Erasmus Center for Data Analytics

Expert Practice of *Digital Business*

Digital Business

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"AI-driven companies are likely to outperform traditional firms. However, this doesn't come easily. There are many challenges for businesses that embrace AI to compete with new digital rivals, spanning across data, algorithms, experiments, and operating models."

How does your company use advanced technologies / AI to **create value** today?

How *will* AI change the way how your company competes?

Five domains of strategy that AI is changing

| Customers | Competition | Data | Innovation | Value |

Areas of Expertise and Portfolio of Research

- **Value of Information Technology and AI**
  - Projects measuring the economic, societal, and business value of information & technology
  - Projects evaluating the impact of IT on individuals, businesses, markets, and networks
  - Projects on decisions makings in the age of AI
  - Projects on economic value and data privacy

- **Digital Commerce and Transformation**
  - Projects on digital, social, and mobile commerce
  - Projects on multichannel digital commerce

- **Digital Platforms**
  - Projects on platform design
  - Projects on personalization and recommendation on digital platforms
  - Projects on social media and user generated content

- **Digital Marketing and Advertising**
  - Projects measuring the effectiveness of digital advertising
  - Projects measuring the negative consequences of digital advertising

- **Pricing and Revenue Management**
  - Projects on dynamic pricing
  - Projects on customer-centric revenue management

Area of Expertise
- **Management science** (information systems, economics, marketing, strategy, operations)
- **Computer science**
- **Psychology**
- **Philosophy**
- **Linguistics**

Research Methods

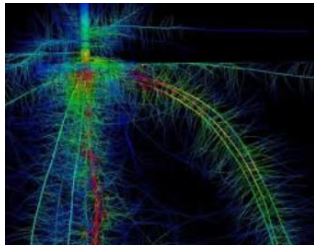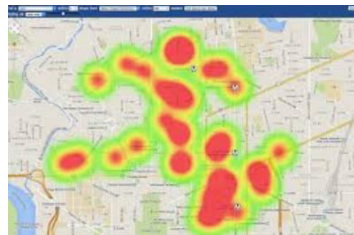In-depth Case Study
(Interview, Survey)
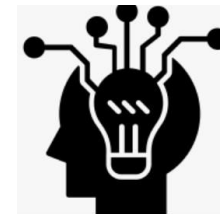
Big Data Analytics

Lab Experiment

Large-Scale Field Experiments
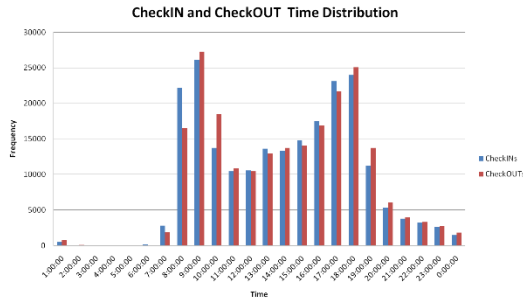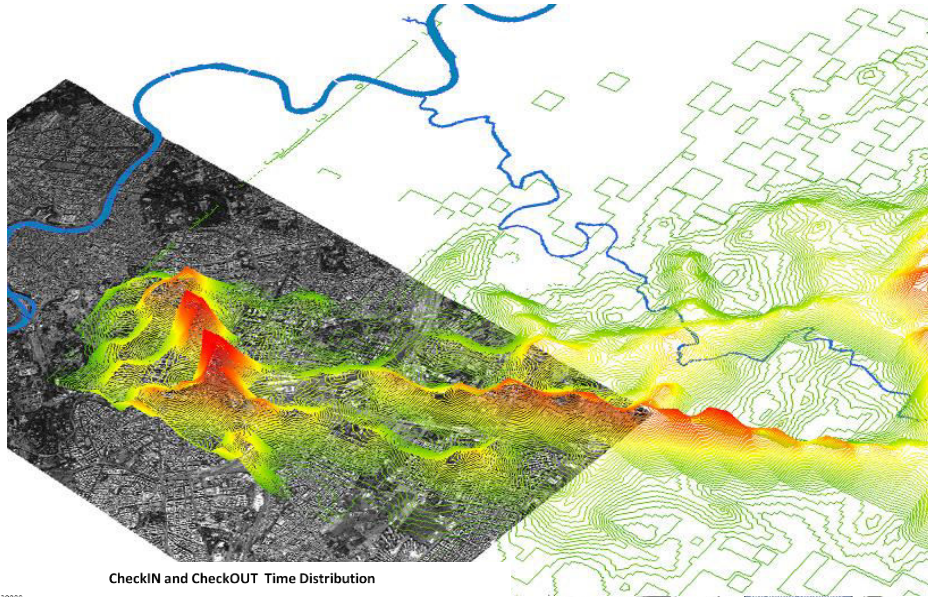(randomized control trials)
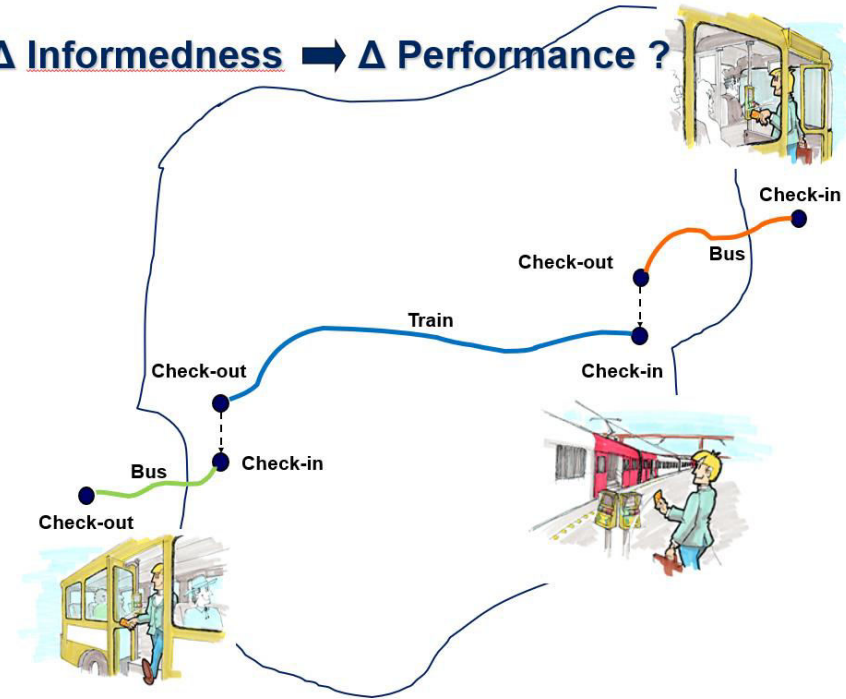
Agent-based Simulations

Eye Tracking

Machine Learning
(Text Mining, Sentiment Analysis)

Projects: Smart Card Data to Decipher Urban Dynamics
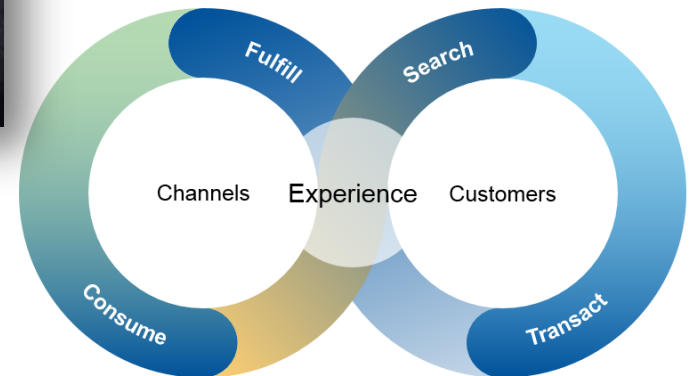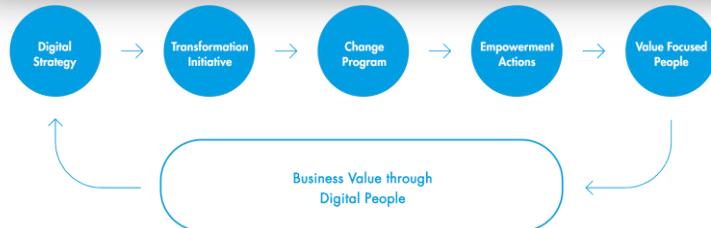
Δ **Informedness** ➡ Δ **Performance ?**

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- Customer-Oriented Digital Transformation in Multichannel Environment

- Proactive churn management with uplift modeling based price and service elasticity.

- Customer channel preference and human interactive channel in a multichannel customer support environment.

- Customer communication channel migration based on their digital capability and information seeking intensity.

- Life-event targeting with customer information uncertainty for marketing campaign strategies.

VIVAT

Digital Strategy → Transformation Initiative → Change Program → Empowerment Actions → Value Focused People

Business Value through Digital People

Fulfill   Search

Channels   Experience   Customers

Consume   Transact

Projects: Behaviour Revenue Management

Combine online clickstream data with offline traits to develop methods for personalized pricing

Data sources:
- **Customer data**
- **Sales data**
- **Contract data**
- **Advertising data**
- **Click stream data**

Projects: Digital Commerce

Begin Search 60% **Convert**

To serve the right products, services, messages (advertising) to the right customer at the right time at the right place on the right device.

- Large scale field experiments and statistical analysis.
- Including price in search advertising to reduce the cost of click-to-reveal behaviors.
- Studying the role of mobile devices along the customer journey.
- Discovering device interactions through the purchase funnel to bid on the right keyword on the right device.
- Designing personalization and customization in platform design

amazon cool blue wehkamp tweakers inner circle

Projects: Digital Platforms
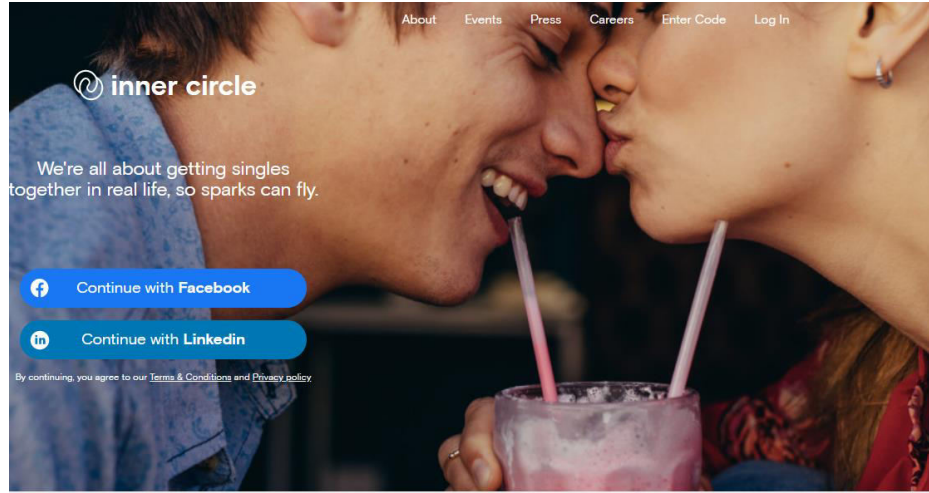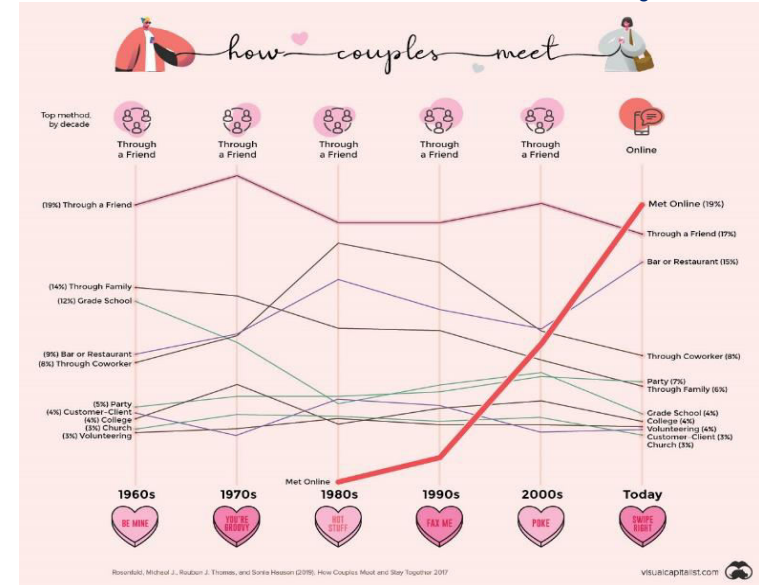
Analyze consumer online behavior to improve user experience on digital platforms
- **Personalization, customization, recommendation**
- **Referral programs, platform design**

# Projects: Digital Advertising and Auction Markets

Opening the black box of real-time advertising auction systems with the help of data and economic modelling.

- From unobservable variables to market insight.
- Detection of systematic opportunism for safer market operations.
- Modelling complex technological disruptions for policy recommendations and market design.

Projects: Smart Cities
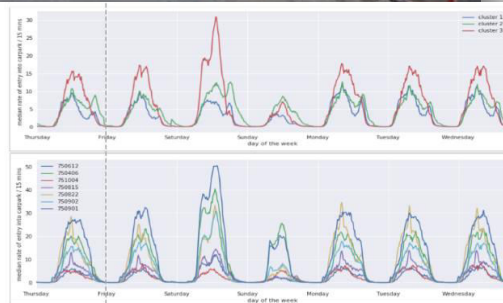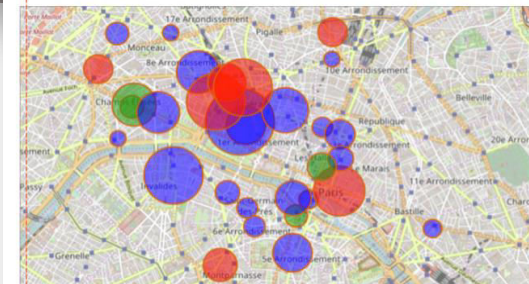
- From descriptive, real time data on capacity, use of parking spots, to predictive and prescriptive insights; Linking scan car data to community and societal benefits
- Assess technical, privacy, and ethical related challenges in making use of such data and create value for citizens, and society at large;
- Develop a platform that enables the analysis of urban community image data using economics, computer science (data mining and artificial intelligence), and operations research;
- Create interfaces for municipalities and (non-)profit-organizations to access to and develop applications based on such image data.

Digital Business Expert Practice Ecosystem of Partners

(A selection)

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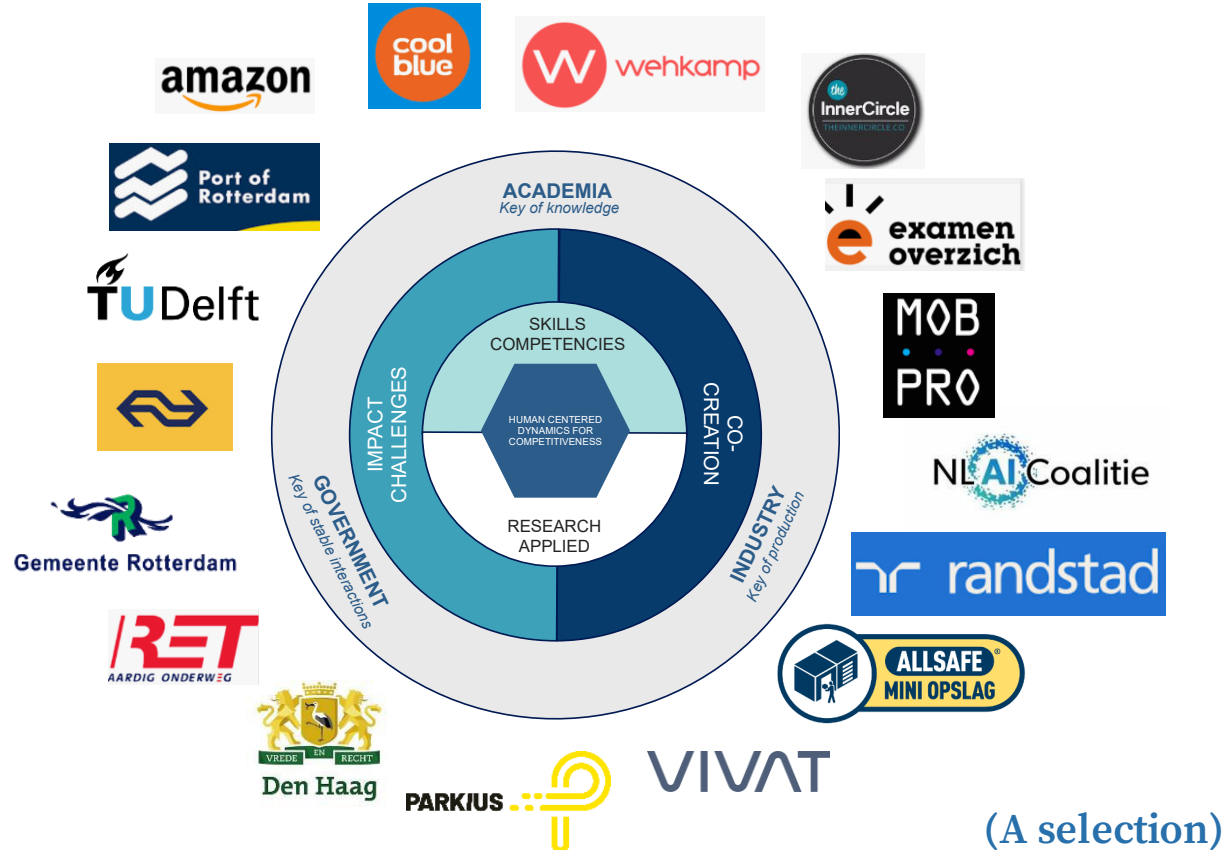
Passion provides purpose, but data drives decisions

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