

Accenture / Fjord Dublin (via teleconference) 20 October 2020

Systems Theory in Design Platforms

Hugh Dubberly
Dubberly Design Office

Key terms:

- API
- Stack + Layer
- Platform

API — Application Programming Interface — the rules for connecting programs.

- An API is a kind of valence, a potential for connecting
- It comes with rules governing who can make a request, how, and for what
- Open APIs are public; anyone who follows the rules can use them

Exercise:

What are some examples of APIs?

- In the productivity software world?
- Online?
- In the physical world?
- In social interactions?

**A “layer” is an independent logical unit;
one layer builds on another, creating a “stack”.**

- APIs describe and govern communications between layers
- Separating functions into layers enables independent development
- Alternative layers can be swapped out

Exercise:

What are some examples of stacks and their layers?

- Personal computer?
- Web server?
- Other?

Platforms

Remember Blockbuster, Kodak, Nokia, RIM?

46 of the Fortune 100 from 1995 didn't make the 2015 list.

Many no longer exist.

As organizations grow older and larger, many of them become siloed; communicating becomes harder; getting things done takes longer and requires more effort; progress slows; effectiveness decreases.

And what makes things worse: this aging process now takes place in the context of increasingly rapid socio-technological change.

Key

Surviving

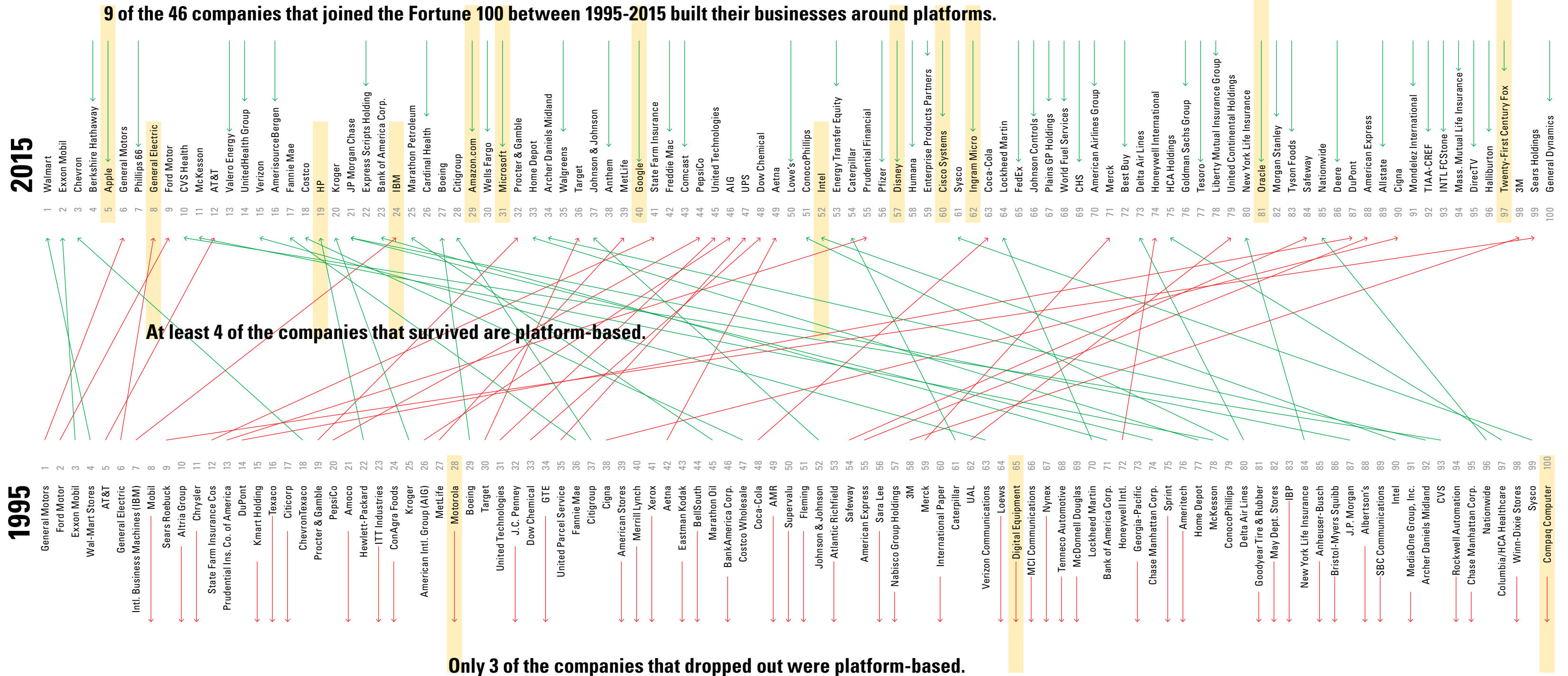
Surviving but reorganized

Exiting

1	General Motors*	26	American Intl. Group (AIG)*	51	Fleming	76	Ameritech
2	Ford Motor	27	MetLife	52	Johnson & Johnson	77	Home Depot
3	Exxon Mobil	28	Motorola	53	Atlantic Richfield	78	McKesson
4	Wal-Mart Stores	29	Boeing	54	Safeway	79	ConocoPhillips
5	AT&T	30	Target	55	American Express	80	Delta Air Lines
6	General Electric	31	United Technologies	56	Sara-Lee	81	Goodyear Tire & Rubber
7	Intl. Business Machines (IBM)	32	J.C. Penney	57	Nabisco Group Holdings	82	May Dept. Stores
8	Mobil	33	Dow Chemical	58	3M	83	IBP
9	Sears Roebuck*	34	GTE	59	Merck	84	New York Life Insurance
10	Altria Group	35	United Parcel Service	60	International Paper	85	Anheuser-Busch
11	Chrysler	36	Fannie Mae	61	Caterpillar	86	Bristol-Myers Squibb
12	State Farm Insurance Cos	37	Citigroup	62	UAL*	87	J.P. Morgan
13	Prudential Ins. Co. of America	38	Cigna	63	Verizon Communications	88	Albertson's
14	DuPont	39	American Stores	64	Loews	89	SBC Communications
15	Kmart Holding	40	Merrill Lynch	65	Digital Equipment	90	Intel
16	Texaco	41	Xerox	66	MCI Communications	91	MediaOne Group, Inc.
17	Citicorp	42	Aetna	67	Nynex	92	Archer Daniels Midland
18	ChevronTexaco	43	Eastman-Kodak	68	Tenneco Automotive	93	CVS
19	Procter & Gamble	44	BellSouth	69	McDonnell Douglas	94	Rockwell Automation
20	PepsiCo	45	Marathon Oil	70	Lockheed Martin	95	Chase Manhattan Corp.
21	Amoco	46	BankAmerica Corp.	71	Bank of America Corp.*	96	Nationwide
22	Hewlett-Packard	47	Costco Wholesale	72	Honeywell Intl.	97	Columbia/HCA Healthcare
23	HTT Industries	48	Coca-Cola	73	Georgia-Pacific	98	Winn-Dixie Stores
24	ConAgra Foods	49	AMR	74	Chase Manhattan Corp.*	99	Sysco
25	Kroger	50	Supervalu	75	Sprint	100	Compaq Computer

Increasingly, value comes from creating platforms, on which others can create value.

Key
 — Rising / Entering
 — Falling / Exiting
 Platforms



What's a platform?

“A ‘platform’ is a system that can be programmed and therefore customized by outside developers—users—and in that way, adapted to countless needs and niches that the platform’s original developers could not have possibly contemplated, much less had time to accommodate.”

—Marc Andreessen, co-founder of Netscape and Andreessen-Horowitz



What's a platform?

A 'platform' is a system that can be programmed...

Level 2: App

New services added by outside developers

Level 1: Platform

Core services provided by the original developers

Platforms amplify their owner's investment and benefit from network effects.

Platforms can create a virtuous cycle.

Adding users makes the platform more attractive to developers.

More developers means more “apps.”

More apps means more users,

which makes the platform more attractive to developers.

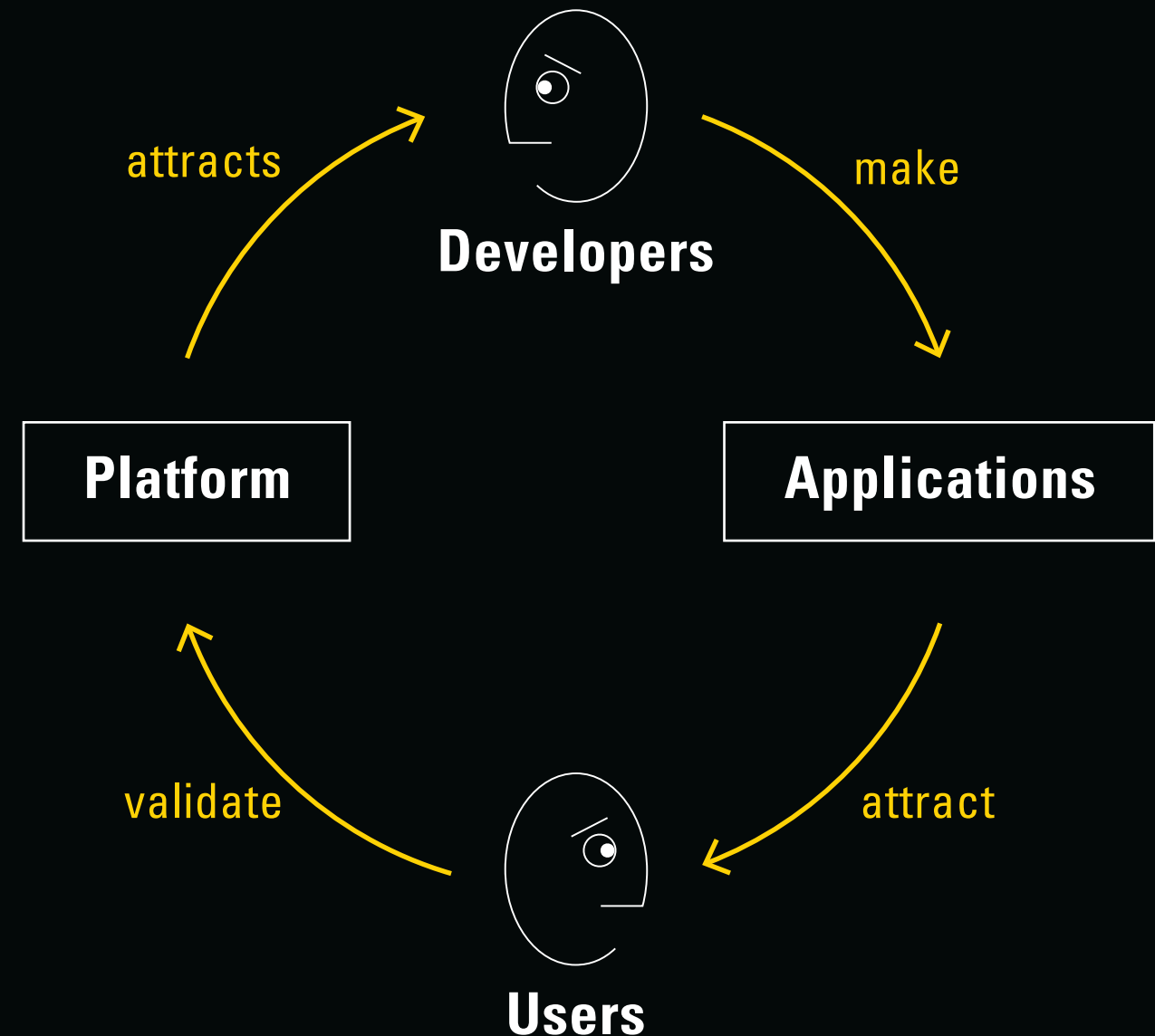
Platforms can also benefit from increased connections.

Each new user can make the platform more useful to all users.

Facebook is more interesting the more of your friends are on it.

Each new app can make the platform more robust for all apps.

Consider IFTTT, which connects iPhone apps.



***Technology platforms* may be the most common type; they are often described in terms of a *stack* or *layers*. Microsoft provided a platform for developing PC apps—and fostered loyalty with both developers and users.**

Local Documents

.doc, .xls, .ppt, etc.

PC Apps

Word, Excel, PowerPoint, etc.

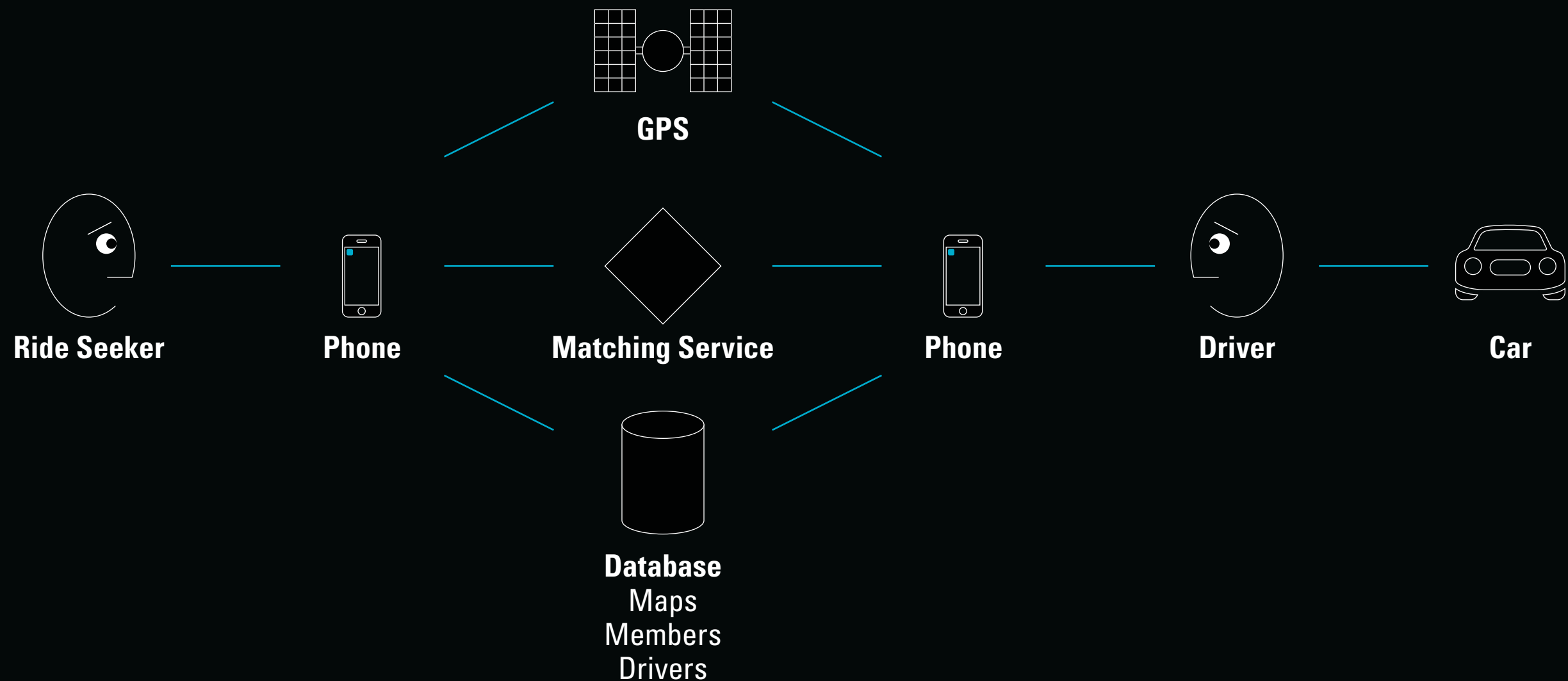
Operating System (OS)

Windows

Processor

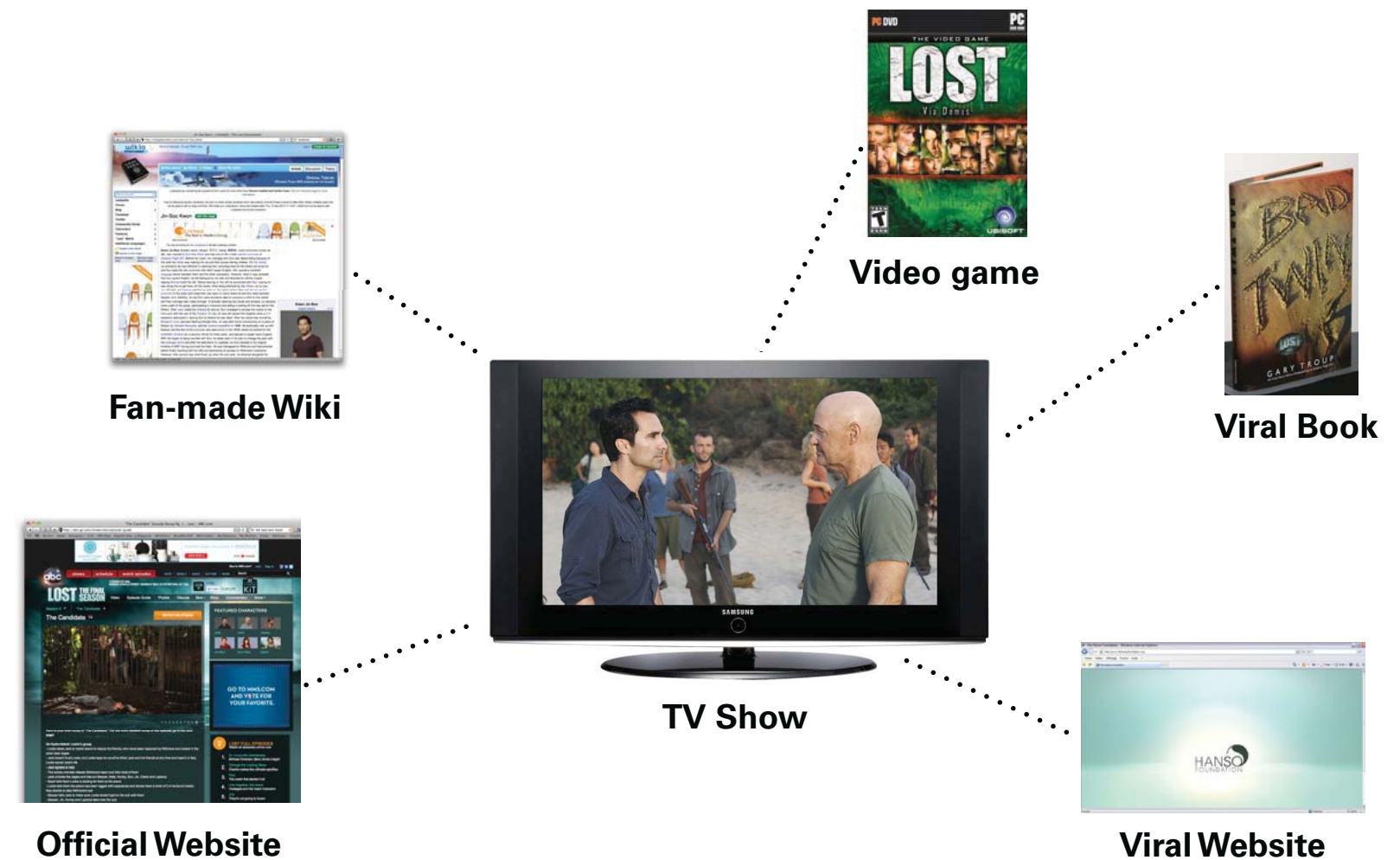
8086, 80286, 80386, etc.

***Business platforms* are also common;
often described as *making a market or match making*.
Uber matches riders with drivers, taking a cut of each transaction,
while also building a loyalty with both parties.**



Content platforms or franchises are less often discussed; they create *story-worlds* that audiences can inhabit.

Lost is more than a TV show; it's a setting with its own rules and characters than can be combined in a series of stories, which engage audiences on many levels.

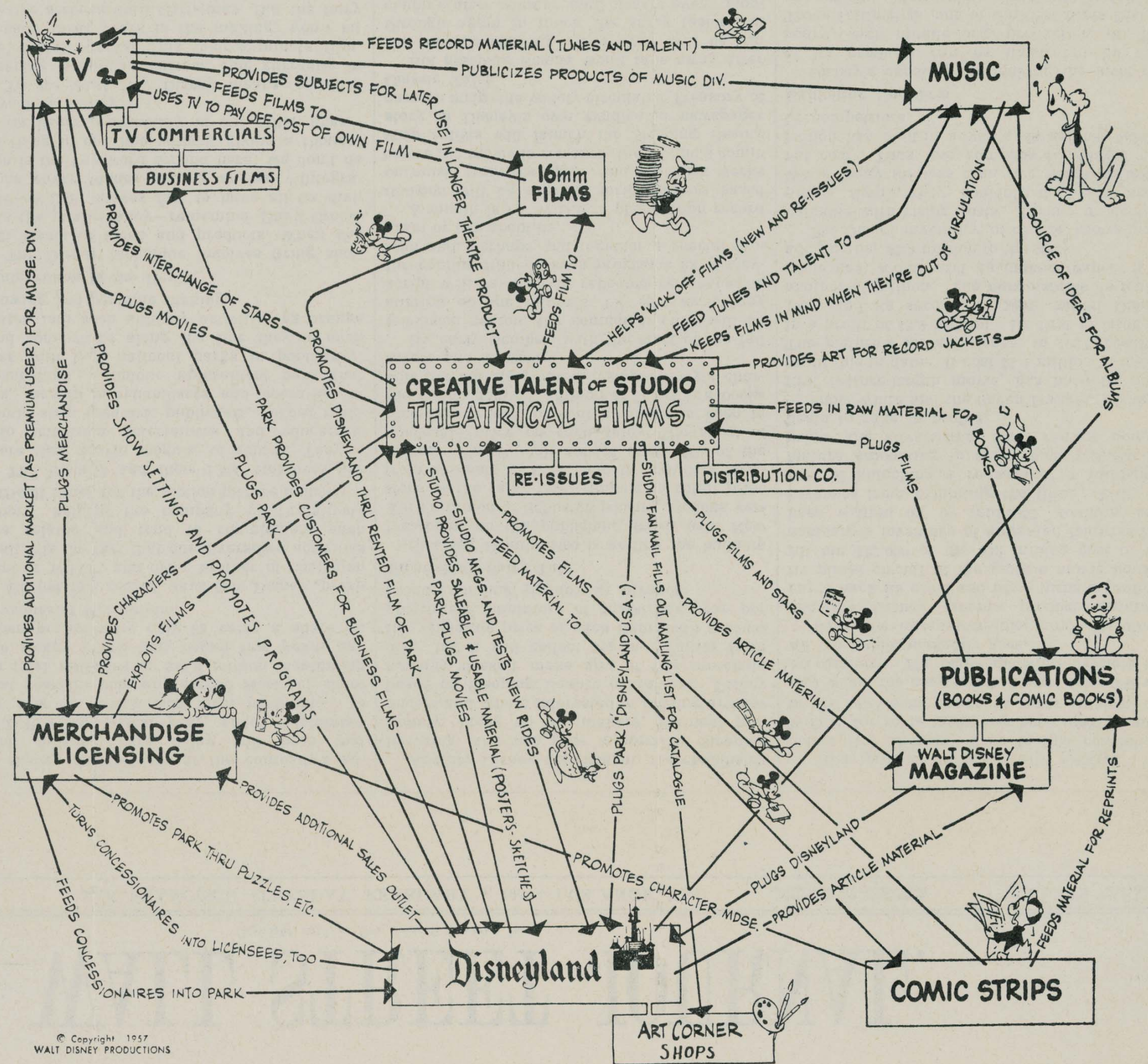


Disney understood networked platforms early.

“Disney is always inventing more ways for you to love the mouse.”

— Larry Keeley

Each new princess is a new platform.



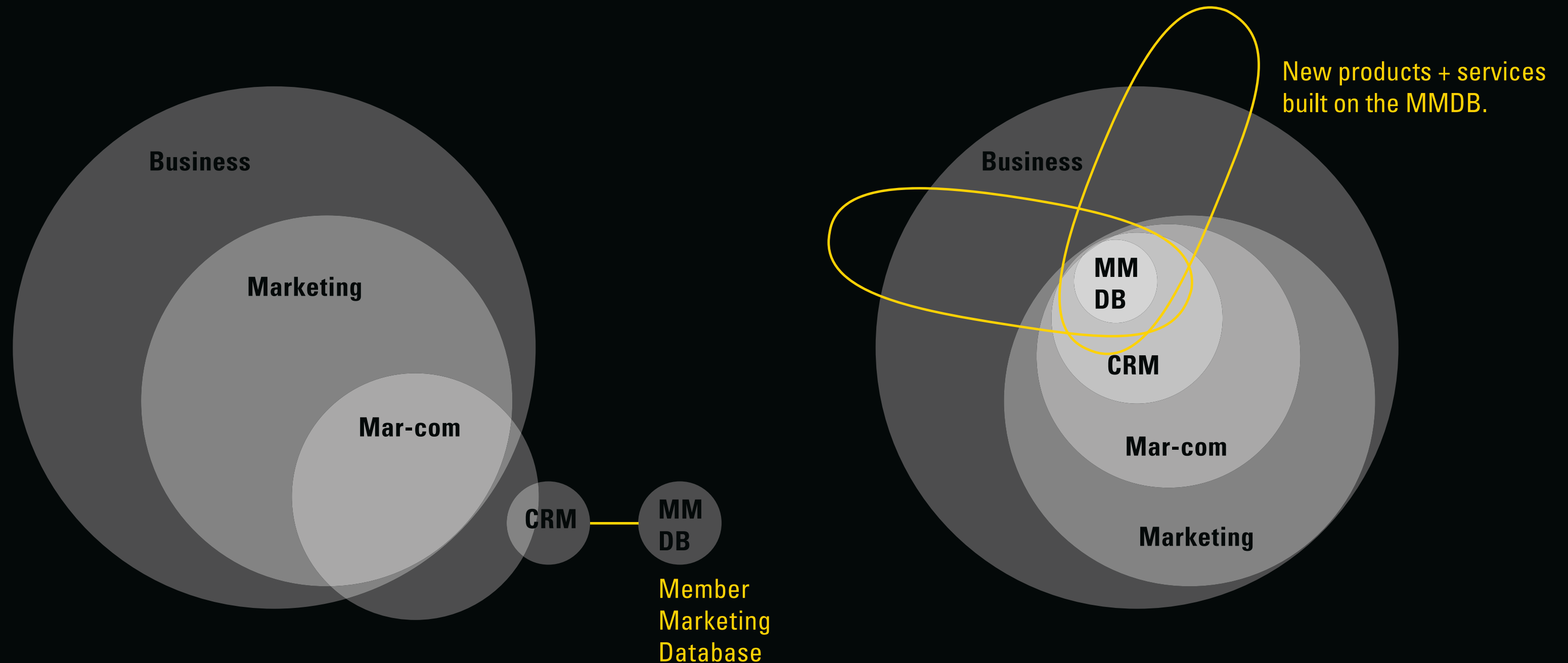
***Combinatorial platforms* often form the basis for products; users meet their needs by choosing from a palette of options.**

Starbucks' printed menu includes less than two-dozen items; yet users can "configure" 200 million different espressos.

The tailoring and language help users connect with Starbucks.

Cup type	To-go	For-here	Personal cup		
Drink type	Warm	Iced			
Kind of espresso	Regular	Decaf	Half-caf	Tea	None
Amount of espresso	Single	Double	Triple	Quad	N shots
Drink size	Short	Tall	Grande	Venti	
Milk type	Non-fat	2%	Whole	Soy	(2 more)
Syrup combinations	(Choose from about 15 flavors)				
Whipped cream	w/ Whip	No whip	Light whip		
Temperature	Extra hot	Cooler	Specific degree	Standard (160°F)	
Build order	Upside down	Right-side up	Macchiato	Otherwise	
Long/Short pull	Long	Short	Normal		
Amount of foam	Dry	Wet	Normal	None	
Amount of syrup	1 pump	2 pumps	3 pumps	4 pumps	N pumps

Engagement platforms recognize and understand users; and by responding in relevant ways, they build relationships. CRM is now core; you have to know your customers in real-time.



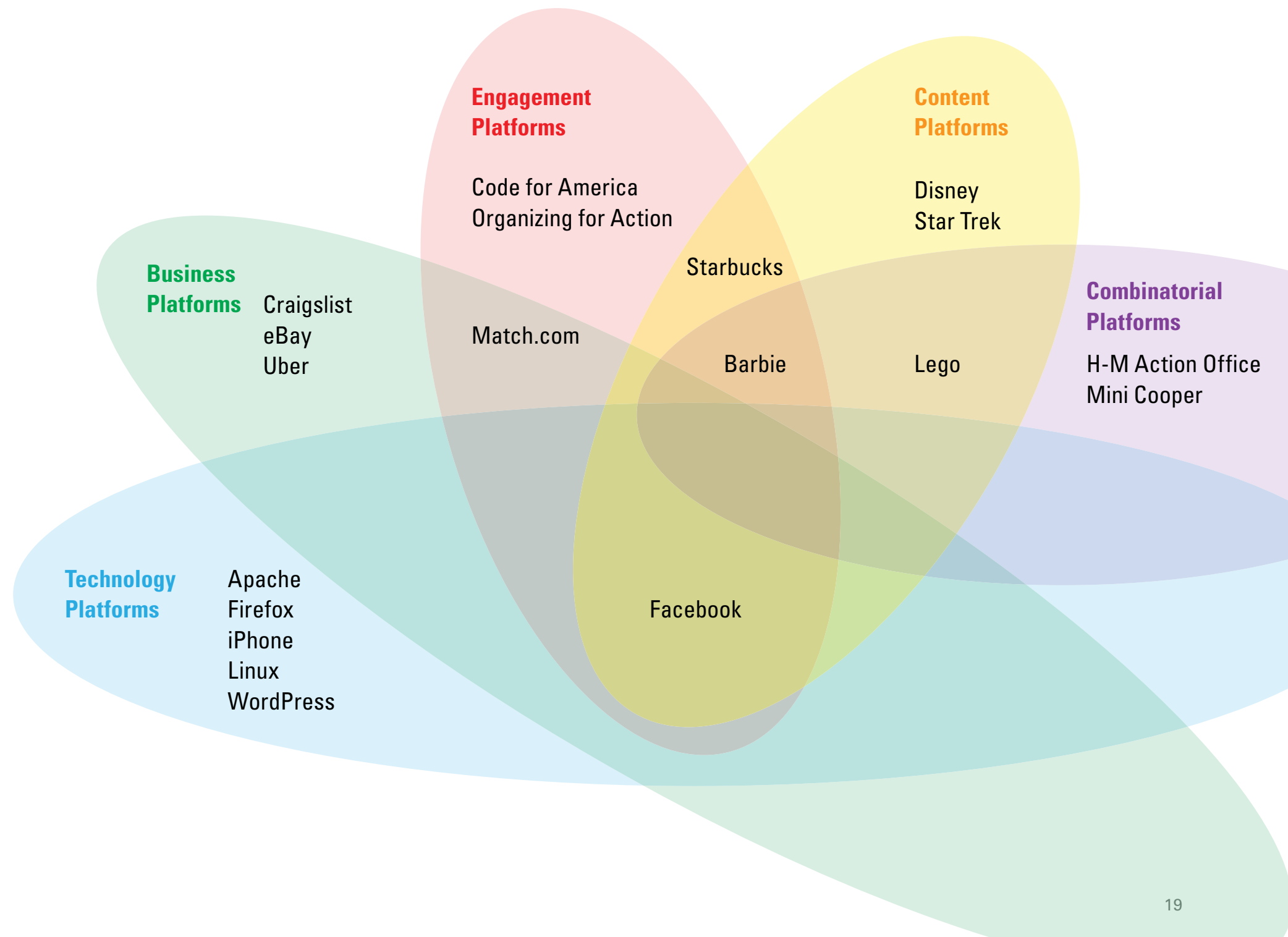
Platform types are not mutually exclusive; smart companies leverage platforms in multiple dimensions.

Facebook is a **tech platform**;
it has APIs for third-party apps.

Facebook is a **business platform**,
bringing together buyers and sellers.

Facebook is an **engagement platform**,
learning about its users.

Facebook is a **content platform**,
creating a space in which users play—
as well as a space for sharing content.



Platforms differ from simple products or services by opening a space for others to build new products or services.

Successful platforms have five key attributes:

- 1 **Core services**—a foundation on which to build
- 2 **Rules**—clear methods for using the core services
- 3 **Open access**—ways to reach the core services
- 4 **Discoverability**—ways for others to find the platform
- 5 **Platform thinkers**—developers who think in a new way

Each platform attribute may be dialed up or down—perhaps access is partially gated as with iOS app development, or perhaps limited to college students as with early Facebook, or perhaps it's not yet in some cities as with early Uber.

By enhancing each attribute, and exploring each platform type, developers can extend the platform, making it more valuable for others, and thus increase the platform's value.

Smart companies, smart managers, and smart developers are moving from *product* thinking to *platform* thinking.

	Industrial Age Product Thinking	Information Age Platform Thinking
Product	Proprietary, made for... Buyers consume things	Open, co-created with... Members make meaning
Price	One-off transactions Goods for cash	On-going relationships Convenience for data
Promotion	Mass broadcast	Individual conversations
Place ^[1]	Carefully built channels Sellers distinct from buyers	Direct access, anytime, anywhere Blurring of inside-outside boundary
Physical evidence	Periodic sampling	Real-time feedback plus analytics
People	Good managers Planning (manager as commander) Find the right strategy	Good hackers Learning (manager as mentor) Understand customers and context ^[4]
Process ^[2]	Coherent, regular Central control Serial stage gates	Responsive, particular ^[5] Distributed responsibility Massively parallel debugging
Purpose ^[3]	Commerce, a big idea	Shared purpose, a big ideal ^[6]

Footnotes

- [1] 4Ps, Jerome McCarthy
- [2] 7Ps of Service, Bernard Booms and Mary Jo Bitner
- [3] Responsive OS, Aaron Dignan
- [4] Shelley Evenson
- [5] Austin Henderson
- [6] Steve Hayden

Platform thinking is based on a set of values.

They include:

- **Flexibility**—acceptance of ambiguity and change as the way of the world
- **Improvisation**—bias to action, fast iteration, and continuous improvement
- **Performance**—belief in meritocracy and reliance on data
- **Openness**—faith in collaboration, sharing, transparency, and diversity
- **A whole-systems view**—a desire to make connection, create feedback loops, and create conditions for emergence

These values tend to be the opposite of the values that built large hierarchical manufacturing businesses; instead, they tend to be the values of software start-ups and movie production companies.

**What platforms offer is speed and agility—bootstrapping—
a way to get unstuck, move quickly, and change the world.**

When you have a platform—
core services, rules, open access, discoverability,
and the right thinking and values—
others can extend your platform,
creating new products or service that you never imagined
and never had the resources to create,
increasing the platform's value exponentially.

That's platform thinking for a platform world.

Special thanks to

John Cain

Jodi Forlizzi

Paul Pangaro

Ryan Reposar

Jamie Ikeda

hugh@dubberly.com

Presentation posted at

systems.dubberly.com/platforms_20201020.pdf