

A black and white photograph of the Park Hyatt Vienna building. The building is a grand, multi-story classical structure with a prominent portico supported by columns. The entrance is illuminated, and the name "PARK HYATT VIENNA" is visible above the doors. The text "HYPER-PERSONALIZATION" is overlaid in large, white, sans-serif capital letters across the middle of the image.

HYPER-PERSONALIZATION

Crafting Tailored Experiences for
the Modern Consumer

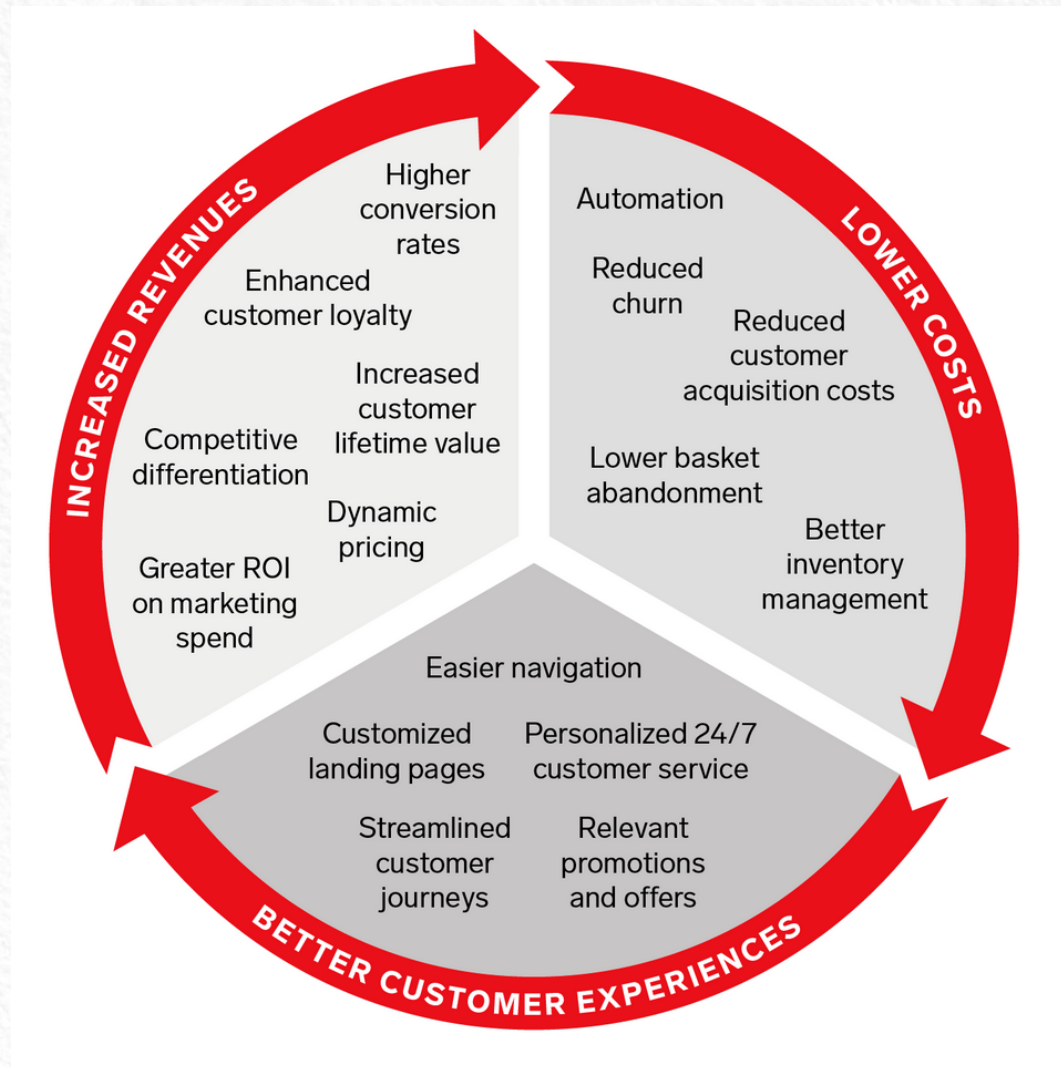
#FrostCX

○○○ About me



- 20+ years working in research and design (but I'm no designer)
- Start-ups to Fortune 100s
- UX Researcher, Strategic Planner, and former chef
- Hospitality, yes, but also everything from gyms to live fire exercises to surgeries

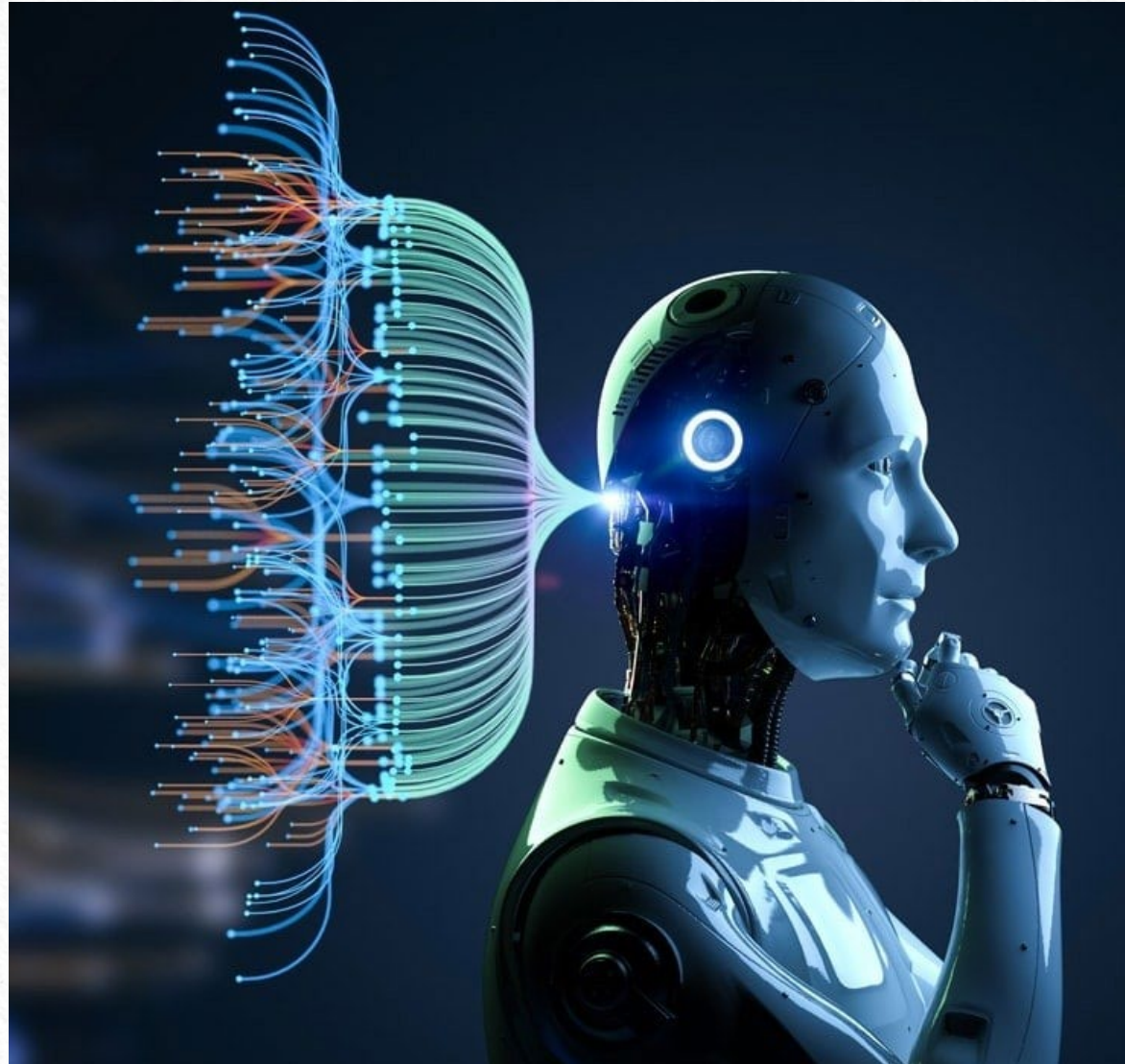
Hyper-Personalization



What Defines Hyper-Personalization

- **Proactive**
- **Predictive**
- **Individualized**
- **Targeted**
- **Contextualized**

○○○ Hyper-Personalization



Hyper-personalization, while offering significant potential, also presents significant challenges:

- Data privacy concerns
- Resource-intensive data collection and analysis
- Over-personalization
- Constant maintenance and adaptation
- Potential for algorithmic bias
- Data Accuracy
- And the list goes on...

○○○ Hyper-Personalization



Striking a Balance

- Aligning quant and qual data
- AI + People
- Tools to optimize the information streams
- Pitfalls and recommendations
- What drives (and how to avoid) creepiness



Quant Data: What and How



Large sample data is the backbone, but quantitative data alone is problematic:

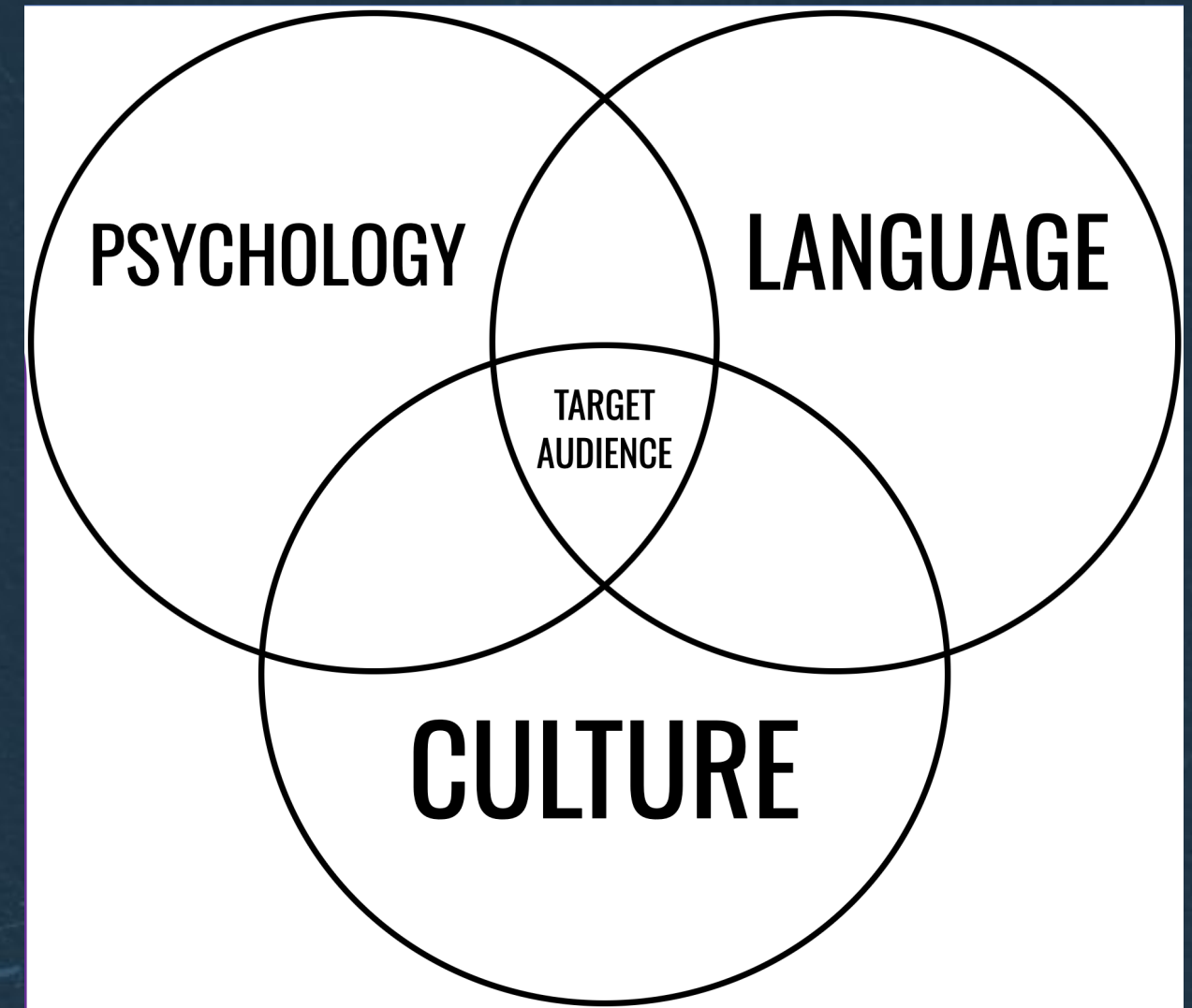
- Quantitative is incremental, so long-tail behaviors can be difficult to categorize
- Data accuracy can be easily skewed
- Data focuses on Individuals vs. Cohorts (i.e., relationships)

Qual Data: Why



Individual behavior is shaped by three overarching factors:

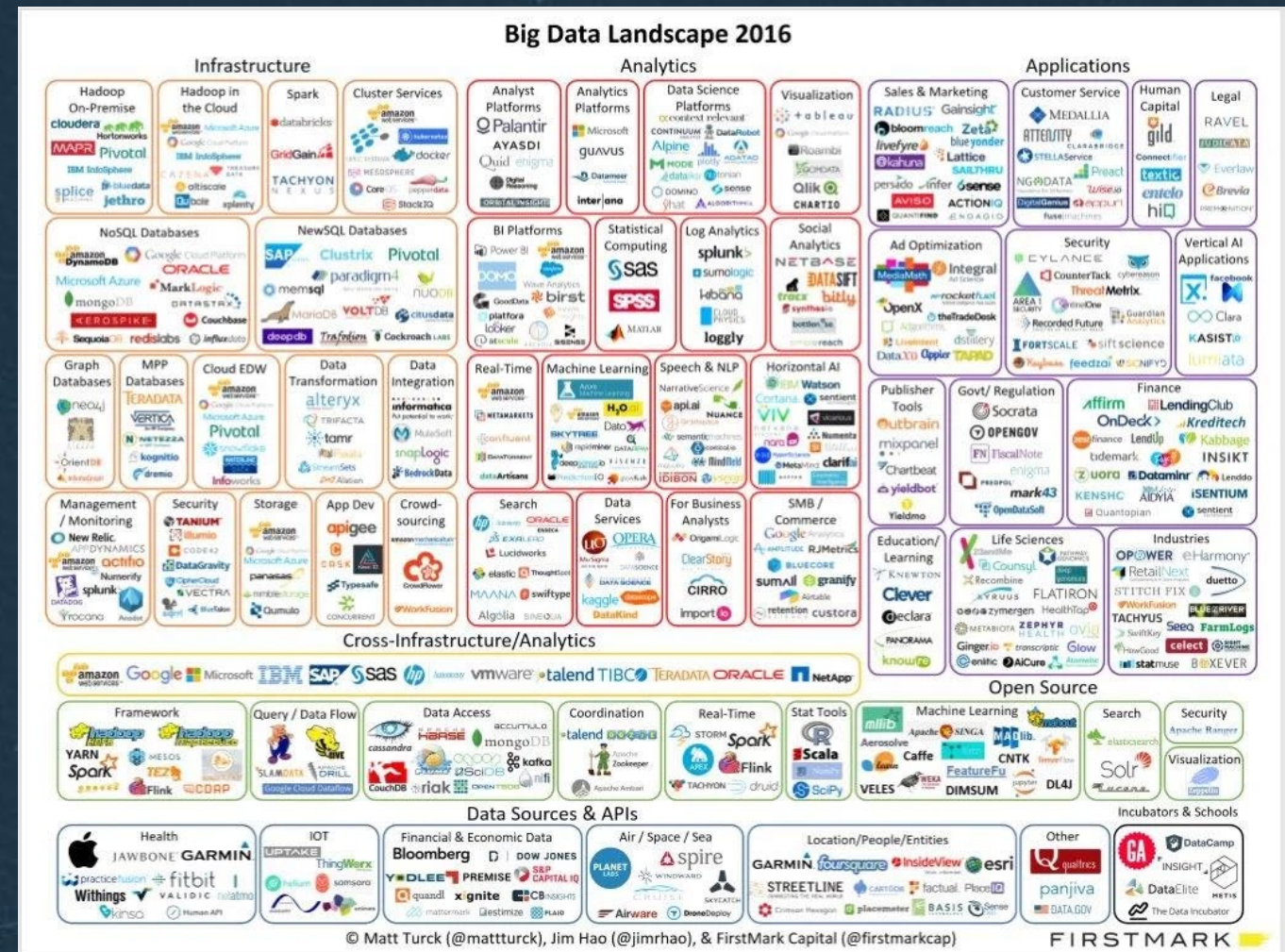
- Psychology: Taste, Temperament, and Experience
- Language: Semantics and Semiotics
- Culture: Shared worldview



○ ○ ○ The Promise of AI



- Removing clutter:
 - Identifying “noise” and feigned causality
- Connecting potential dots:
 - Aligning “outliers” and data through time
- Experimentation:
 - Increased opportunities for rapid test and learn



○ ○ ○ AI and Understanding Context

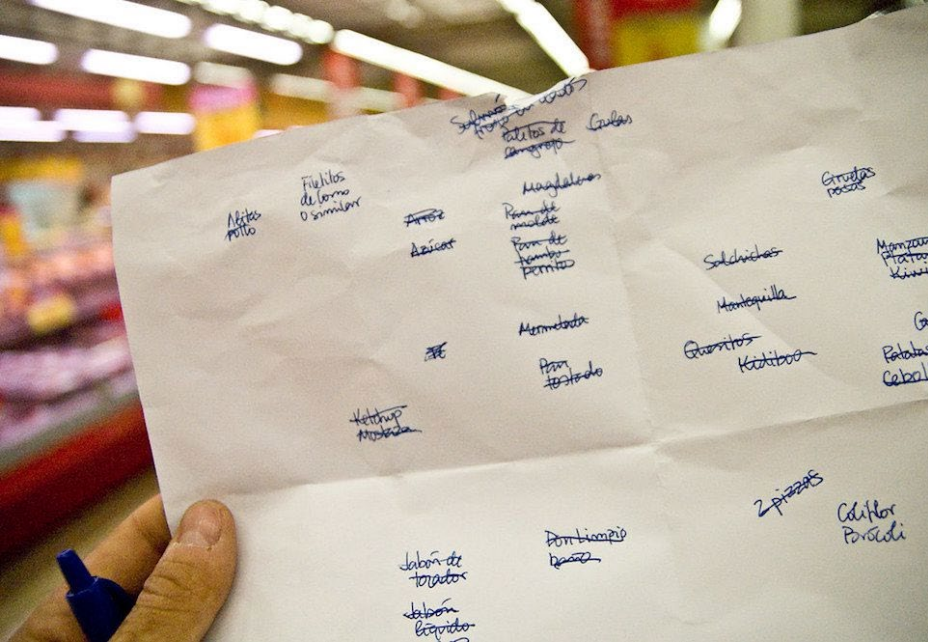


While the data may come from multiple sources, AI rarely understands the context:

- Shared interactions
- Culture
- Positive outliers
- Socio-political landscape
- Demographics
- Seasonality
- Time of day
- Emotion
- Religion
- Location
- The name of their dog...



FROST & SULLIVAN

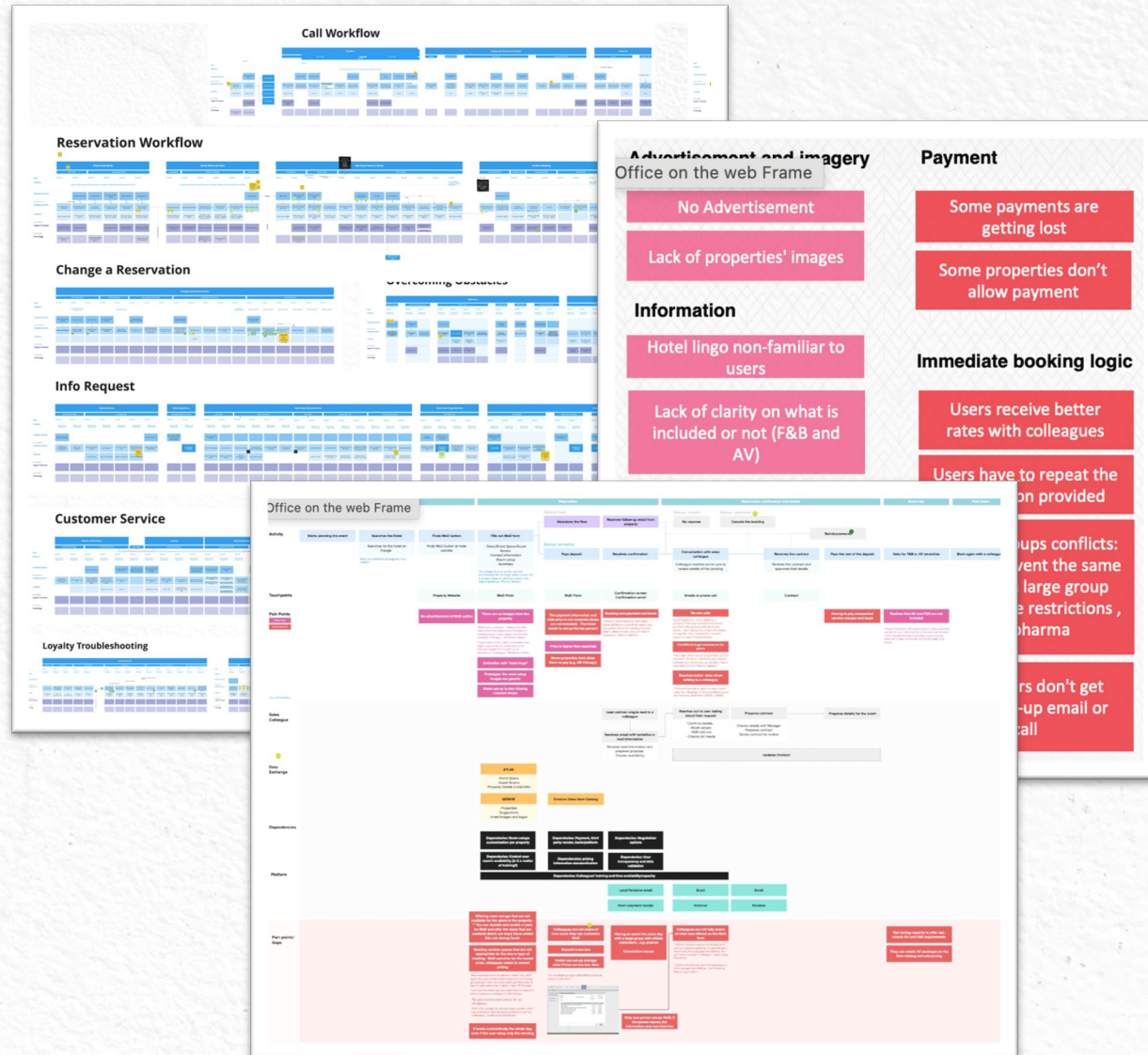




So how do you get around the problem?



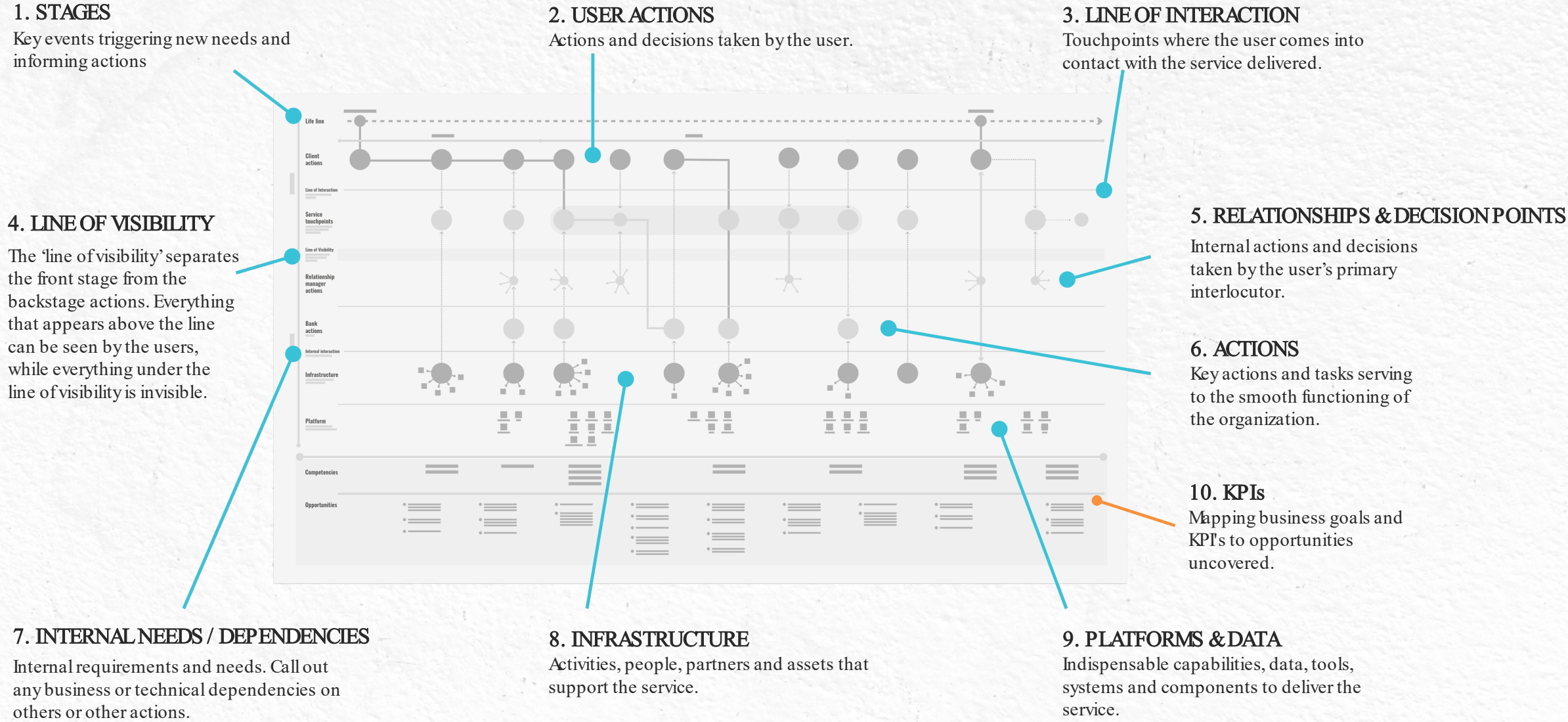
Bringing It Together

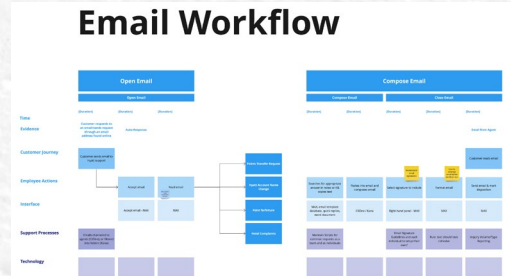
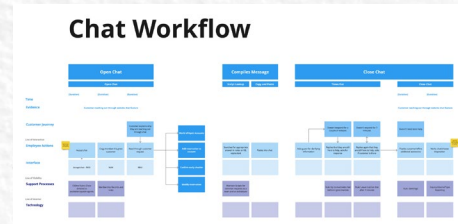
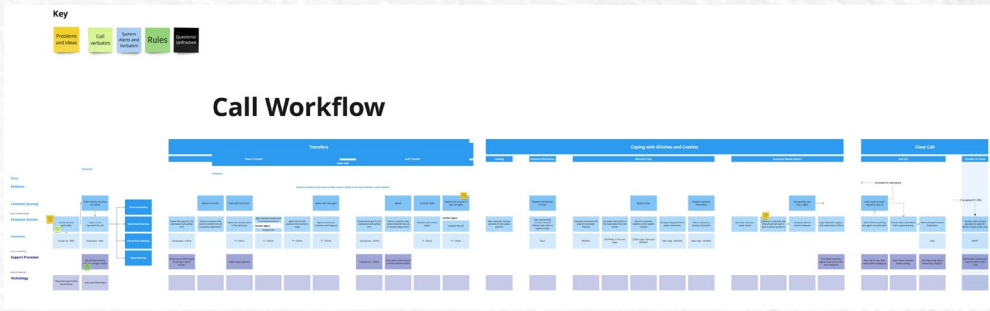


Services Blueprints

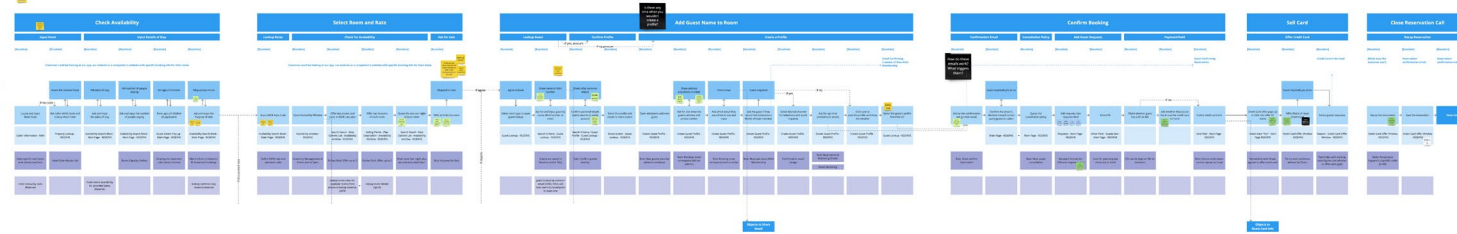
- Service blueprints
- Cross-pollination
- Defining what you can influence

Anatomy of Service Design – Holistic View of Frontstage and Backstage





Reservation Workflow



Using Loyalty Points



Change a Reservation



Overcoming Obstacles



Case Tracing



Info Request



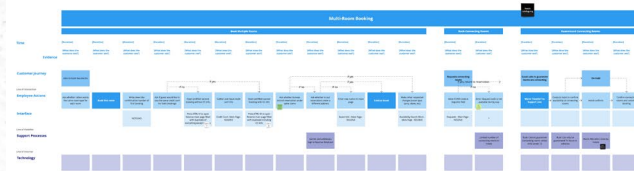
Markets and Rates (other than RACK)



Customer Service



Complex Reservations Workflow



Resort Bookings



Loyalty Troubleshooting



Loyalty Account Management



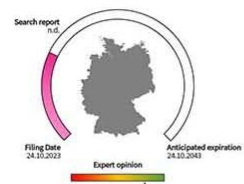
Acting On It



TECHNOLOGY OPPORTUNITY MAPPING

This one pager provides a structured overview of the key areas where technology has the potential to revolutionize existing processes and set new standards. From the refinement of inkjet printing technology, to advances in battery technology and energy storage, to breakthroughs in medical diagnostics and interactive consumer electronics, the information summarized here is designed to give investors, researchers, and interested parties a first picture of the market-changing possibilities of this technology.

The fluid technology described in the German patent application forms the starting point for the search for and identification of innovative application possibilities.



DE 10 2023 912 471.5
German Patent Application

FLUIDIC DEVICE AND METHOD FOR SAMPLE PREPARATION WITH A FLUIDIC DEVICE

Abstract: The patent application refers to a microfluidic device for automated sample preparation without external control. The device includes multiple channel sections with opening and closing elements that act as valves and are actuated by fluid contact. The opening elements are adapted to establish a fluidic connection from the respective second channel section to the first channel section. This arrangement of the elements allows complex protocols to be performed to make process media through the device in a precisely timed and metered manner. This technology is advantageous for use in self-contained microfluidic systems because it enables activation without auxiliary power. In addition, a method enables the precise sequential supply of defined fluid volumes into a microfluidic device by using closing and opening elements controlled by a first fluid to regulate the flow paths between the channel sections.

Claimed subject matter: microfluidic device method for sequential provision of volumes

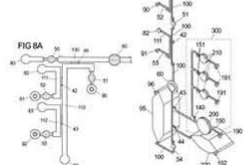
IPC scope: 2

Inventors: Richard Stenewe, Simon Wichlmann, Ahmad Shihed Mahabeh, Sathish Babu, Zafar Bhatia, Norman Isenler, Green Dream

Legal Status: pending

Priority Date:

Filing Language: German



02 BIOLOGICAL AND CHEMICAL ANALYTICS/SAFETY

A portable biological and chemical threat detection system based on patented fluid technology enables real-time identification of potential threats, such as pathogens. It uses microfluidic channels and biosensors to analyze air or liquid samples. When a threat is detected, it triggers an alarm and transmits data for rapid response. In addition, a powered software can minimize false alarms and improve accuracy. The system is easy to use and customizable.



04 CONSUMER ELECTRONICS - HAPTIC DISPLAYS

The integration of fluid technology into consumer electronics, especially for microfluidic-based displays, promises breakthrough innovations. Such technologies enable dynamic, interactive displays that provide tactile feedback and three-dimensional visualization. A microfluidic haptic feedback display in devices such as smartphones could use microfluidic channels to create physical bumps and textures that correspond to the visual content. In addition, color-changing fluids could provide an immersive and interactive user experience.



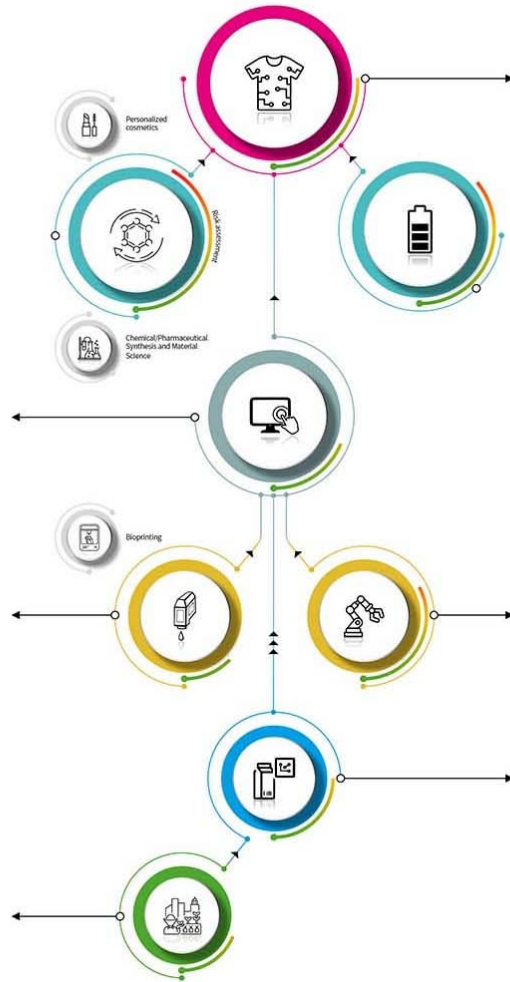
05 INKJET PRINTING TECHNOLOGY

The integration of fluidic technology into inkjet printers promises significant improvements in efficiency, accuracy, and versatility. An advanced microfluidic inkjet printer uses precise fluidic controls for highly accurate ink distribution, enables the use of specialty inks, and produces fine patterns. The technology enables dynamic adjustment of ink viscosity, improving print quality and reducing ink waste. This approach expands applications in areas such as electronic manufacturing (e.g., production of LCD, plasma or OLED displays, and biotechnology, such as 3D cell printing).



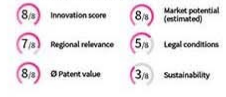
08 AUTOMATED URBAN AGRICULTURE SYSTEMS

The vertical hydroponic farm uses patented fluid technology and microfluidic channels for precise water and nutrient supply to the plants. Integrated sensors monitor plant condition and optimize irrigation and nutrient supply. Energy-saving LEDs, customized lighting to promote plant growth and enable eco-friendly urban farming. The risks relate to scalability and technical reliability in different environments.



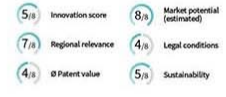
01 SMART TEXTILES AND WEARABLES

Smart microfluidic health monitoring wearables contain invisible channels and sensors in the fabric that analyze sweat and measure health data such as electrolytes and glucose. A wireless unit transmits the data to a connected device for real-time analysis. The patented control of the channels ensures accurate measurements, while the shirt itself is comfortable and suitable for everyday wear. Technical reliability and the protection of personal data (for networked devices) are potential risk factors.



02 BATTERY TECHNOLOGY AND ENERGY STORAGE

One possible scenario would be the development of a state-of-the-art liquid battery for electric vehicles that uses microfluidic technology to control the ion concentration and electrolyte flow in the battery. This technology could make it possible to dynamically regulate battery performance, resulting in increased range, improved charging efficiency and extended battery life. Precise control of the electrolyte flow could reduce problems such as overheating and performance degradation that occur in conventional batteries.



05 SOFT ROBOTICS AND PROSTHETICS

Novel robotics, such as for medical devices or prosthetics, use fluid technology for sensitive motion control. Microfluidic channels and actuators enable precise movement of prosthetics, while sensors convert neural signals into actions. An integrated feedback system provides tactile feedback. The prosthetics is lightweight, customizable and designed for daily use with a focus on comfort. Risks in medical devices are generally higher due to the strict regulations. Medium to high, depending on the application.



07 SMART PACKAGING

An innovative food packaging with integrated microfluidic sensors monitors the freshness and safety of food. It uses patented fluid technology to detect gas changes that indicate spoilage. Sensors in the packaging identify markers such as ethylene, moisture and other gases relevant to spoilage. An intelligent label provides information about the condition of the contents via a color change or NFC tag. This packaging solution supports the reduction of food waste by providing precise quality information. Risks include consumer acceptance and compliance with safety standards.



white ip group
TOM for the microfluidic technology

General market information

01 SMART TEXTILES AND WEARABLES

247 identified patents in the field of smart textiles indicate that this is an established technology in this area. Nevertheless, the high market volume and average patent valuation indicate an attractive application area.



02 BIOLOGICAL AND CHEMICAL SAFETY

66 patent applications demonstrate the wide range of applications in this field, including the detection of toxins and pathogens, the synthesis of chemicals and pharmaceuticals, monitoring and the production of personalized cosmetics. The fact that almost 50% of patent applications have been filed in the last 3 years underlines the increasing attractiveness of this area of application.



05 INKJET PRINTING TECHNOLOGY

4 patent applications indicate that fluid technology is not yet established in this field of application. The global 3D bioprinting market is estimated to be worth approximately \$1.3bn in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 20.8% until 2030. The global market for printed electronics is estimated at \$8.6bn in 2023 and is expected to grow by 22.3% annually until 2030. These statistics underline the increasing importance and huge growth potential of inkjet printing technologies in biotechnology and electronics manufacturing.



07 SMART PACKAGING

The increasing number of relevant patents identified in this area over the last 3 years indicates that the attractiveness of using fluid technology in this application area is growing.



Learn and Pivot

- Experimental designs
- Constant adjustment
- Opportunity maps

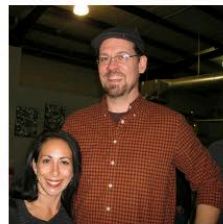
○ ○ ○ Acting On It: Search



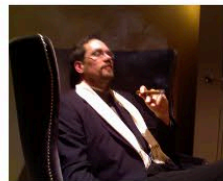
The Luxury Traveler



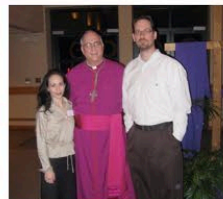
The Adventure Traveler



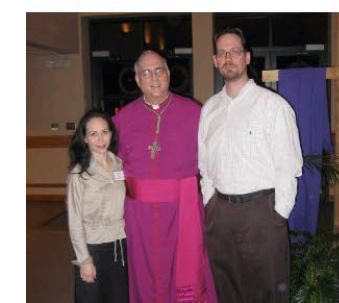
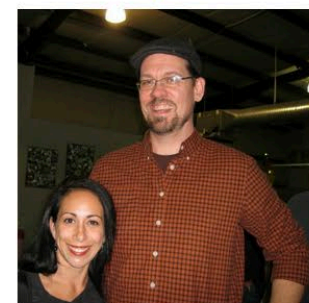
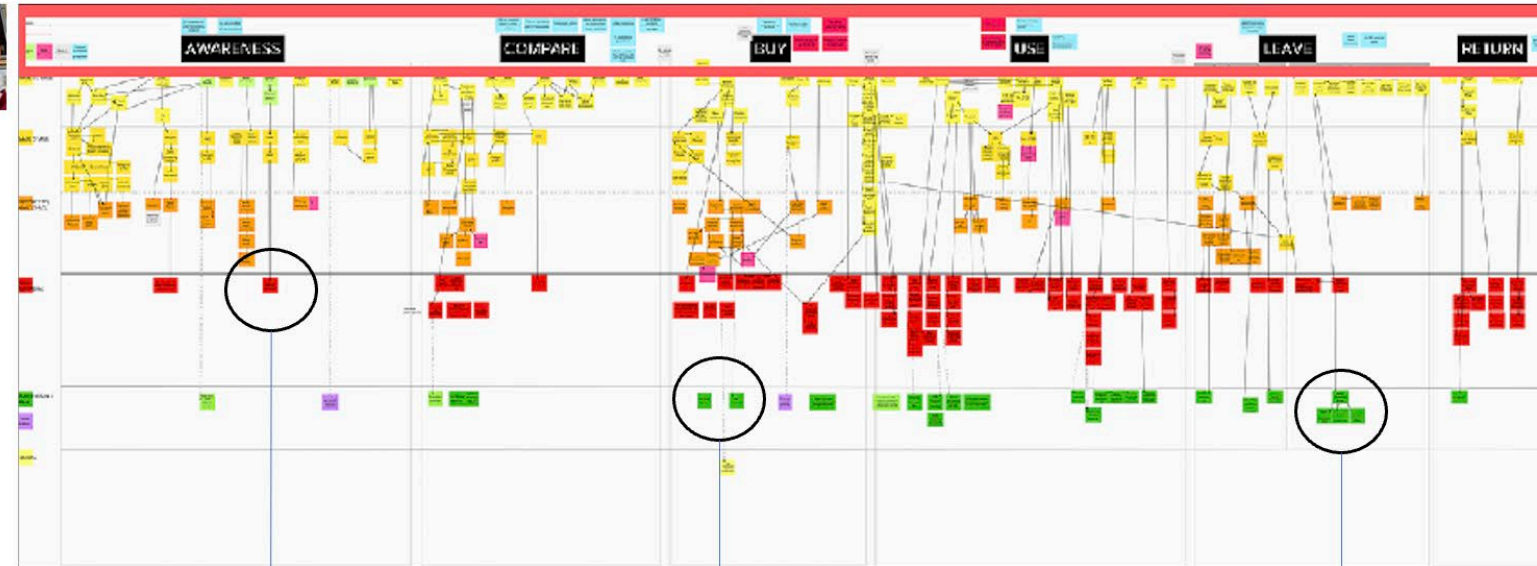
The Empty-Nest Traveler



The Insufferable Traveler



The Event Traveler



- Location
- Experiences
- Seasonality
- Profile targeting
- Secondary profile targeting
- Cultural norms



Pitfalls and Dangers



○ ○ ○ Filter Bubbles



Excessive personalization leads to consumers being trapped in "filter bubbles," where they only see content that reinforces their existing beliefs and preferences. AI has a tendency to amplify this problem.



○ ○ ○ Limited Discovery



Over-personalization can limit customers' exposure to new ideas and options, hindering their growth and engagement. Satisfaction becomes hedonistic and diminishes experiential highs.



○○ ○ Trust Erosion



Over-personalization damages customer trust if it feels like the brand is using personal information inappropriately. AI without human intervention can become overly intrusive.



○○ ○ **Over-Saturation**



Too many offers can become annoying, leading to messaging and offers being ignored. Frequency of messaging must align with the frequency of use of the product or service, as well as the mental and cultural models of appropriate frequency.



○ ○ ○ Mistaken Adjacencies



Just because the system has identified a correlation between data points, thus providing opportunities, we need to be careful about how we react.





Avoiding The Creep



○○ ○ Avoiding the Creepy Factor



Context of Use:

- Environment
- Conditions
- Need
- Desire



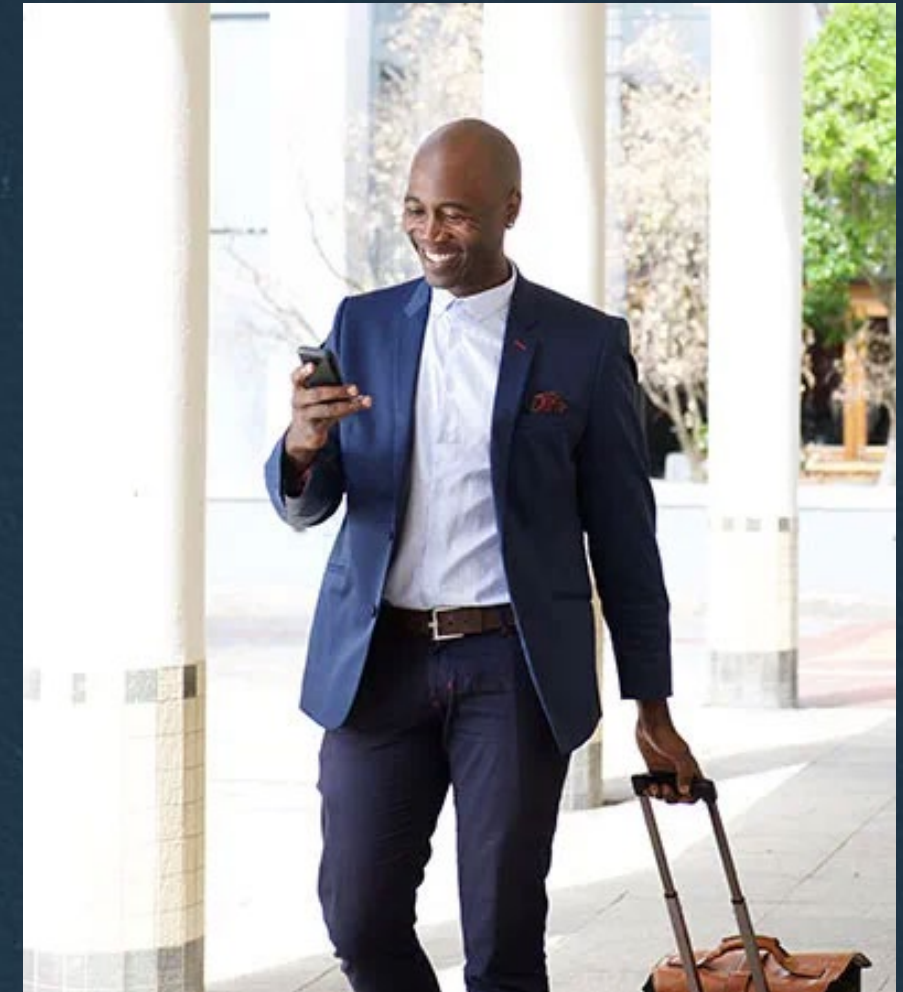
○ ○ ○ Relevance and Context



○ ○ ○ Relevance and Context



○ ○ ○ Relevance and Context



○○○ Summary



- **Data is not enough**
- **AI will streamline the research process, but can't replace it**
- **Aligning user context with your business needs is more important than ever**
- **Seek behavior change through time, not reactionary impulses**
- **Apply the golden rule**



Thank You



Questions?



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