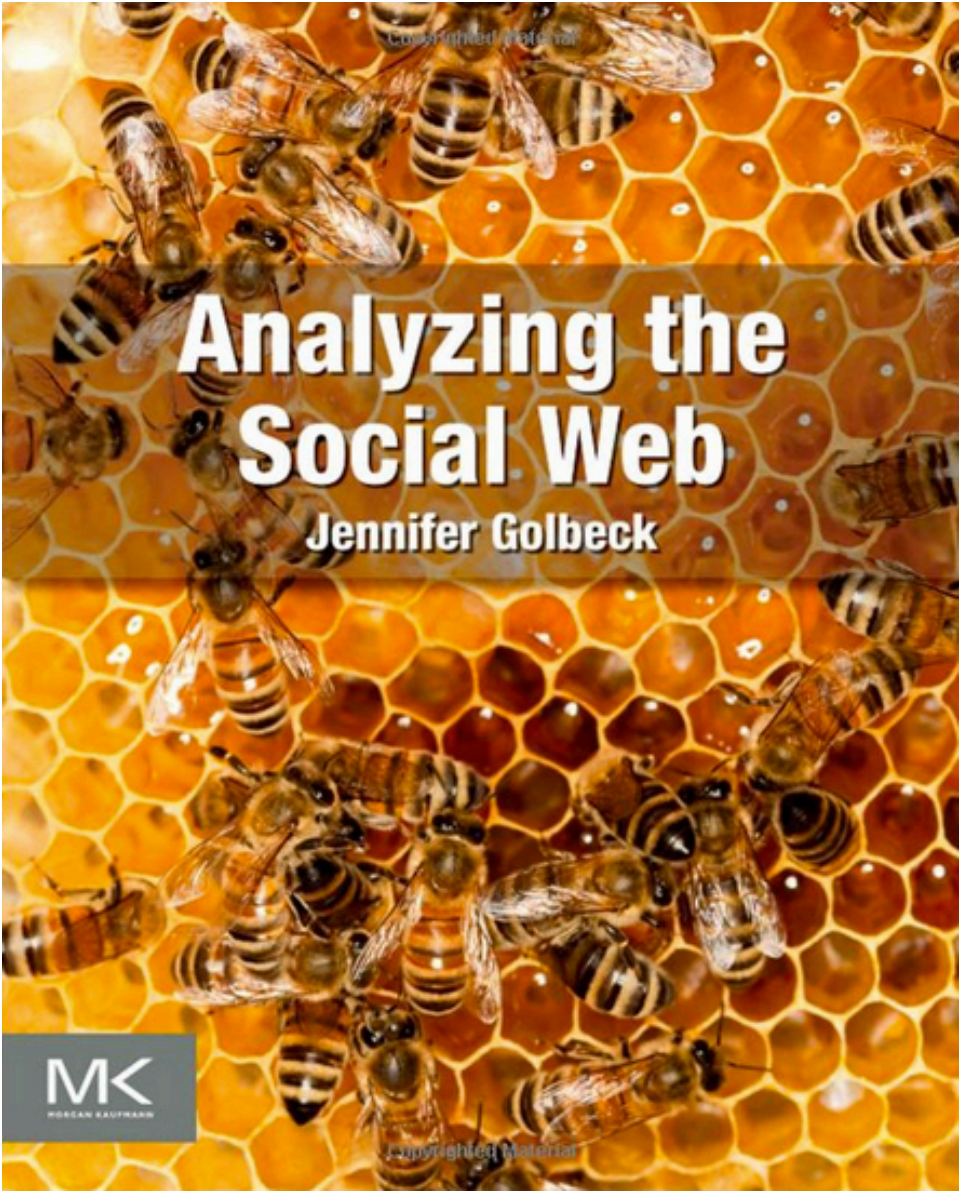⚪ dvel 🇺🇸
⭐⭐⭐⭐⭐ 5.0 (1 Review)
✓ VERIFIED

Follow

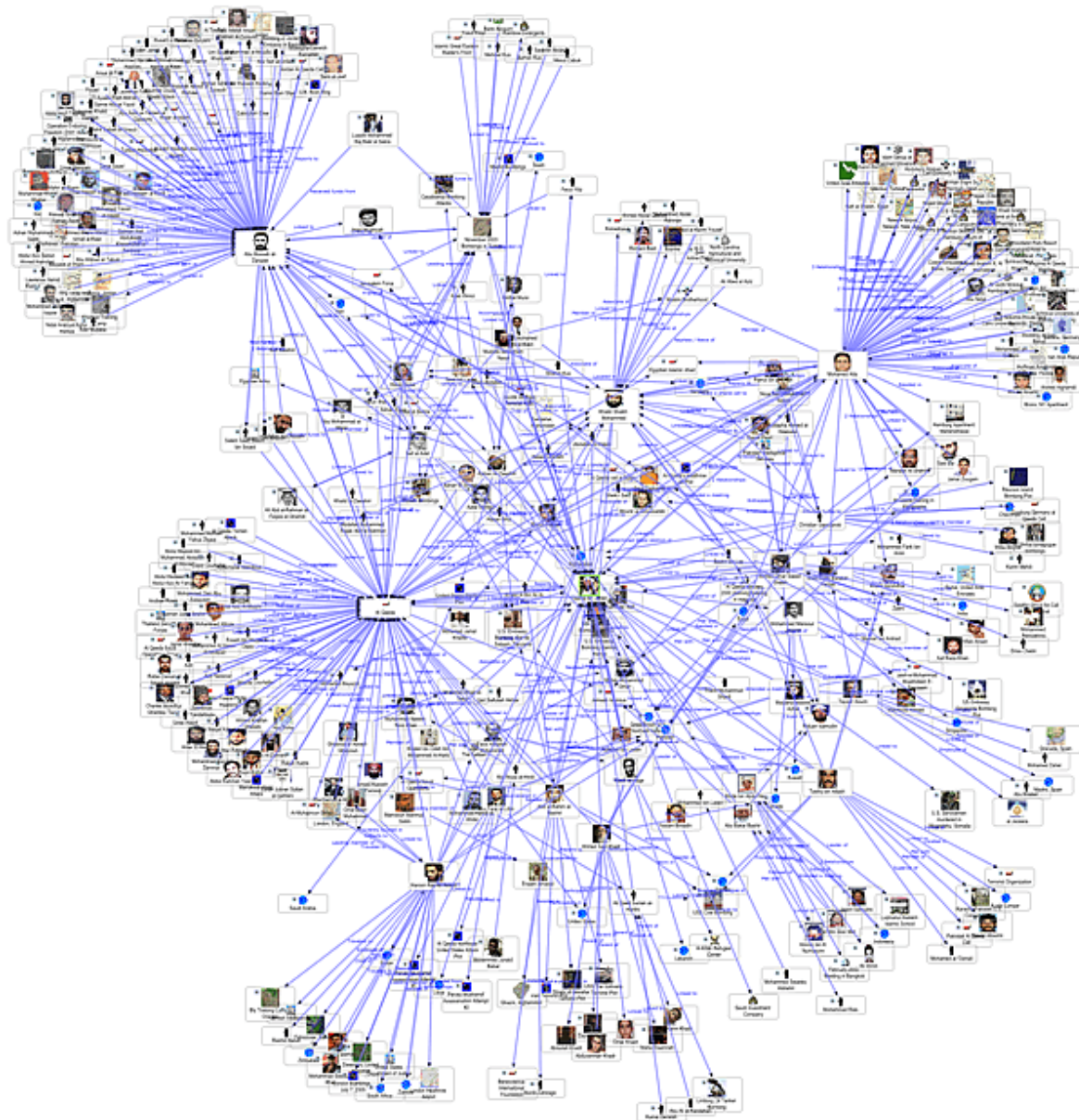From $100/week
Your ad could

Social Media Analytics

- Social Network Analysis (SNA)
  - Degree Centrality
  - Betweenness Centrality
  - Closeness Centrality

Jennifer Golbeck (2013), **Analyzing the Social Web**, Morgan Kaufmann

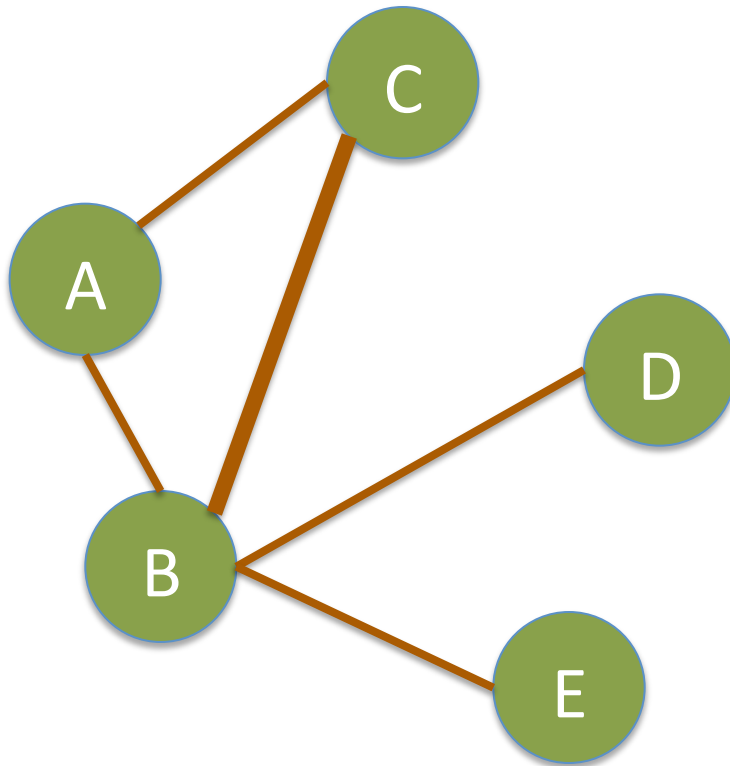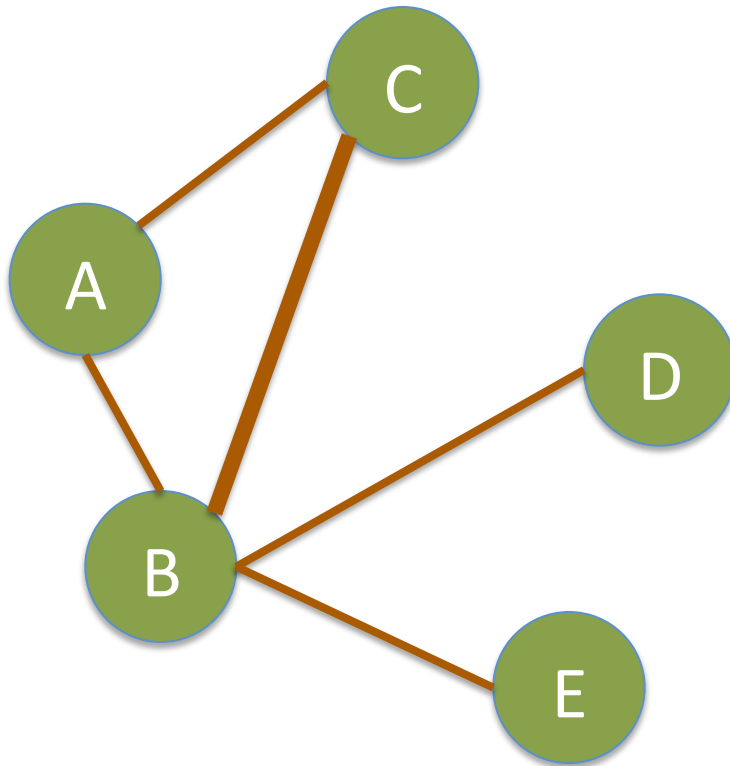Source: http://www.amazon.com/Analyzing-Social-Web-Jennifer-Golbeck/dp/0124055311
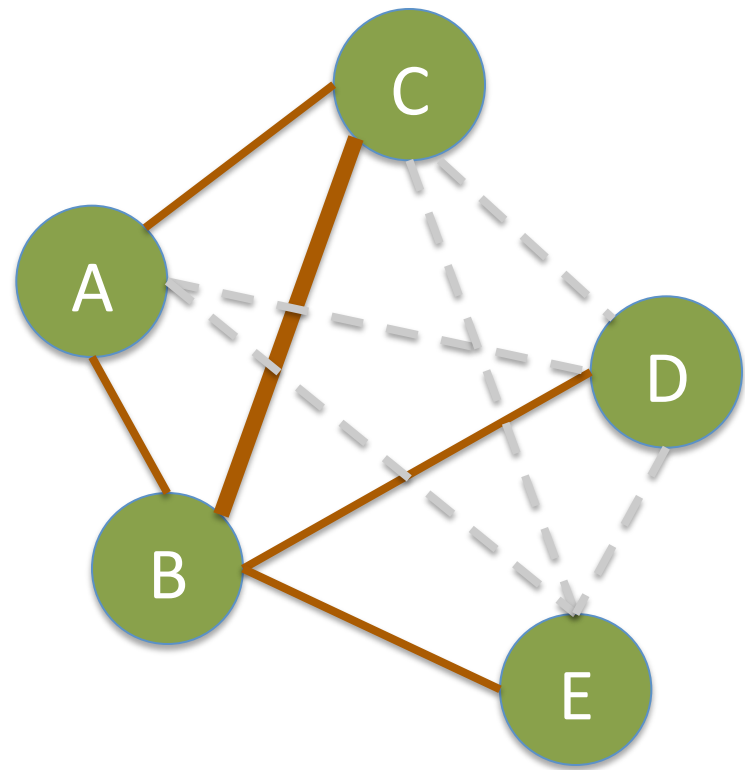
Social Network Analysis

Degree
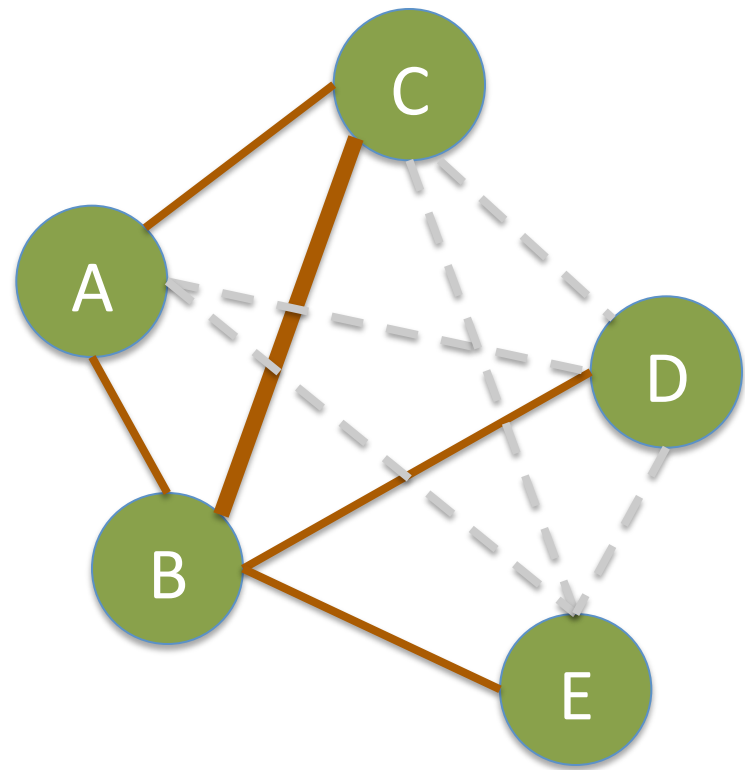
Degree
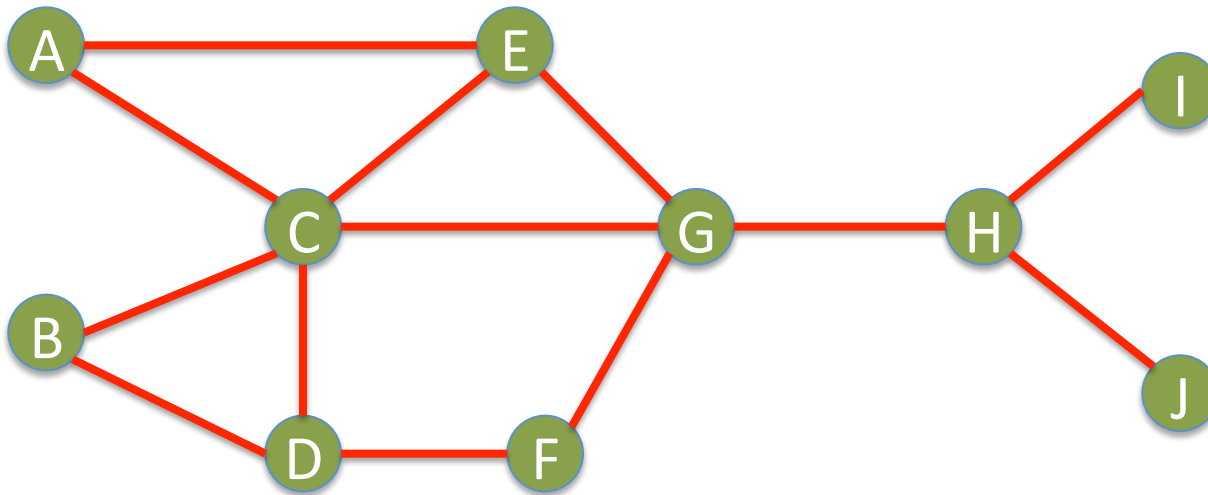

A: 2
B: 4
C: 2
D:1
E: 1

Density

Density

Edges (Links): 5
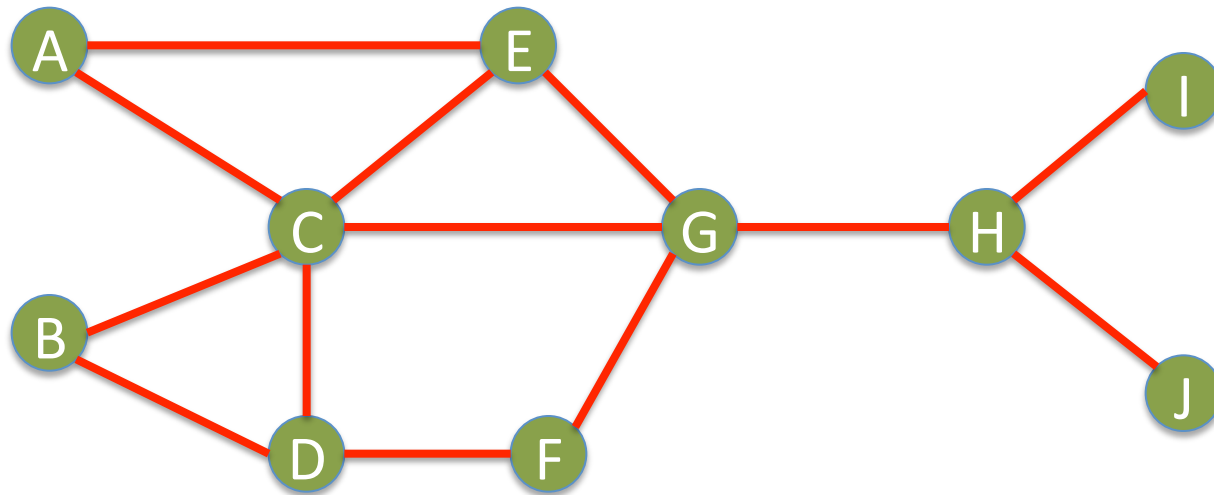Total Possible Edges: 10
Density: 5/10 = 0.5

Density

Nodes (n): 10
Edges (Links): 13
Total Possible Edges: (n * (n-1)) / 2 = (10 * 9) / 2 = 45
Density: 13/45 = 0.29

Which Node is Most **Important?**

Centrality

- Important or prominent actors are those that are linked or involved with other actors extensively.

- A person with extensive contacts (links) or communications with many other people in the organization is considered more important than a person with relatively fewer contacts.

- The links can also be called **ties**.
 A central actor is one involved in many ties.

# Social Network Analysis: Degree Centrality
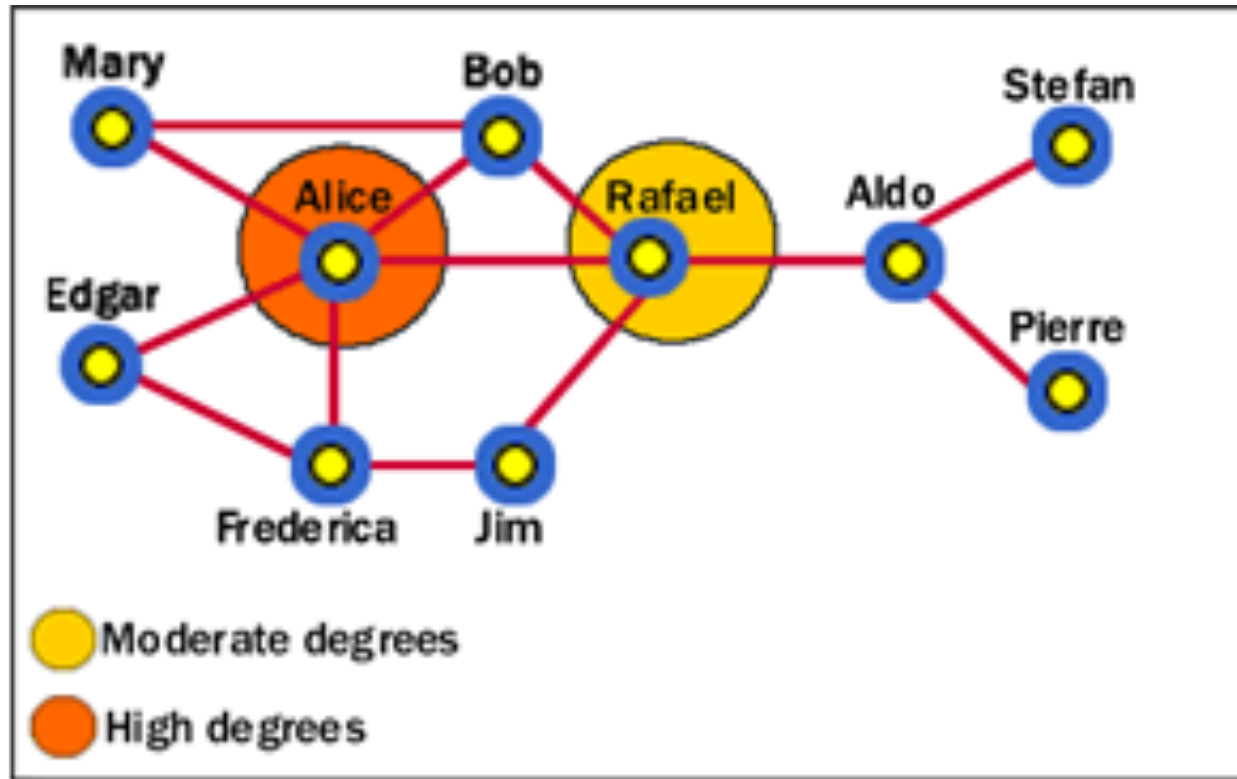
Alice has the highest degree centrality, which means that she is quite active in the network. However, she is not necessarily the most powerful person because she is only directly connected within one degree to people in her clique—she has to go through Rafael to get to other cliques.

Social Network Analysis: Degree Centrality
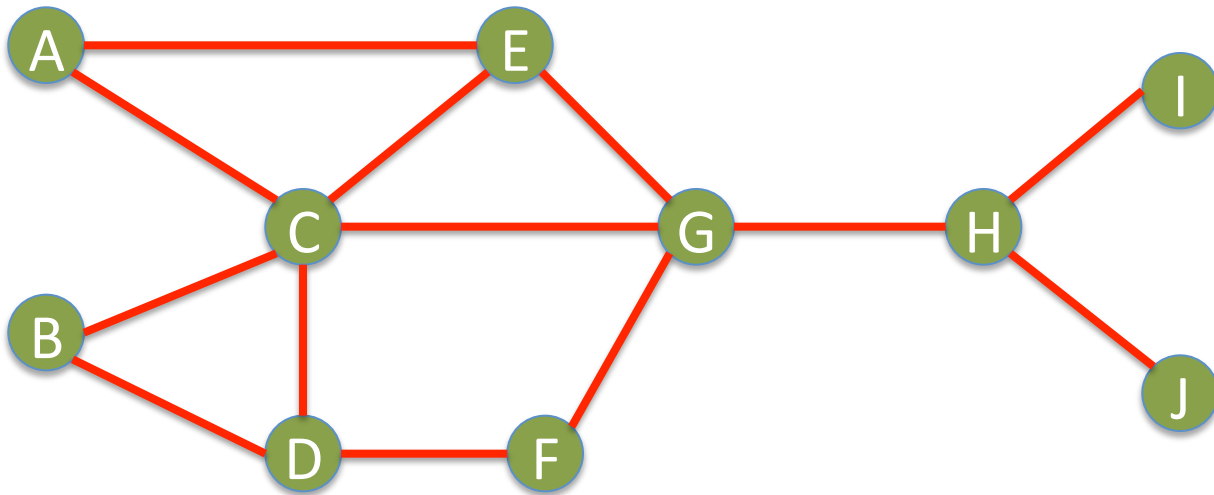
Social Network Analysis: Degree Centrality
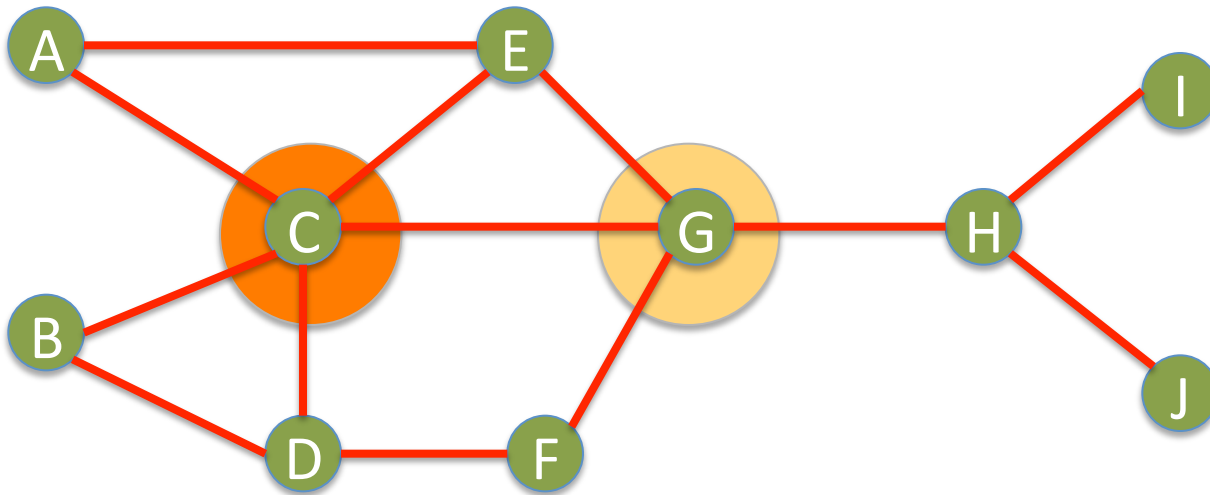
Node	Score	Standardized Score
A	2	2/10 = 0.2
B	2	2/10 = 0.2
C	**5**	**5/10 = 0.5**
D	3	3/10 = 0.3
E	3	3/10 = 0.3
F	2	2/10 = 0.2
G	**4**	**4/10 = 0.4**
H	3	3/10 = 0.3
I	1	1/10 = 0.1
J	1	1/10 = 0.1

Social Network Analysis: Betweenness Centrality
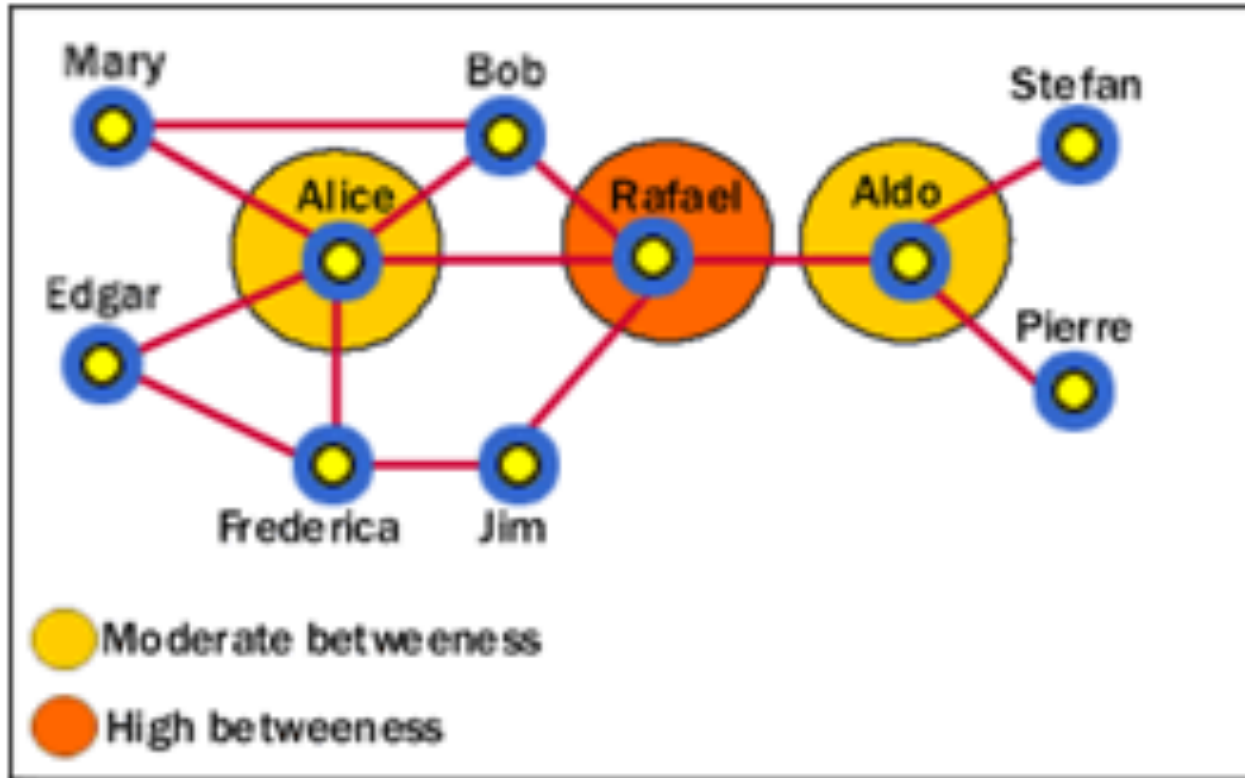
Rafael has the highest betweenness because he is between Alice and Aldo, who are between other entities. Alice and Aldo have a slightly lower betweenness because they are essentially only between their own cliques. Therefore, although Alice has a higher degree centrality, Rafael has more importance in the network in certain respects.

Social Network Analysis: Closeness Centrality
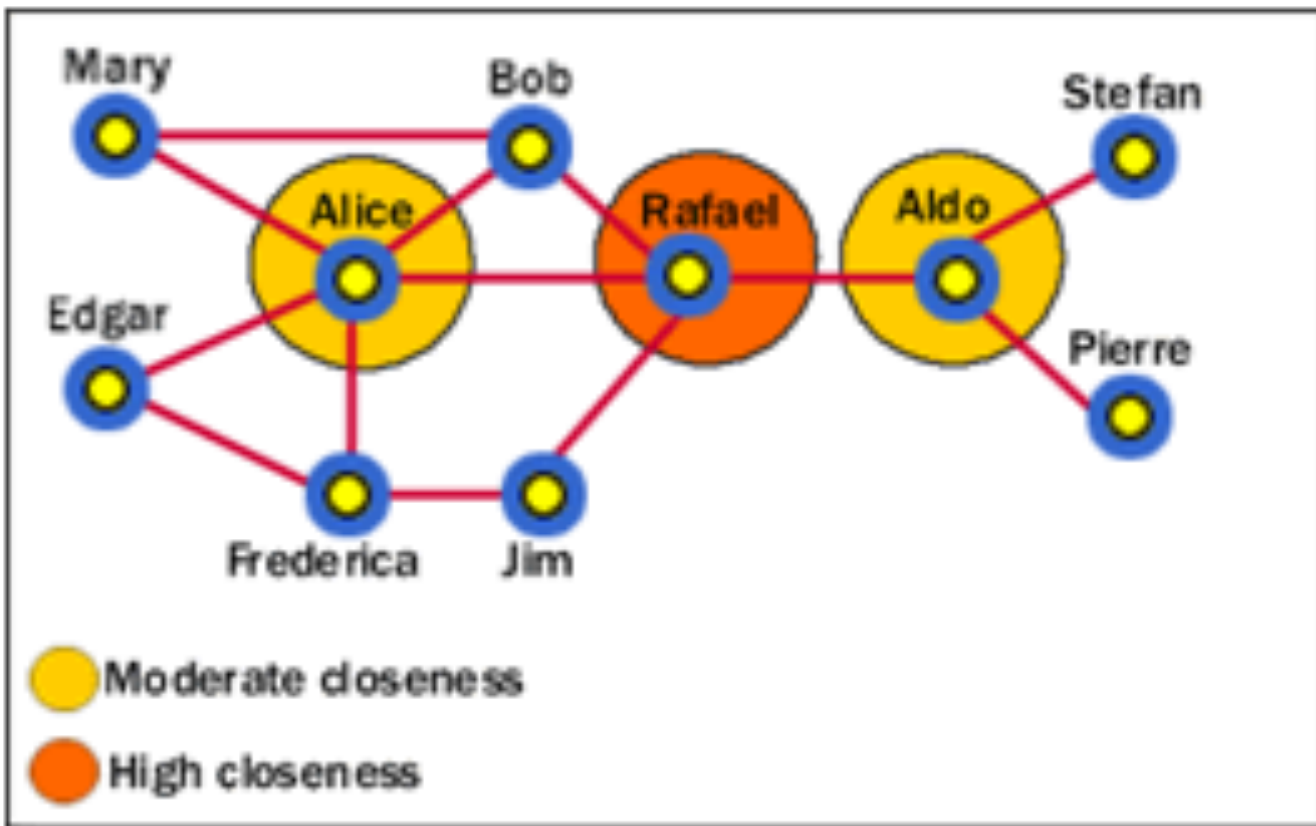
Rafael has the highest closeness centrality because he can reach more entities through shorter paths. As such, Rafael's placement allows him to connect to entities in his own clique, and to entities that span cliques.

Social Network Analysis: Closeness Centrality
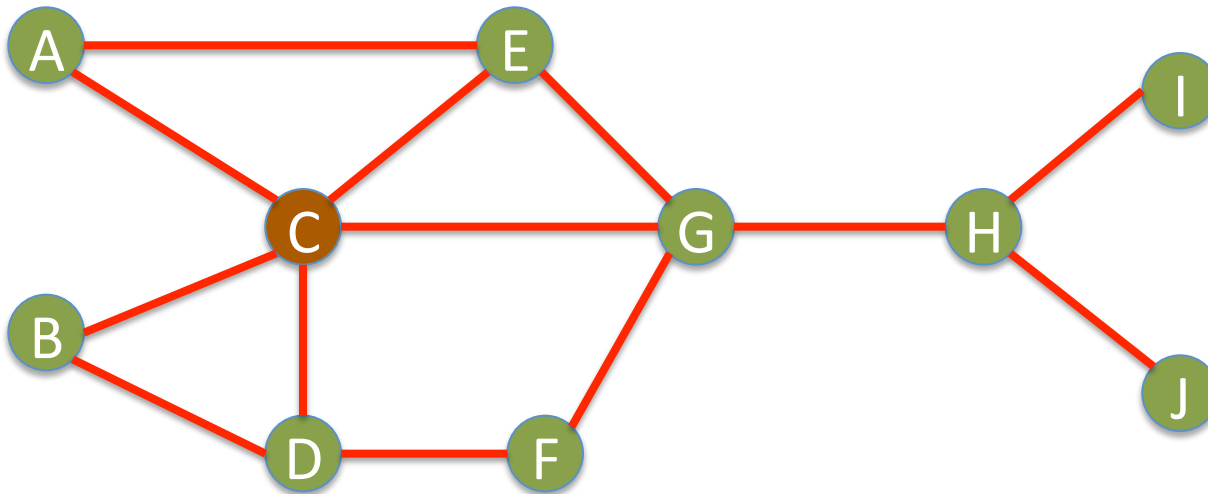
C→A: 1
C→B: 1
C→D: 1
C→E: 1
C→F: 2
C→G: 1
C→H: 2
C→I: 3
C→J: 3
_____

Total=15

C: Closeness Centrality = 15/9 = 1.67

Social Network Analysis: Closeness Centrality
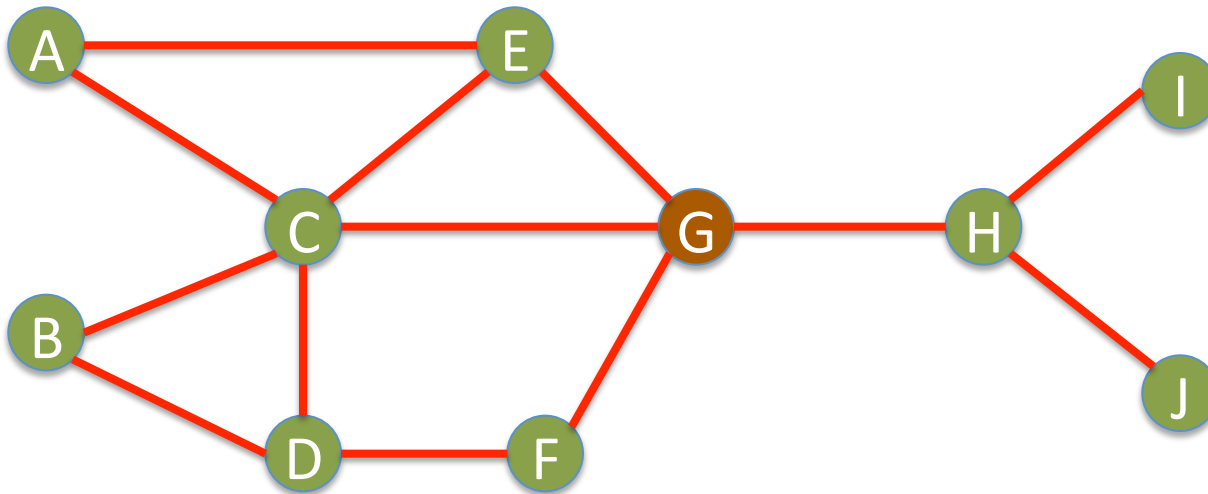
G→A: 2
G→B: 2
G→C: 1
G→D: 2
G→E: 1
G→F: 1
G→H: 1
G→I: 2
G→J: 2
_____

Total=14

G: Closeness Centrality = 14/9 = 1.56

Social Network Analysis: Closeness Centrality

H→A: 3
H→B: 3
H→C: 2
H→D: 2
H→E: 2
H→F: 2
H→G: 1
H→I: 1
H→J: 1

Total=17

H: Closeness Centrality = 17/9 = 1.89

Social Network Analysis: Closeness Centrality

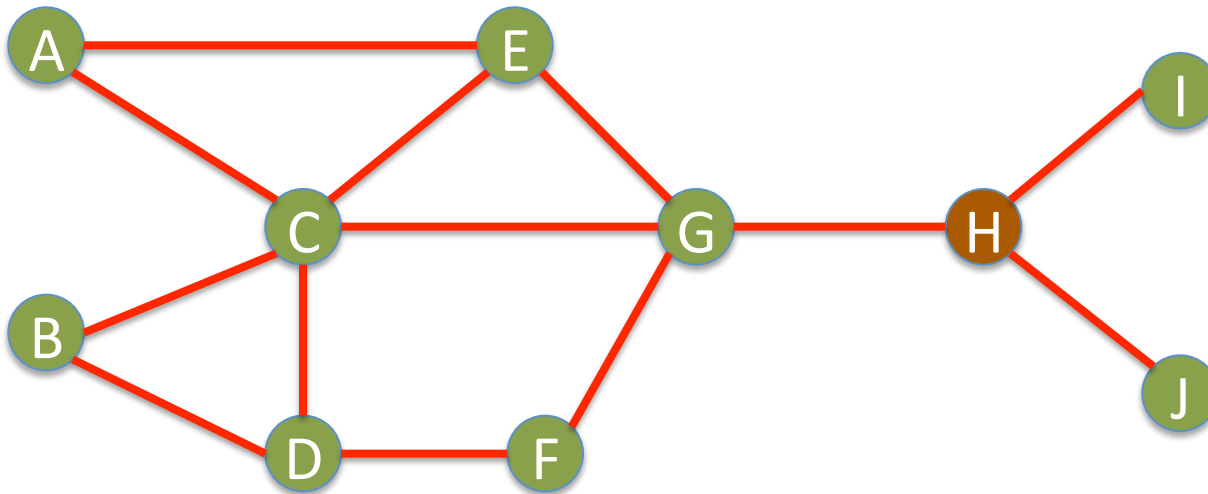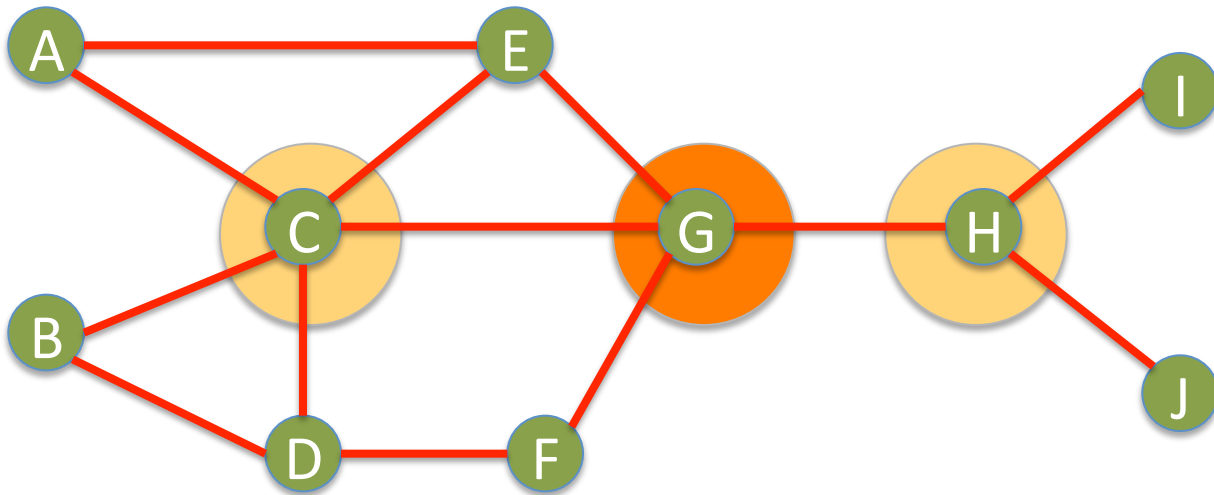G: Closeness Centrality = 14/9 = 1.56 **1**

C: Closeness Centrality = 15/9 = 1.67 **2**

H: Closeness Centrality = 17/9 = 1.89 **3**

Social Network Analysis: Eigenvalue
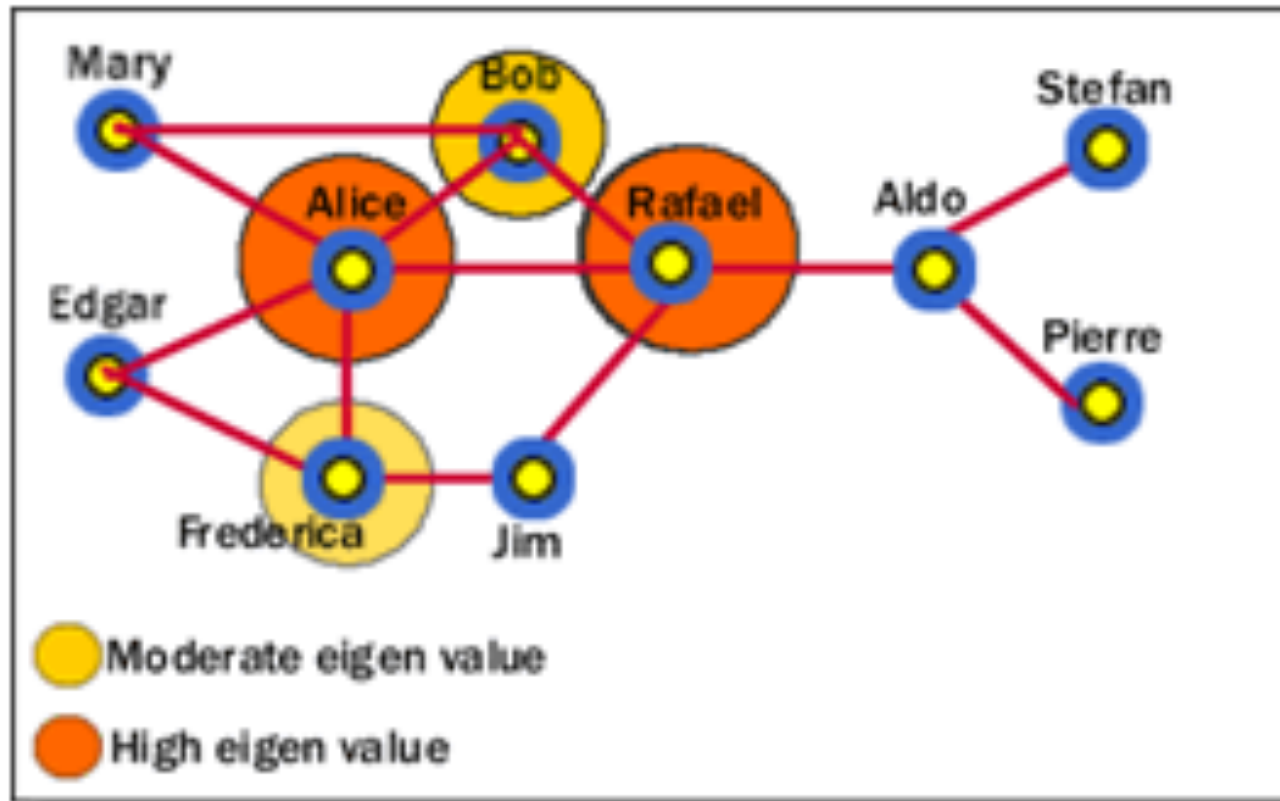
Alice and Rafael are closer to other highly close entities in the network. Bob and Frederica are also highly close, but to a lesser value.

Social Network Analysis:
Hub and Authority
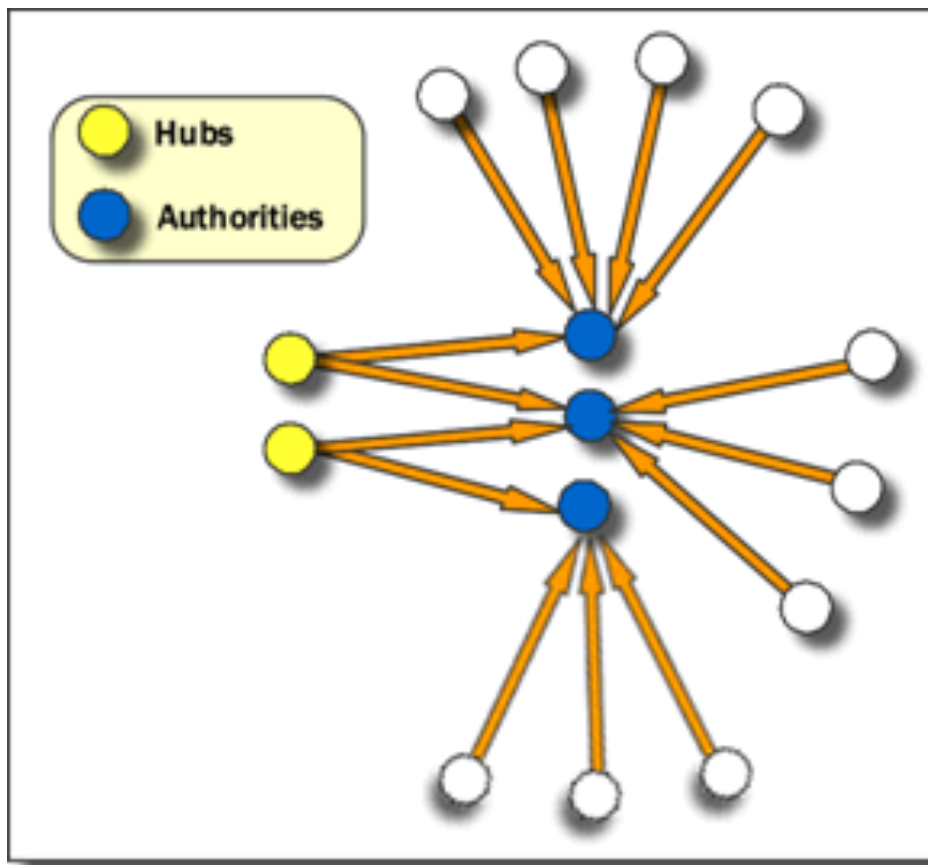
Hubs are entities that point to a relatively large number of authorities. They are essentially the mutually reinforcing analogues to authorities. Authorities point to high hubs. Hubs point to high authorities. You cannot have one without the other.

Social Network Analysis

Network Metrics

Calculate   ○ CardView   ⊙ TableView   ☐ Group area   Expand groups   Collapse groups

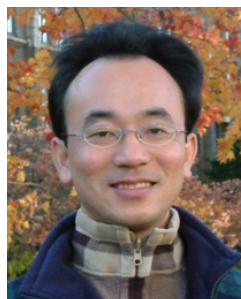| Name	Type	Degree	Betweenness	Closeness	Eigenvalue	Hub	Authority
Osama bin Laden	Person	44	0.920492092358...	1	0.0271	0	0.011
Abdallah Al-Halabi	Person	2	0	0.654867256637...	0.0001	0	0
Abu Mussab al-Zarqawi	Person	84	0.934887847326...	0.869451697127...	0.7028	0.6572	0.1076
Al Qaeda	Terrorist Organiz...	85	1	0.962427745664...	0.0416	0.3941	0.0166
Ayman Al-Zawahiri	Person	14	0.045794908783...	0.716129032258...	0	0	0.0173
Ensam Arnaout	Person	4	0.031189325814...	0.656804733727...	0.0001	0	0
Imad Eddin Barakat Yarbas	Person	11	0.065049589038...	0.704016913319...	0.0015	0	0.0025
Khalid Shaikh Mohammed	Person	32	0.339916464724...	0.866059817945...	0.002	0	0.1528
Mohamed Atta	Person	61	0.666268740074...	0.820197044334...	0.0015	0	0.6816

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Q & A

Social Media and Social Computing
(社群媒體與社群運算)

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