WAYS TO CAPTURE VALUE IN DATA IN THE DIGITAL ERA

X-UNIVERSITY

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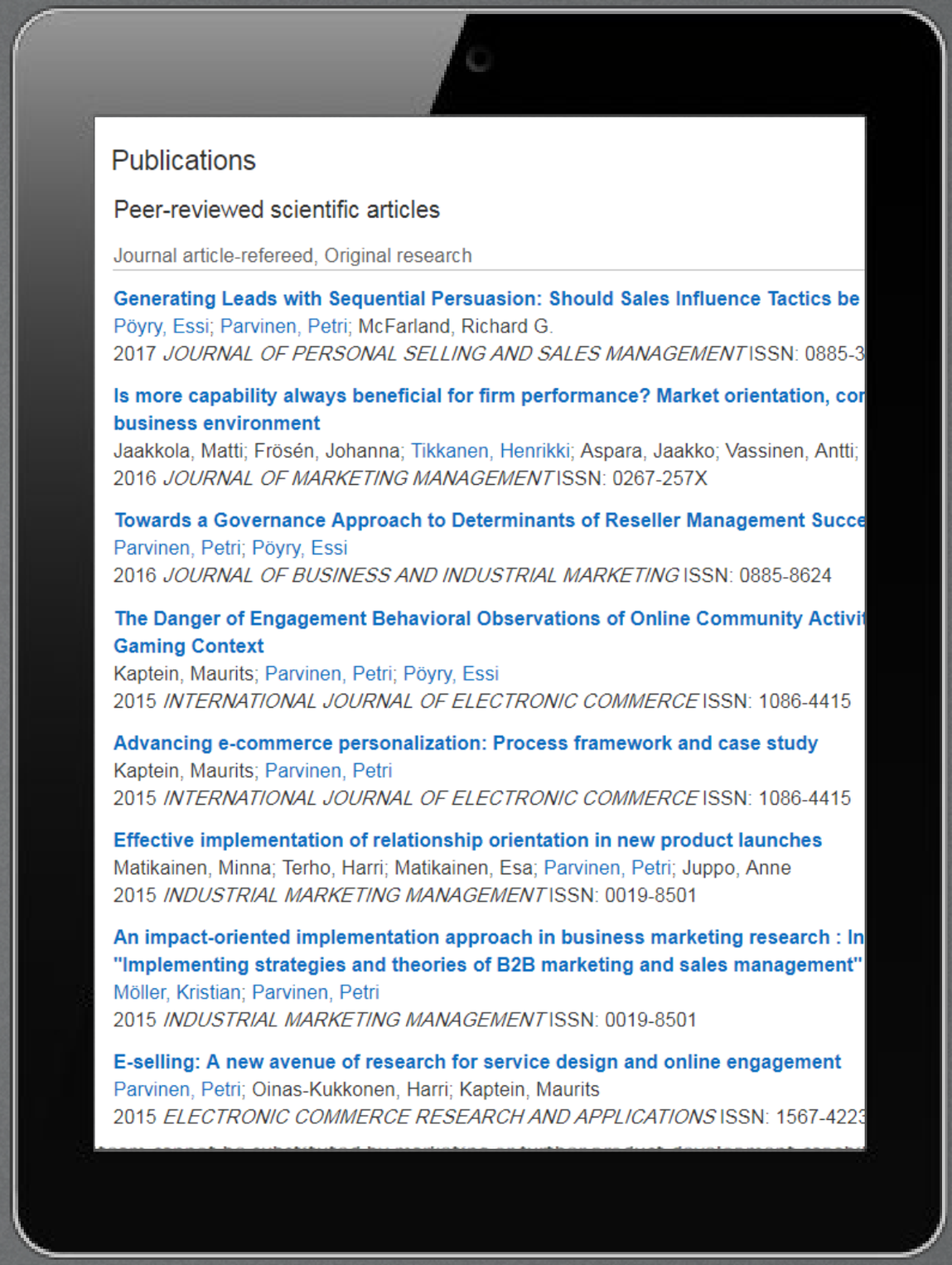
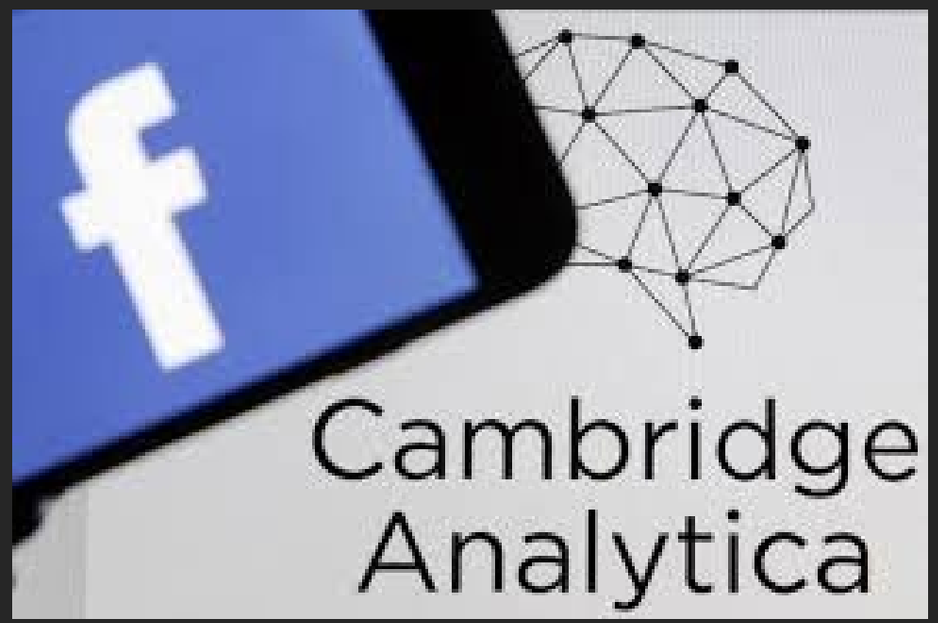
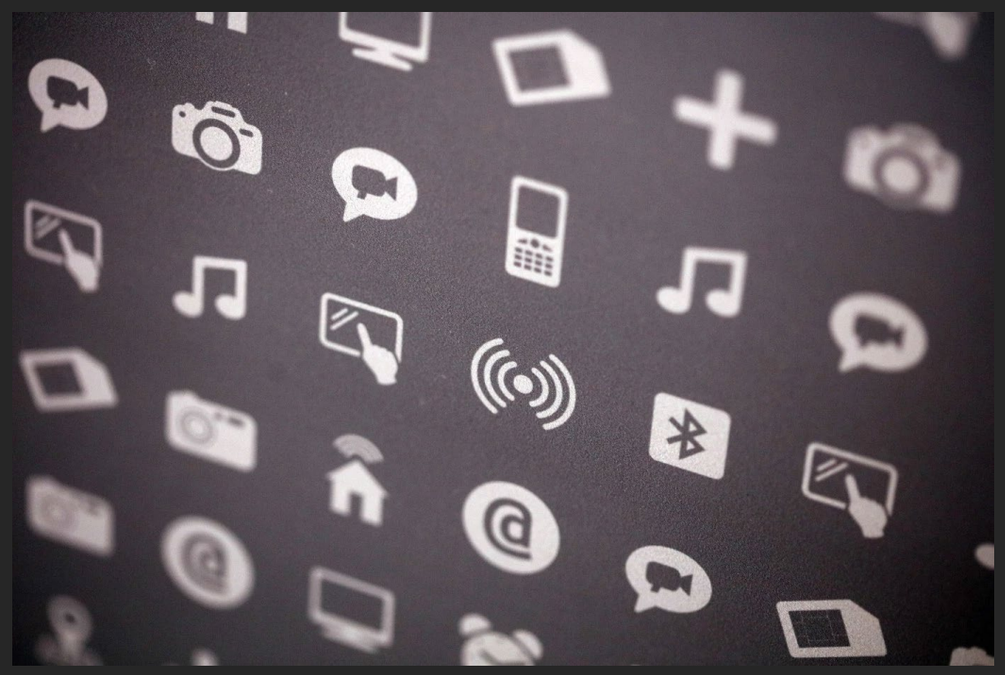
MY TEAMS & AREAS

+ Innovation selling
+ Interaction psychology online: MR and Bayesian algoritms
+ Channel optimization
+ Value-based selling

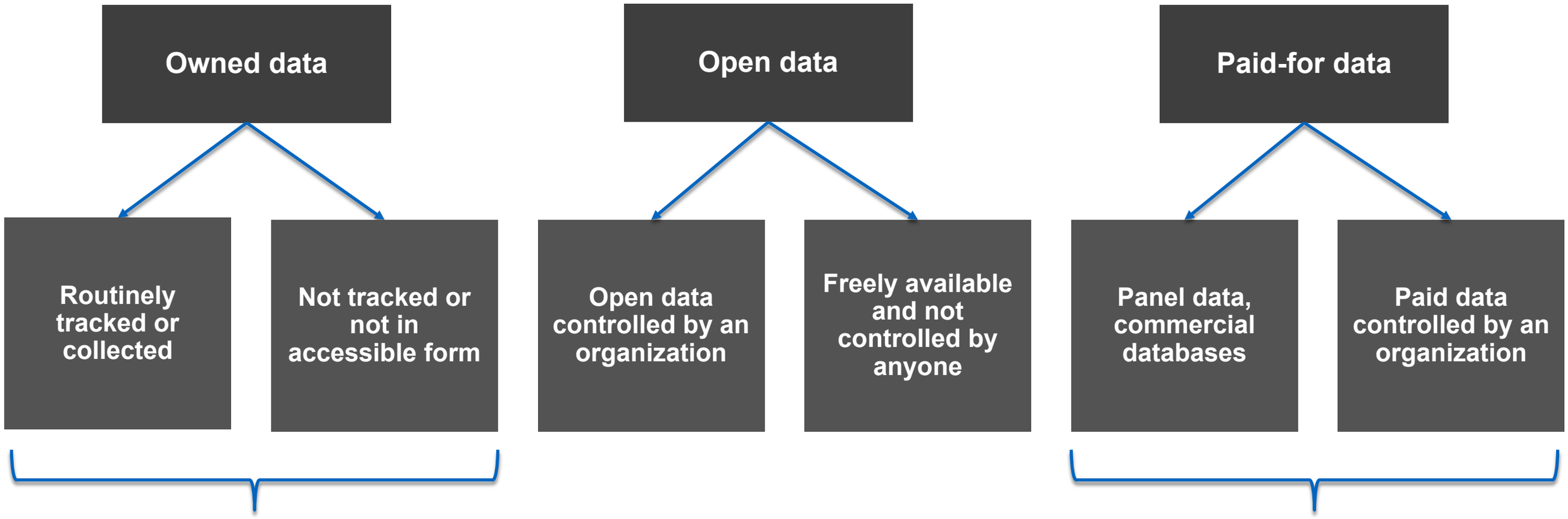




TechCrunch Sept 7, 2018: Dozens of popular iPhone apps caught sending user location data to monetization firms



What data are we talking about?



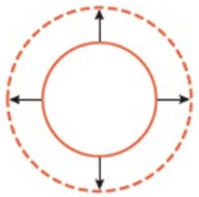
Data-driven business models (Hartmann et al. 2016)

Key data source	Business model	
	Data-as-a-service	*Analytics-as-a-service*
Freely available	Free data collector and aggregator	Free data knowledge discovery
Customer provided	Data-aggregation-as-a-service	Analytics-as-a-service
Tracked and generated	Data generation	Data analytics
Multiple data sources	Multi-source data mash-up	Multi-source data analysis

What data are we talking about?

Use cases	Industrial manufacturers	Consumer services	Knowledge-intensive business services
Market research and sensing	X	X	X
Product development	X	X	
Advertising targeting		X	
Logistics and operations planning	X	X	
Benchmarking and best practices	X	X	X
Behavior change systems		X	X
Monitoring, surveillance, security	X	X	

7.2018 THE ‘EDGE’ APPROACH (Lewis and McKone, 2017)

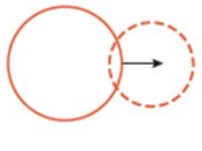


GROW THE EXISTING BUSINESS

Grow revenue by increasing current efforts or trying to improve the core business.

Examples: Market share growth; pricing efforts; international expansion.

Key Considerations: Doing more of the same can often be copied, can have diminishing returns and is often insufficient, particularly in mature businesses.

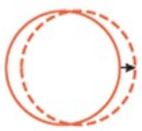


CREATE NEW BUSINESSES

Offer new products and services that may or may not be related to the existing business.

Examples: Search for uncontested market spaces; horizontal or vertical M&A.

Key Considerations: Steps into the unknown and is often high risk. For example, there are nearly 40,000 corporate mergers annually in the United States, but analysis shows that 60 percent of them destroy shareholder value.



IMPLEMENT EDGE STRATEGY FRAMEWORK

Optimize current investment by unlocking value on the periphery of existing businesses. Edge strategy frameworks leverage investments already made and risks already taken.

Examples: Create customer options that better monetize or slightly extend existing products and services; harvest existing assets in new, creative ways.

Key Considerations: Requires deep understanding of how all customers' needs vary. Also requires deep understanding of the value of existing assets.

1. The usefulness of data is indiscriminate.
2. Data fluency, or the ability to analyze and understand data, is increasing.
3. Data is a product.
4. Consumers value data, too.
5. Renting data to other users is easy.
6. The value of data can be disproportionately large for users outside your enterprise.

Some examples of early owned-data based business models (Pöyry & Parvinen, 2017)

- Aggregated and anonymous data from sensitive registers
- Signaling service – real time feed for timing operations
- Trend prediction and alerts, cf. social media analytics companies
- B2B data sharing economy cf. central associations/unions (“who is moving where”)
- Credit score business
- Intention-based marketing
- Purchase avatars (“I am currently buying X and Y”)
- Corporate data room for sale
- Plug into our logistics network
- Plug in with your after sales
- Preferred partner service based on availability information (“get before runs out”)
- Social circles information (“your kind of people are going X and doing Y”)
- Money-for-my-recommendations/network
- Selling store-specific information to vendors
- Reselling paid-for KIBS information (consulting reports, market research, etc.)
- Outsourced / managed service model based on data classification
- Raw data through API-plugins

Data-driven business models (Hartmann et al. 2016; Laitila 2017)

Key data source	Offering		
	Data/signals	*Analytics*	*Platform/service*
Open data	pacific data partners, Futusome, asiakastieto.fi, INTELIUS Live in the know.		
Service users and customers	vodafone, patientslikeme, market data, Telefónica — **Open data commercialization**	Tamro a PHOENIX company, FOURSQUARE ANALYTICS, WHOLE FOODS MARKET, BARCLAYS — **Selling data-analytics services and benchmarking**	Google, ORACLE DATABASE, DoubleClick by Google, nest, Santander — **Own-data based productied data service**
Business operations and sensors	TOYOTA, UnitedHealthcare — **Selling own data**	Cargill	
Bought data		MERKLE TRUTH IN DATA. PROOF IN PERFORMANCE., Autovista Intelligence, An Autovista Group — **Selling industry analytics services**	posti, ADARA, acxiom, DATAFLOO Connecting Data and People — **Data brokers**

Degree of understanding of customer's use case / Degree of productization

Starting a new business of selling and monetizing the data of existing companies: Examples

UnitedHealthcare®

Optum Insight:
Selling claim form data (health services) to drug companies
Annual revenue 8,1 billion dollars.

TOYOTA

Selling car GPS data (speed and position, traffic) to e.g. TomTom and municipal planning departments, corporate delivery fleets at $2,000 a month.

Tamro
a PHOENIX company

Selling analyzed data about end-user drug purchases to pharmaceutical manufacturers and other suppliers, selling pharmacies info about their own sales and selection compared to competition.

Why do B2B customers currently buy data? (Laitila, 2017)

1. **Improve own business or products**
2. **Acquire business intelligence**
3. **Understand competitors**
4. **Sense market trends**
5. **Data aggregators buy to combine – the more original, the more is paid**

Barriers preventing monetization (Laitila, 2017)

- **Potential benefits do not outweigh acknowledged risks**
  - Threat of weakening position of trust
  - Small evaluated monetary benefits
  - Lack of customers' demand for monetization offerings
- **Other data related projects are prioritized before data monetization**
  - Prioritization of internal data projects
  - Prioritization of customers through current products and services
- **Organization's culture nor capabilities are not suitable for monetization**
  - Experimentations and risks avoided
  - Data is not shared outside the organization
  - Lack of support from management
  - Lack of skillful employees
- **Data is not easily available nor in good shape**
  - Insufficient data quality
  - Weak access to data
  - Ownership of data
- **Privacy and legal issues cause careful approach**
  - Strict industry specific regulations
  - GDPR causes carefulness
  - Secure solutions are required

Step-by-step process of getting into the data business (Laitila, 2017)

1. Understanding the possessed data and capabilities
2. Discussions with suitable partners
3. The quality of data and easy access to it are ensured
4. A subsidiary or a separate venture is established to develop monetization
5. The value of data is validated with a chosen partner
6. Increased the amount of paying customers
7. Processes and roles support the continuous monetization

Studying the business models of new data selling business: relevant literatures

How do new owned data business models emerge and develop?

New business business models

Data business

Digital business business models

Amit, R., & Zott, C. (2012). Creating value through business model innovation. MIT Sloan Management Review, 53(3), 41.

McDermott, C. M., & O'Connor, G. C. (2002). Managing radical innovation: An overview of emergent strategy issues. Journal of Product Innovation Management, 19(6), 424-438.

Stringer, R. (2000). How to manage radical innovation. California Management Review, 42(4), 70-88.

Zott, C., Amit, R., & Massa, L. (2011). The business model: Recent developments and future research. Journal of Management, 37(4), 1019-1042.

Parmar, R., Mackenzie, I., Cohn, D., & Gann, D. (2014). The new patterns of innovation. Harvard Business Review.

Hartmann, P. M., Zaki, M., Feldmann, N., & Neely, A. (2016). Capturing value from big data – A taxonomy of data-driven business models used by start-up firms. International Journal of Operations & Production Management, 36(10), 1382-1406.

Spijker, A. V. (2014). The new oil: Using innovative business models to turn data into profit. New Jersey: Technics Publications.

Opresnik, D., & Taisch, M. (2015). The value of big data in servitization. International Journal of Production Economics, 165(July), 174-184.

Thomas, L. D., & Leiponen, A. (2016). Big data commercialization. IEEE Engineering Management Review, 44(2), 74-90.

Wixom, B. H., & Ross, J. W. (2017). How to monetize your data. MIT Sloan Management Review, 58(3), 10-13.

Yousif, M. (2015). The rise of data capital. IEEE Cloud Computing, 2(2), 4.

Piccinini, E., Hanelt, A., Gregory, R., & Kolbe, L. (2015). Transforming industrial business: the impact of digital transformation on automotive organizations. Thirty Sixth International Conference on Information Systems, Fort Worth, 2015.

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: toward a next generation of insights. MIS Quarterly, 37(2), 471-482.

Lewis, A. & McKone, D. (2016). To get more value from your data, sell it. Harvard Business Review. Retrieved from https://hbr.org/2016/10/to-get-more-value-from-your-data-sell-it

Standing, C., & Mattsson, J. (2018). "Fake it until you make it": business model conceptualization in digital entrepreneurship. Journal of Strategic Marketing, 26(5), 385-399.

Empirical setup

Two customer ecosystems around data infrastructure&service providers

24 companies, both single and multi-respondent

3 discussion workshops for iteration of findings

Funneled interview structure:

Theme
Interviewee role in company
Data gathered
Data ownership
Data use
Data acquisition
Data value internal
Data value external
Data monetization
Selling raw data
Selling analytical services
External use and need for the data
Prerequisites for monetization
Barriers to monetization
Data competences
Realistic outlook of data business
Relative positioning within industry
Future goals of monetization
Preparation for future data business
Recap

Company	Industry	Number of interviewees
A	Construction	4
B	Construction	1
C	Energy	3
D	Energy	1
E	Finance	1
F	Finance	1
G	Finance	1
H	Forest	1
I	Health care	1
J	Health care	1
K	ICT	5
L	ICT	1
M	Industrial services	3
N	Industrial services	1
O	Manufacturing	1
P	Manufacturing	1
Q	Manufacturing	1
R	Media	1
S	Media	1
T	Media	1
U	Media	1
V	Retail	1
W	Transportation	3
X	Transportation	1
Total	**24**	**11**	**37**

Results

1. Digital business implies numerous advantages for data business models
    i. usage data accumulated automatically
    ii. digital customer relationships → data that organized in a useful way
    iii. data from digital sales and delivery channels can be sold (e.g. timing)
    iv. digital relationships and channels enable a rapid and cognitively simple transition
    v. digital business models make customers mentally prepared to pay for data
2. External pressure accelerates data monetization
3. Selling data usually starts with a partner model
4. Existing business and current key customer relationships are (over)prioritized
5. General frustration with the lack of reference cases and reference prices
6. Visionary, engaged business leadership is required by people
7. Regulation and legislation scapegoats, the underlying issue being fear of losing trust

Summary of research findings

Business models and organization	Pricing	Sales channels	Sales activities	Others
Visionary is needed	Perceived value very volatile	Sales are started in partnerships, but partners are not selected based on data-biz readiness	Data utilized for internal use in competing for current top customers	Siloed data vs. easy access
Business development lags behind tech capability	”The 10% rule”, many give data for as a side add-on for free	Selling data in pen channels data seen to compromise company brand	Very little systematic mapping of customers	Buying and selling data have no established practices
Innovation needs a separate organization	Data enhancement and servicizing data streams pump price up, but only large markets invest in raw data selling		Relationship between current vs. data business needs to be dealth with	Hypercompetition makes B2B customer buy data
Selling data sales competence is an alternative			The necessary push can come from large data volumes, new tech capability, market pressure or PSD2/GDPR	Data regulation increases conservativism even if little bad evidence yet
Two games: Selling operative signals vs. refined analytics				

Renting data

100x through extenal data vendor

Emergent typology of data monetization business models

Amount of customers →

Level of refinement ↓

Customer of monetization / Offering	Provided to current customers	Provided to actors in current value chain	Provided openly to anyone
Selling data	Sell aggregated data to current customers as an additional feature	Sell aggregated data considering end-users to current suppliers	Sell aggregated data on market activity to investors and authorities
Providing insights	Provide insights to current customers considering their business environment	Provide trend and demand insights to suppliers	Provide analysis of consumer demand to investors
Creating a scalable service	Provide a service, where customers receive information of business environment	Provide a service, where suppliers can analyze end-user consumption information	Provide a service, where investors can access the real-time information considering market trends

Cognitions force data selling business models to mature along paths despite disruption being technically possible

Amount of customers →

Level of refinement ↓

Customer of monetization / Offering	Provided to current customers	Provided to actors in current value chain	Provided openly to anyone
Selling data	1st path		3rd path
Providing insights			
Creating a scalable service	2nd path		

Selling and monetizing data as a new business model for a company is very much a question of overcoming multiple cognitive challenges simultaneously, e.g.

Tighter regulation helps, as it helps overcome a major cognitive challenge

Simple “10% of core system revenue” rule of thumb a major success

People want to see the visionary, engaged business leaders with the fallacy of “all the right answers” to overcome cognitive boundaries

Cognitive hurdle of renting or exchanging raw data despite many benefits

Managerial implications (so far)

1. **Utilize central position in value chain to collect data.**
2. **Discuss with multiple different partners.**
3. **Ensure good quality of and access to data.**
4. **Establish an independent team, subsidiary or company.**
5. **Validate data value with a chosen partner.**
6. **Create processes that support continuous monetization.**

… barriers?

X UNIVERSITY ASSIGNMENT

1. **Organize people into three category of teams in both countries:**

   TEAM 1: DOMINO'S PIZZA

   TEAM 2: NETFLIX

   TEAM 3: KAHOOT.IT

2. **Familiarize with the company and build a picture of what kind of data the company possesses**

3. **Suggest a business model – concentrate on what data, how to package it, who are the customers, partners if needed and how to arrange selling**

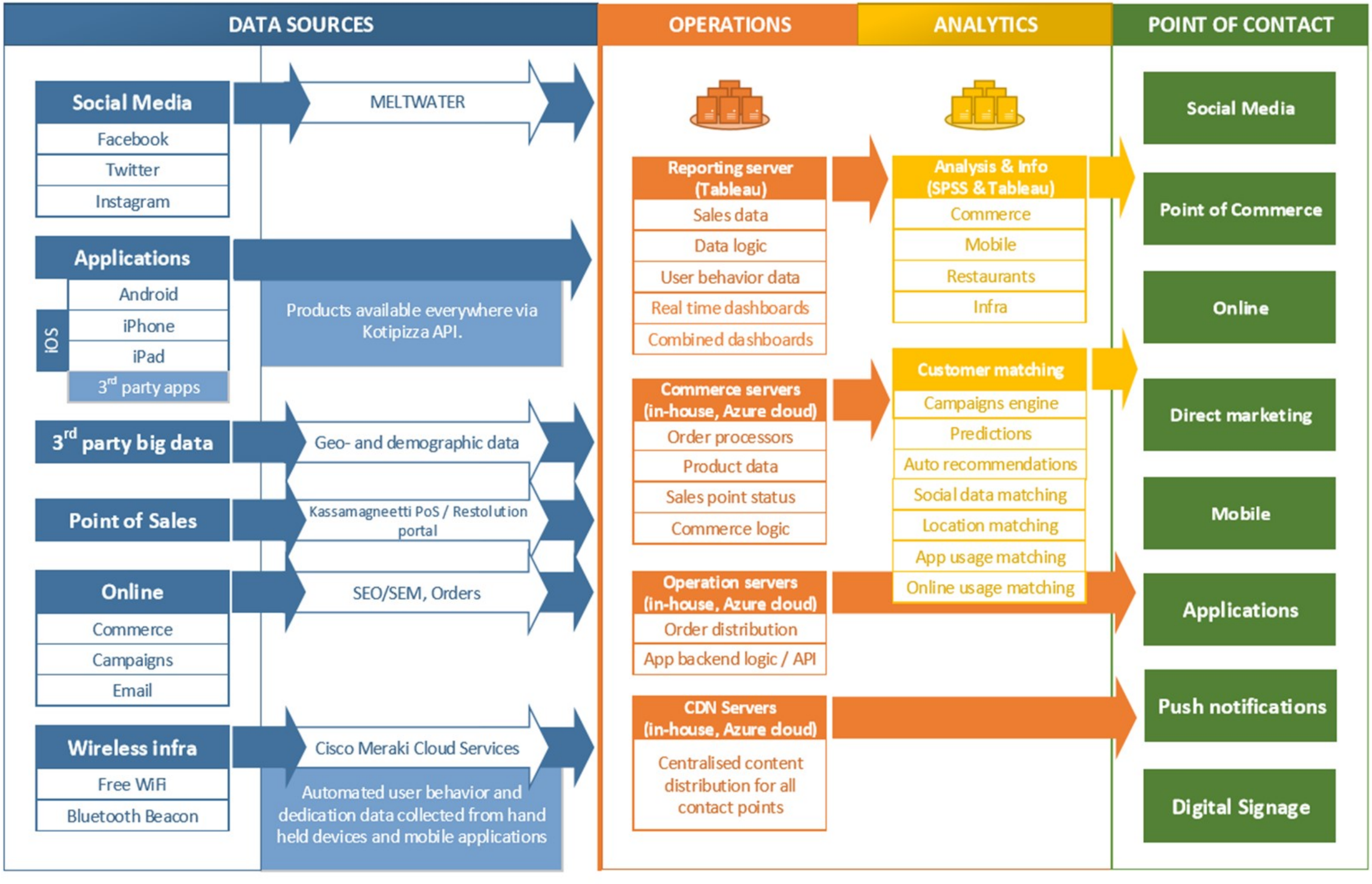
DATA DESCRIPTION: DOMINO'S

- https://www.talend.com/customers/dominos-pizza/?lang=en&_sft_industry=t-agriculture-food-beverage

- https://www.talend.com/blog/2018/06/13/how-dominos-pizza-is-mastering-data-one-pizza-at-a-time/

- https://biz.dominos.com/web/public/about-dominos/fun-facts

FRONT-END PIZZA DATA, EXAMPLE



DATA DESCRIPTION: NETFLIX

- https://www.youtube.com/watch?v=hTfIAWhd3qI
- https://www.slideshare.net/InfoQ/big-data-platform-as-a-service-at-netflix
- https://www.dexlabanalytics.com/blog/discover-interesting-ways-netflix-relies-on-big-data
- https://practicalanalytics.co/2015/06/11/databianalytics-evolution-netflix/

DATA DESCRIPTION: KAHOOT

- https://en.wikipedia.org/wiki/Kahoot!
- https://techcrunch.com/2018/03/16/kahoot/?guccounter=1

Kahoot.it is a very popular quiz application that is frantically looking for a working business model. It has already raised MUSD40+ in venture capital and is yet to make a dime of profit.

Selected refs:

- *Allen & Overy, The EU general data protection regulation, Allen & Overy, 2016.*
- *Jacob Bunge, Cargill releases data-analysis service for farmers, WSJ, 2014.*
- *Andrew Frank and Martin Kihn, Marketing Data and Analytics Primer for 2016, Gartner, 2016.*
- *Simone Jeurissen and Nick Martijn, Governing the Amsterdam Arena Data Lake, Compact, 2017/1.*
- *Alan Lewis and Dan McKone, To get more value from your data, sell it, HBR, 2016.*
- *Valerie A. Logan, Jamie Popkin and Mario Faria, Gartner CDO survey reveals that chief data officers drive both data management and analytics for maximum impact, Gartner, 2016.*
- *Arno van Rijswijk, Sander Swartjes and Ruurd van der Ham, Data Quality GS1, Compact, 2017/1.*
- *Edd Wilder-James, Breaking down data silos, HBR, 2016.*
- *Dan Woods, Do you suffer from the Data Not Invented Here Syndrome?, Forbes, 2012.*

Thank you!

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Selling data examples, examples (Laitila, 2017)

- **Telecommunications operator Vodafone sells its anonymized network data to navigator company TomTom (Mackenzie et al., 2014). Vodafone has real-time, location-based, data about its customers, from which TomTom can understand better movement on roads. This helps to optimize navigation, when there's more accurate information about traffic congestion.**
- **A transport company sells investors its real-time data considering global product shipments. This way investors can involve data considering marine vessels' movement and harbors' cargo data to their current business and economic forecasts (Brown et al., 2011).**
- **PatientsLikeMe, a social media for patients, sells anonymized data for partners such as pharmaceutical companies and medical device manufacturers. Data is patient-created and consists of information and experiences related to illness and treatments. (PatientsLikeMe, 2016)**
- **Toyota sells traffic data generated from cars to municipalities, corporate delivery fleets and city authors. The data users can utilize the bought data in infrastructure development and route optimization (Lewis and McKone, 2016)**
- **Ebay sells anonymized transaction data generated in its platform to interested third parties. This way the data originated from customer activity can be exploited to create additional revenue (Opresnik and Taisch, 2015)**

Providing analytical insight, examples

(Laitila, 2017)

- **Pharmaceutical distributor Tamro provides drug manufacturers and other suppliers insights about customers' spending regarding their drugs in specific locations (Tamro, 2017b).**
- **Tamro also offers its customers, pharmacies, information regarding their sales, products and other variables compared to their competitors (Tamro, 2017a).**
- **Barclays Bank sells anonymized retail benchmarks to UK retail chains, when compared the spending pattern of banks' customers' in different stores. Bank has valuable data about its customers' consumption behavior, which can be leveraged for other actors (Spijker, 2014).**

Scalable data service, examples (Laitila, 2017)

- **Google's smart thermostat product Nest monetizes the collected data by providing it to electric utilities (Dillet, 2014). Nest doesn't share actual data with utility providers, but provides them a chance to balance their energy grid. The provided insights about energy, appliance and utility usage are all packaged in the service, so the utility companies don't get hold on the data (Rossman, 2016).**
- **Foursquare has created Foursquare Analytics, where users' location data is analyzed and provided for other companies (Dent, 2017). Service utilizes data from Foursquare's location database, which is used by multiple different companies, such as Snapchat and Twitter. With this data, Foursquare can provide businesses information about their customers' consumption behavior, demographics and even routes.**
- **Barclays Bank provides a service platform for SME companies, where companies can get insights about business inflow and outflows and more analyzed data about payments and transactions (Barclays, 2016). This data is compared to similar businesses in similar locations, so SMEs can benchmark their gures to averages.**
- **Adara, a software company, uses data from multiple sources to provide advanced customer segments and profiles to partners from partners‘ data. This way partners, such as airlines, hotels, and travel agents, get refined information, which can be used to provide highly-specific services and advertisements (Spijker, 2014).**

ACXIOM

- https://www.acxiom.com/
- World’s biggest consumer data database
- Helps customers with targeted marketing
- Data mining, buying from other big companies, collecting

- http://www.tivi.fi/Uutiset/2012-06-18/Viranomaiset-kiinnostuivat-it-j%C3%A4till%C3%A4-enemm%C3%A4n-yksityistietoja-kuin-Facebookilla-ja-FBIll%C3%A4-3192846.html
- https://www.nytimes.com/topic/company/acxiom-corp

CARGILL

- Energy trading, agricultural products
- Software NextField DataRX based on its own big database
- Cargill has built a new digital product line to supplement its age-old business of selling crop seeds to farmers. By analyzing its large database of information on how its seeds performed in various types of soil and weather conditions, it built software called NextField DataRX that can give personalized advice to a farmer looking to increase crop yields. https://hbr.org/2016/10/to-get-more-value-from-your-data-sell-it

- New product for existing customers
- http://www.cornandsoybeandigest.com/precision-ag/adopt-big-data-or-else

- Similar products: Encirca Services Pioneer + Monsanto FieldView

DATAFLOQ

- https://datafloq.com/
- Big Data specialised company
  - Offers services, information, marketplace

- Datafloq offers information, insights, knowledge and opportunities to drive innovation through data. You can read high-quality articles, find big data and technology vendors, post jobs, connect with talent, find or publish events and register for our online training.

EPSILON DATA MANAGEMENT

- https://us.epsilon.com/
- Marketing services

- Data sources:
  - https://us.epsilon.com/data-driven-marketing-solutions/people-based-marketing-data-solution

INFOGROUP

- Data solutions, marketing, customer relationship
- http://www.infogroup.com/

- Database: http://www.infogrouptargeting.com/data-data-axletm-services/data/infogroup-consumer-database
- Huge consumer database
  - 230 million individuals
  - 155 million households

INTELIUS

- Public data provider
  - https://www.intelius.com/
- Employee screening, criminal records etc

MERKLE

- Marketing
  - Data collection, targeted marketing, consulting
  - https://www.merkleinc.com/who-we-are-performance-marketing-agency/fast-facts

ORACLE

- http://www.pcworld.com/article/3195265/data-center-cloud/oracles-next-big-business-is-selling-your-info.html
- Huge consumer database, starts selling?
- Oracle Data Cloud
  - https://cloud.oracle.com/data-cloud
- Combining self-collected and purchased data
- “Upgraded version of Facebook’s or Google’s targeted marketing”
  - Not tied to major platform as Facebook and Google mainly are

PACIFIC DATA PARTNERS

- http://www.pacificdatapartners.com/
  - B2B-focused data marketplace

Why Work with Pacific Data Partners?

- ✔ One stop for all B2B data types including professional, firmographic, and technographic data.
- ✔ Massive collection of over 50B records with global reach on numerous B2B data sets.
- ✔ Intersection of B2B and B2C data provides unique consumer attributes mapped to professional profiles.
- ✔ Regularly refreshed, highly accurate data.

TELEFONICA

- https://www.compact.nl/articles/capitalizing-on-external-data-is-not-only-an-outside-in-concept/#ref:

In January 2016, Telefonica announced they were launching a joint-venture in China to sell mobile consumer data. Besides their existing consumer base in several European and South American countries, Telefonica will now generate and sell anonymized and aggregated mobile network data on 287 million additional China Unicom users. The data is enriched with aspects such as social demographics, home and work location, modes of transport and other attributes, allowing sophisticated profiling. It is being used to find optimal locations for new store placement but also for safety initiatives such as crowd control.

TOYOTA

- Selling GPS data of its cars
- Existing data to new industry
- Toyota, the master of assembly line efficiency, has built a new business that takes advantage of the GPS navigation devices it installs in cars sold in Japan. It captures the speed and position of cars and sells traffic data to municipal planning departments and corporate delivery fleets at prices that start at $2,000 a month.
- https://hbr.org/2016/10/to-get-more-value-from-your-data-sell-it

UNITED HEALTH

- New business, project “**Optum Insight**”
  - Selling claim form data (health services) to drug companies
  - Annual revenue 5 billion dollars
  - https://hbr.org/2016/10/to-get-more-value-from-your-data-sell-it

WHOLE FOODS MARKET

- http://www.foodnavigator-usa.com/Markets/GUEST-ARTICLE-Whole-Foods-will-be-sharing-its-sales-data-again
- http://www.cpgdatainsights.com/get-started-with-nielsen-iri/data-source-retailer-syndicated/
- Grocery chain starts to share its consumer data in the US

XDAYTA

- http://www.xdayta.com/
- Data marketplace
- Allows customer to buy a data set and download it immediately
- Data sorted by different categories