



STATE OF MARKETING SCIENCE SUMMIT
UCLA LUSKIN CONFERENCE CENTER, LOS ANGELES, CA
FEBRUARY 15-16, 2023

MSI 2023 Summit: Session Summaries

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MSI Research Priorities 2022-2024

Day 1 - February 15, 2023 | 7:30 am – 7:30 pm PT

Estimating the Value of Offsite Data to Advertisers on Meta (RP [1](#) & [6](#)*)

Speaker:

Anna Tuchman - Professor of Marketing, *Northwestern University*

Overview:

In response to data challenges from missing information due to new regulations and the effects of privacy policies in the online environment (RP [1](#) & [6](#)*) hindering advertisers' ability to use consumer data, Anna Tuchman, Professor of Marketing at Northwestern's Kellogg School of Management, examined the use of offsite data to supplement the effects from these challenges. In her presentation, Tuchman discussed the reliance digital advertisers have on data shared across applications, in addition to regulatory changes that

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threaten this practice (i.e. GDPR, CCPA, LGPD, etc.). In reaction to these changes, Tuchman examined the value of offsite data to advertisers on Meta and explained a large-scale field experiment that measured the value of this data. The experiment was conducted in conjunction with Meta, Kellogg School of Management and the University of Chicago, which addressed these new data challenges.

Takeaways:

- Offsite data is currently used at Meta through an "offsite conversion optimization" algorithm.
 - The goal of this process is to deliver ads to users "likely to take an off-Meta action" such as a purchase on an advertiser's website.
- If/when offsite data becomes unavailable, the next best alternative may be through "link click optimization" where the goal is to deliver ads to users most likely to click on the ad.
 - This is the lowest outcome available on the Meta platform in the purchase funnel and only uses onsite data.

The experiment

- The experiment involved taking a large sample of advertisers, who are optimizing for purchases, by measuring how effective offsite optimized ads are in generating incremental conversions, in comparison to how effective onsite optimized ads are at generating incremental offsite conversions.
 - The comparison indicates how much value the off-site data is bringing to ad delivery.
 - The graphic below gives a brief method of the methodology:

WHAT WE DO

We measure the value of offsite data to advertisers on Meta

- Benchmark customer acquisition costs in current environment
- Quantify how advertisers' costs per incremental customer change when offsite data cannot be used

We implement a large-scale field experiment:

- We randomize ad exposure -> gold standard
- 70k advertisers in our sample, minimal selection -> results generalizable

Results

- **When offsite data is available** the median advertiser has a cost per incremental conversion of \$44.
 - This figure varied across verticals with CPG at \$53, e-commerce at \$37 and retail at \$28.
- Moving to **onsite optimization** showed that **the cost of incremental conversion increased** 37% for the median advertiser (\$44 to \$60).
 - Differences varied across verticals in an average increase of cost: CPG 64%, e-commerce 48% and retail 45%, with the median advertiser losing about 6 incremental customers per 1,000.
- Small businesses were shown to be disproportionately reliant on digital advertising. The experiment showed offsite data to be especially valuable to small advertisers.
- Restrictions to offsite data will **decrease ad effectiveness and increase the cost** by 37% for the median advertisers.

How Good Is Your Firm at Measuring Advertising ROI (RP [2*](#))

Speakers:

Neha Bhargava - Director of Advertising Research, *Meta*
Brittany Swanson – Marketing Manager, *Meta*

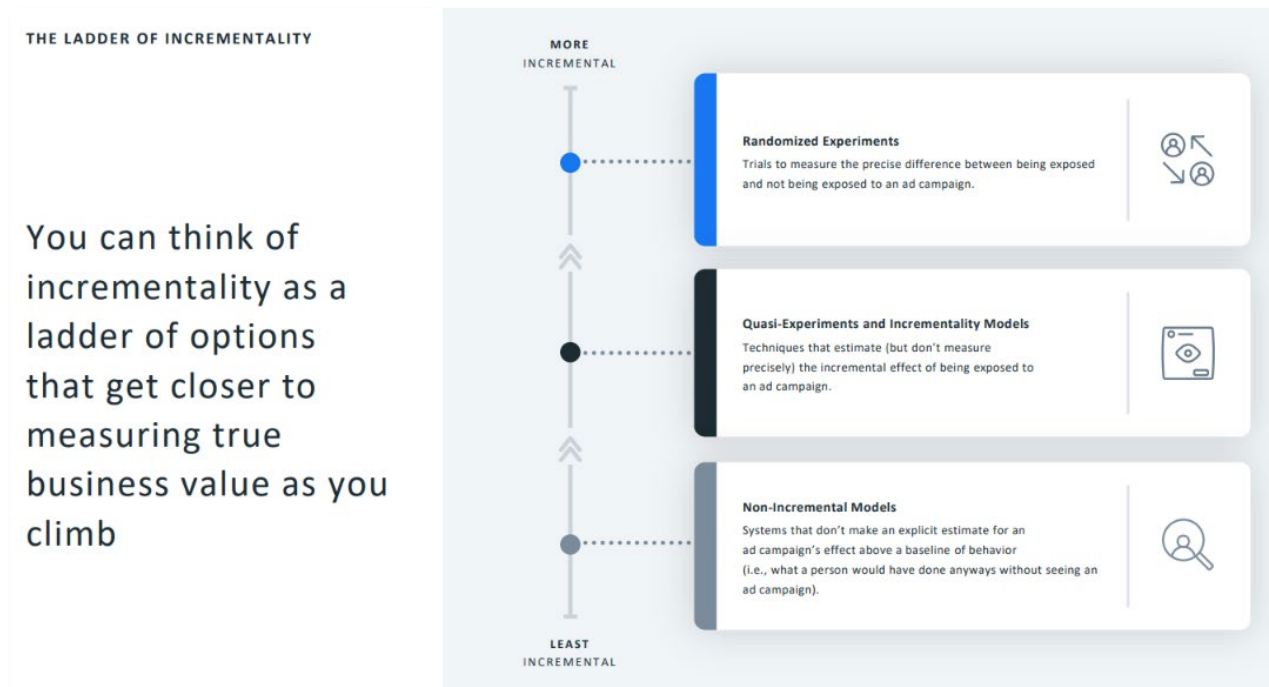
Overview:

Speakers Neha Bhargava and Brittany Swanson of Meta, speak to measurement and analytics by helping to assess how good a firm is at measuring ROI (RP [2*](#)). Despite the increased difficulty in obtaining consumer data, Swanson remarked that most firms are still reliant on methods that measure correlation rather than causality. Swanson discussed the Ladder of Incrementality and noted that each rung suggested how rigorous a firm's measurement process is. She pointed to randomized control trials (RCTs) as the gold standard in measuring incremental and causal effects. She observed that RCTs can be a costly endeavor and provided alternatives. Bhargava examined research done by Meta and Northwestern's Kellogg School of Management to understand if good data and robust models can improve the incrementality of non-experimental observational methods, hence reducing the need for RCTs.

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Takeaways:

- Good measurement is becoming more difficult to achieve as consumers gain more options on how to limit the data they share with businesses. This comes in addition to more ad-blocking technology and new device restrictions.
- Many firms still rely on measurement methods that provide results from correlation, rather than causation.
- Different techniques fall onto a rung in the incrementality ladder, with RCTs being the most incremental. When RCTs are not feasible, other options on the ladder can include quasi-experiments and incrementality models and non-incremental models.



- Initial research by Meta and Northwestern, on where RCT is omitted, and the study is observational in nature, produced drastically different brand lift results.
 - Further research leveraged advanced observational models in an attempt to correct for this large discrepancy by adding prior campaign outcomes, estimated action rates, dense features and sparse features.
 - Included in the study were two different types of observational models:
 - Stratified Propensity Score Model (SPSM)
 - Double/Debiased Machine Learning (DML)

Summary of results

The lift estimates for RCT and DML, our best method, are statistically different in 1258 / 1673

=
75%

of the experiments

Funnel	RCT Median Lift	DML Median Lift	Relative Error
Upper	28%	143%	5.1x
Mid	19%	126%	6.6x
Lower	6%	68%	11.3x

- Results showed that the models more observational in nature give significantly varied results than the RCT method in 75% of the experiments. Results slightly favored the DML model, but RCT reigned supreme.
- Quasi-experiments and incrementality models, techniques in the middle of the ladder can be improved upon through calibration with experiments.

Where the Puck is Going (RP 3*)

Speaker:

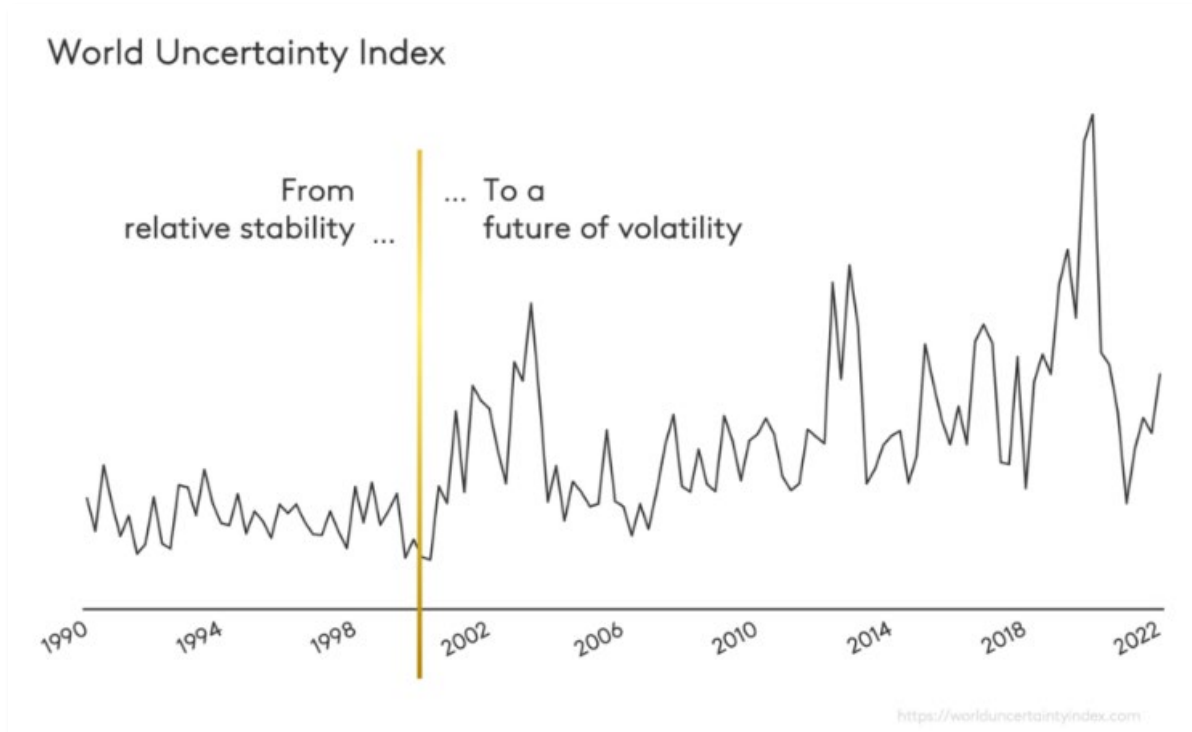
J. Walker Smith – Knowledge Lead, *Kantar*

Overview:

In his presentation, J. Walker Smith examined challenges from long-term changes in how customers and firms interact (RP 3*). In his discussion, Walker explored the disruption to business being faced with a more volatile environment with more frequent "swings from highs to lows." He noted that despite being forced into an "all-digital lifestyle" by the pandemic, there is still a very strong need for analog in the human experience. Smith suggested that future successful businesses will fuse both analog and digital values to enhance the human experience.

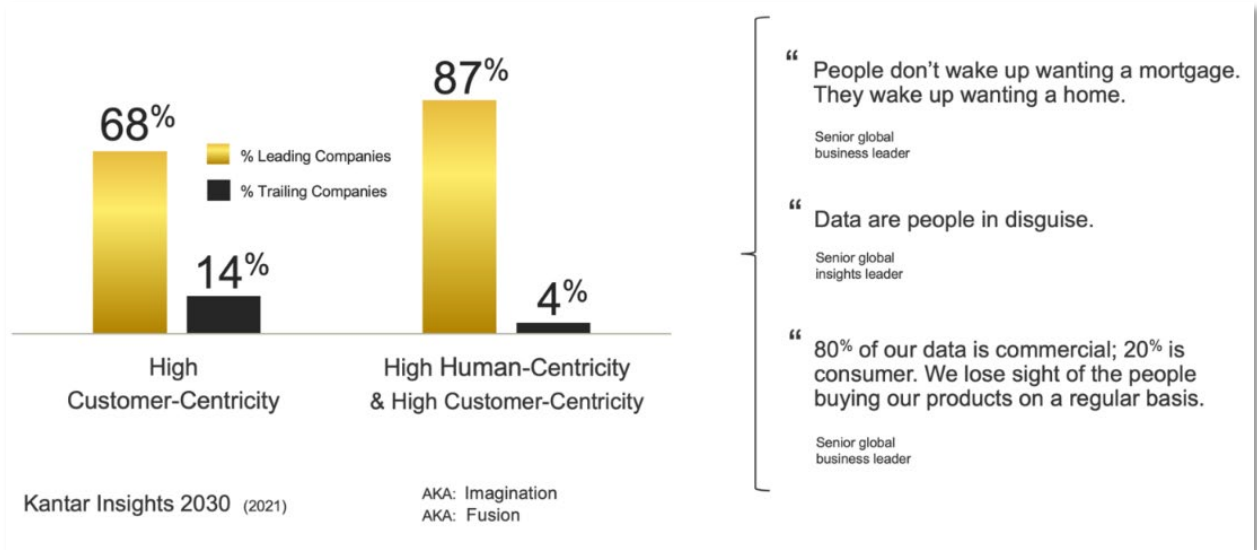
Takeaways:

- "No matter what metric you look at, what we see is that we have entered a market that is characterized by the return of volatility."

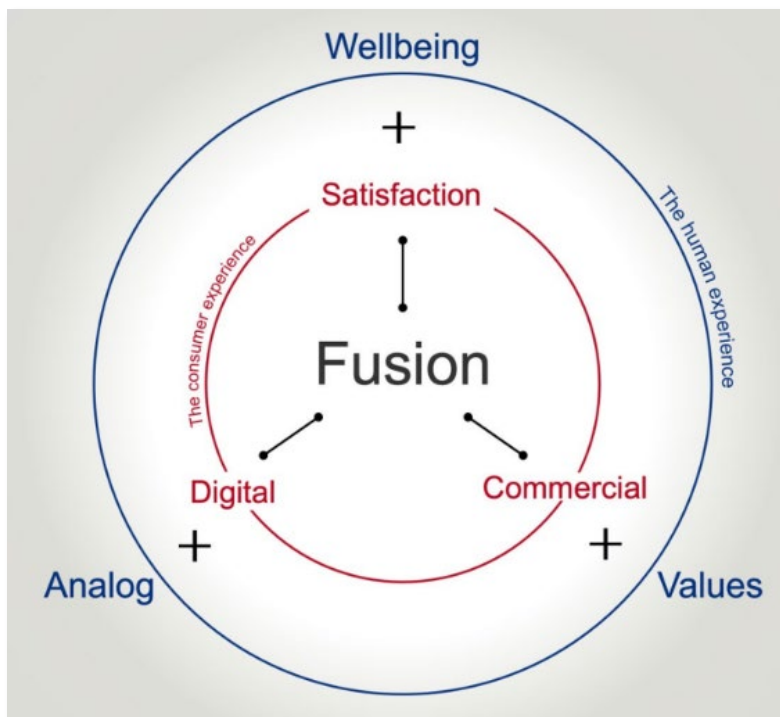


- Past forecasting methodologies that were made to function in a more stable environment do not work as well in the current and much more volatile environment.
- "Consumers have been living through twenty years of greater volatility in their emotions and their sentiment about the marketplace than they lived with, in the prior twenty."
- The context of inflation is more important than inflation itself (i.e. war in Ukraine, pandemic, climate change). Consumers have adopted new behavior in the face of uncertainty in this new marketplace.
- Spawned by the pandemic, the notion that digital would take was negated by consumer behavior showing that they missed the human experience coming out of the pandemic, pointing to the importance of analog.
- Leading companies that were high in customer-centric outperformed those companies which were not. Companies that have taken the next step to becoming more human-centric fare even better.

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- The human experience layers in both digital and analog experience, combining both commercial and social values.



- There is a global mental health crisis that crisis caused by factors including the pandemic. This crisis has consumers pushing for positivity from brands.

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The Price of Taking a Stance (RP 5*)

Speaker:

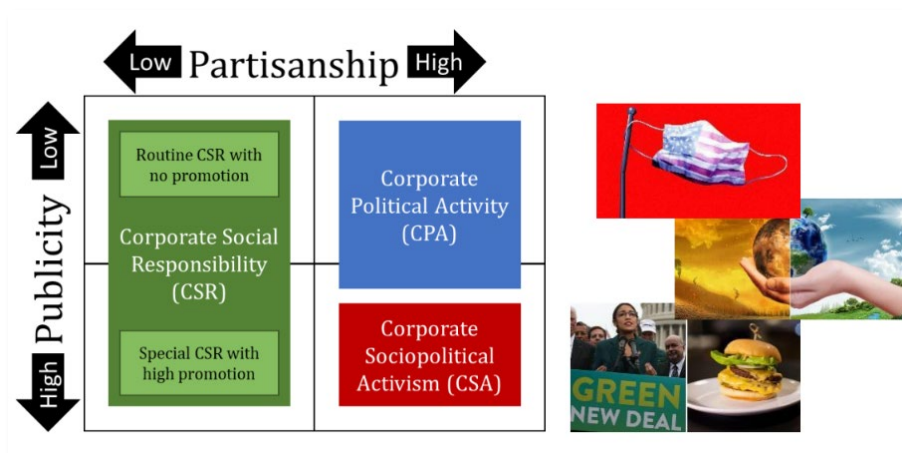
Nooshin Warren - Assistant Professor of Marketing, *University of Arizona*

Overview:

In her presentation, Nooshin Warren examined corporate mission shifts from shareholder value to stakeholder value with a specific focus on corporate activism (RP 5*) and the financial consequences this practice can have on a business. Warren remarked on the increased polarization in society, which has presented more challenges for firms and businesses. In addition, Warren explored research she has conducted on firm activism and examined the results it had on different businesses. This research was conducted to help firms and businesses better understand how to navigate in this polarized consumer environment.

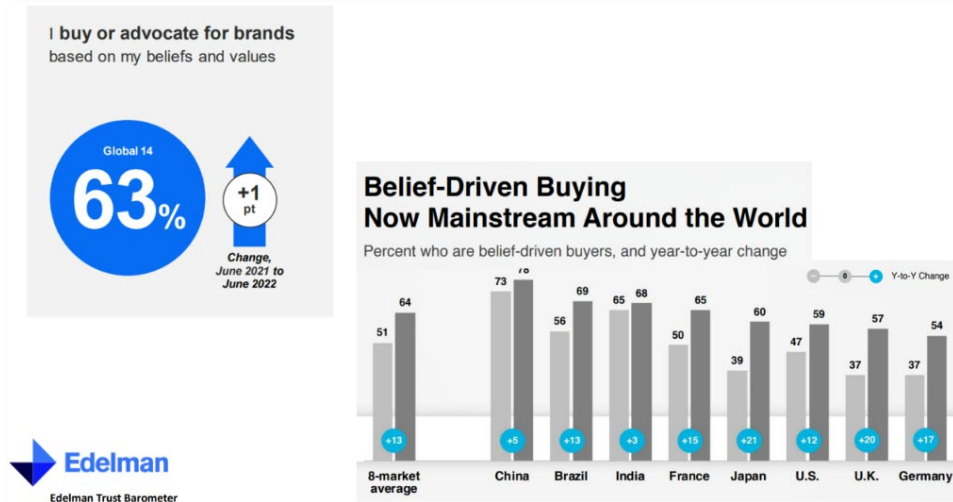
Takeaways:

- Firms have shifted from cause marketing through highly popular and philanthropic causes to functioning in a highly charged, polarized political environment.
- Consumers operating in a politically polarized environment are bombarded with ideas from social media, biased public media, government regulations, education, society, etc.
 - Polarizing topics are expanding and have become part of the business world. It is becoming more difficult to differentiate between activism and social responsibility.
 - **"When topics move toward partisanship then if you have any voice or opinion on it, that becomes part of activism."**



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- **Research shows that more consumers prefer to purchase from firms that have aligned beliefs.** This affects consumer purchase habits, brand trust, brand loyalty, brand recommendation, emotional connection with brands, etc.



- Depending on the topic investors can react both positively or negatively to activism.

How Constraint Changes Customer Behavior (RP 4*)

Speaker:

Stephanie Tully - Assistant Professor, *University of Southern California*

Overview:

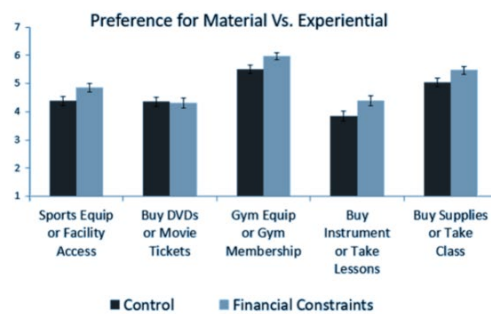
Speaking to obstacles presented by inflation and supply chain disruptions (RP 4*), Stephanie Tully examined the constraints placed on consumers that stem from these factors. In her discussion, Tully examined marketing to financially constrained consumers by considering word-of-mouth, offers of financial assistance and types of products and services that are more likely to be successful in this market. In her presentation she examined the various ways to reach the financially constrained consumer, pointing out the variables that influence change in the marketing process to these consumers. Tully places careful focus on messaging to this group of consumers, to inspire them to engage in activities such as word-of-mouth and psychological ownership regarding assistance. Additionally, she notes that financially constrained consumers tend towards material goods over experiences.

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Takeaways:

- Most consumers do not feel confident that 2023 will be a "great year economically" with consumer debt back to pre-pandemic levels. This factor is affecting consumers across all income brackets.
- When consumers are feeling "financially constrained they don't really like to think about or reflect on their finances."
- When faced with limited financial means, consumers will "optimize their purchases" which tend to be material in nature over experiential. Highlighting the durability and longevity of a product speaks to this market.

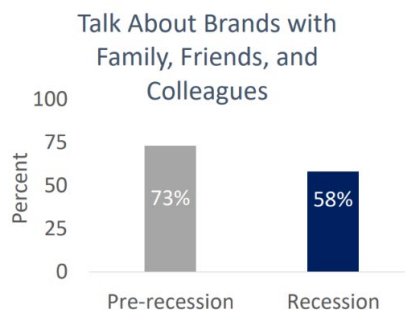
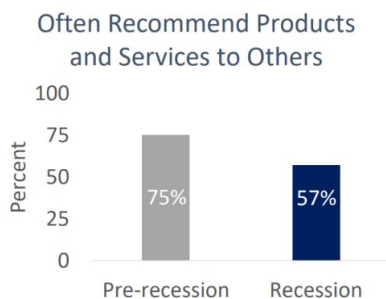
FINANCIALLY CONSTRAINED CONSUMERS ARE PARTICULARLY LIKELY TO CUT BACK ON EXPERIENCES



Tully, Hershfield, & Meyvis 2015

- **Word of mouth greatly decreased during the great recession.** Financially constrained consumers are less likely to speak to others about their purchases.

WORD OF MOUTH DURING THE GREAT RECESSION



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- Opportunities to push consumers to engage in word-of-mouth can be successful by reframing it away from the expenditure of money and more about the product or experience itself.
 - In addition, adding temporal distance between a purchase before a follow-up on a product or service instills less focus on the expenditure and more on the product, encouraging word-of-mouth from this market.
- Offering aid in the form of "financial assistance" lends to consumers feeling "pandered to." Messages in the form of "apply" "claim" or "line of credit" can impart "psychological ownership" on the part of the consumer and be more successful.
- Psychology literature indicates that consumers that are constrained financially tend towards material goods over experiences (i.e. gym equipment vs. gym membership).

Connecting “Discontinuous” Deliverables & Datasets (RP [1](#) & [2*](#))

Speakers:

Brian Cooper - Vice President, Data, Demand, and Digital, *Juniper Networks*

Chad Mulder - Sr. Director, Head of Brand Marketing & Creative Strategy, *Juniper Networks*

Overview:

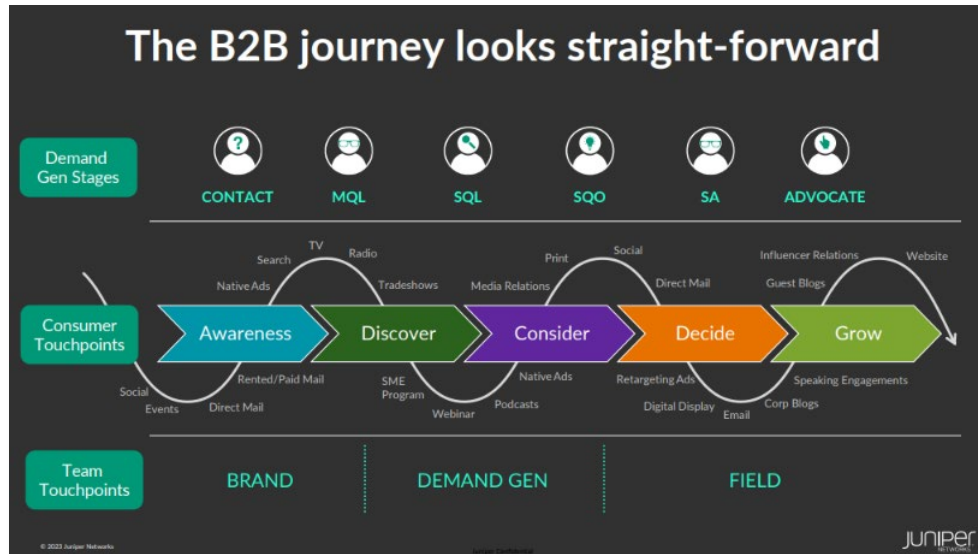
Brian Cooper and Chad Mulder of Juniper Networks explored the need for coordination to support a seamless B2B buyer journey by connecting complex journeys with data. In their presentation, they examined B2B data collection methods and challenges at Juniper, in addition to measurement and analytics of this data (RP [1](#) & [2*](#)). In his discussion, Cooper noted the differences in the B2B journey and pointed to a previous data competition which was done in conjunction with MSI focusing on the B2B environment. Specifically, he pointed to an article on data gleaned from this competition by Neeraj Aurora and Linge Xia both from the University of Wisconsin. The article focused on marketing effectiveness in the presence of multiple stakeholders. The piece examined how many of those in buying roles responded to Juniper related activities that ultimately led to a conversion. Mulder spoke to Juniper's marketing revenue growth model which focused on opportunities, revenue and consumer experience, in addition to quantifying their mission.

Takeaways:

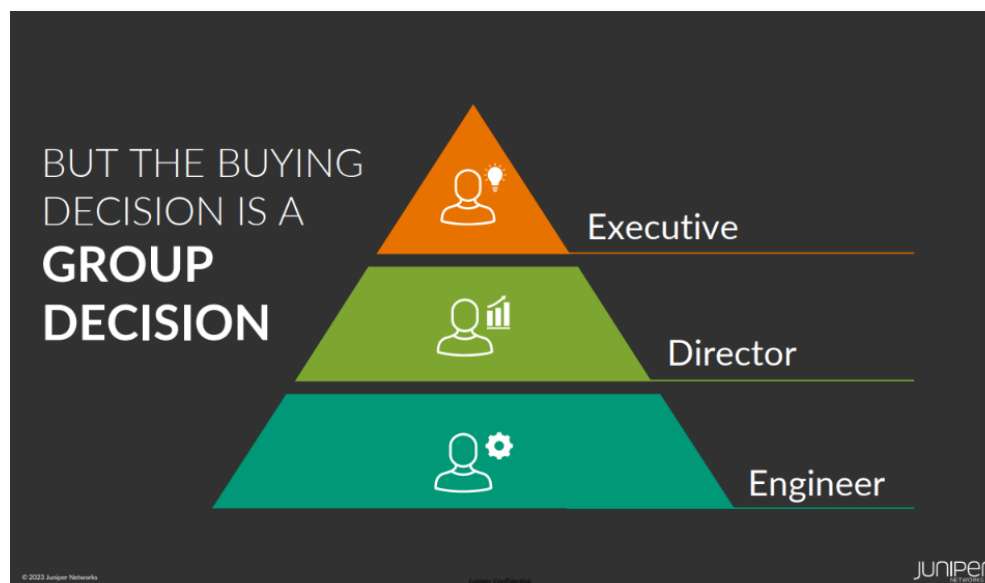
- In terms of B2B, the journey of this consumer is very similar to B2C, but the buying cycle is much longer, with multiple steps and touchpoints with marketing still being “intimately involved.”

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- o "What matters to us is how that manifests itself in a measurable way that we can see progress in the buyer's journey."

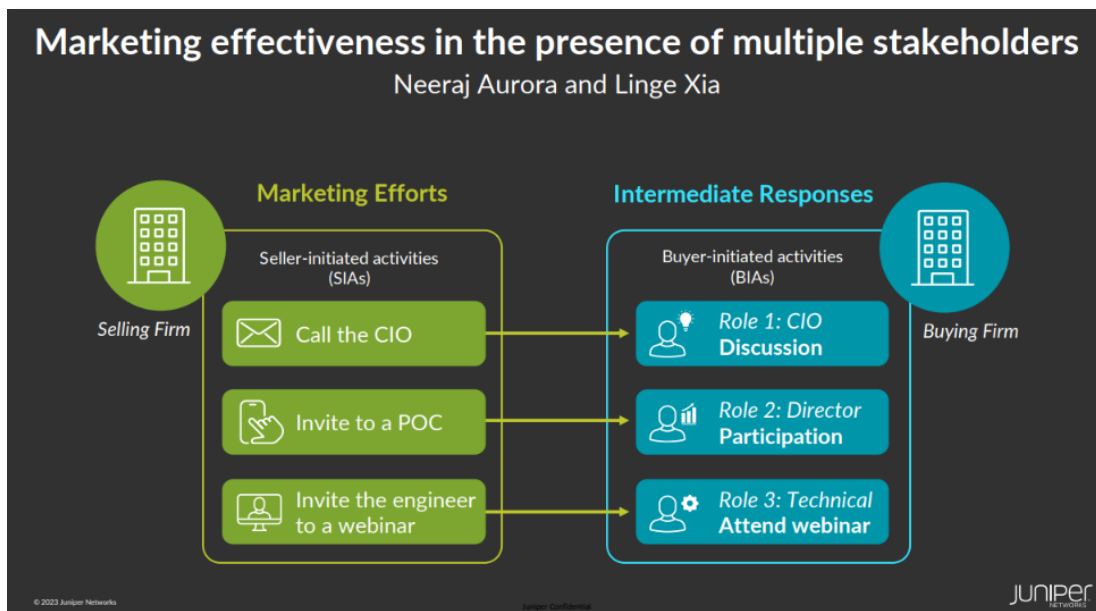


- The purchase process in B2B is a group decision and because it is a group decision rather than an individual one, it has a significant impact on marketing tactics. Each group member receives individual attention that aligns with their position in the process.
 - o Each individual has a different role in accelerating and moving across the B2B buyer journey.



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- An article based on data collected from an MSI competition, by Neeraj Aurora (University of Wisconsin) and Linge Xia (University of Wisconsin), looked at the different roles in the B2B purchase journey and how those roles responded to Juniper-initiated marketing activities to secure a customer.
 - Using the data from the competition the authors created a model that assisted in addressing each level in the hierarchy of decision-making to help optimize Juniper’s marketing decisions.



- Juniper is in a period of "hyper-growth." Their "Marketing's Revenue Growth Model" is aimed at building awareness through finding and nurturing opportunities, accelerating time to revenue (no lead left behind) and account-based marketing (ABM).
 - Each of the four areas of the model has its own KPIs with a specific interest in how each of these areas are related to one another.



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Day 2 - February 16, 2023 | 7:30 am – 11:00 am PT

Intuit Tax Knowledge Engine: Practical AI for a Smarter and More Personalized TurboTax (RP [2](#)*)

Speaker:

Saikat Mukherjee – Distinguished Architect, *Intuit*

Overview:

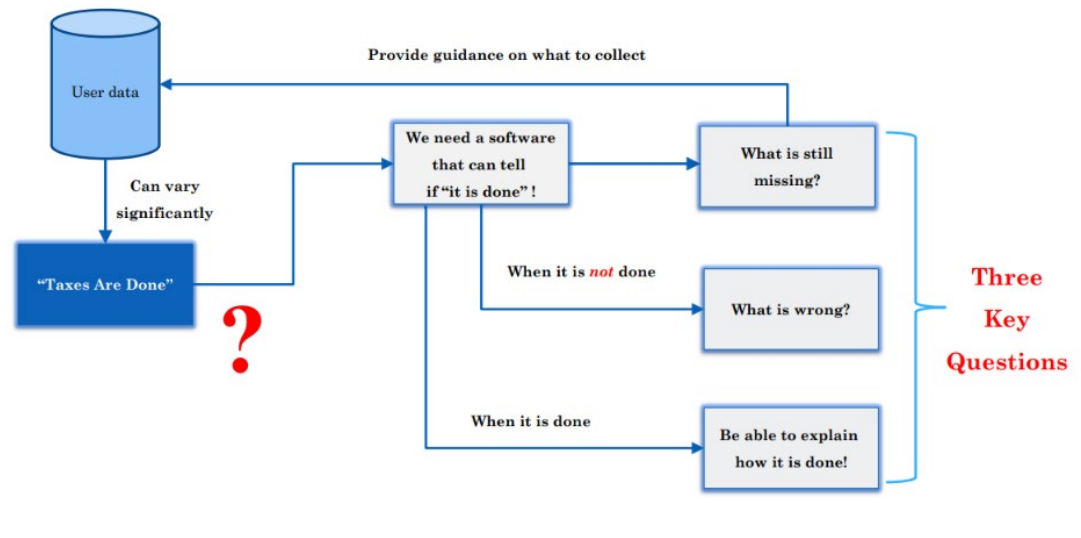
In this session, speaker Saikat Mukherjee discussed how Intuit, makers of TurboTax, Quick Books and Mint, leveraged symbolic AI and machine learning to create a more user-friendly, personalized and functional platform to better assist consumers and small businesses online with taxes and other financial endeavors. Appealing to attention, engagement and customer experience (RP [2](#)*), Mikhaerjee examined how Intuit combined AI, natural language parsing and information extraction from tax forms in conjunction with human experts to create a more seamless experience for customers. In his presentation, he explored TurboTax as an “expert system” that guides users through a series of interactions. This system helps users file taxes in an appealing and intuitive way. This allows the consumers control of the process while being able to “intelligently suggest” areas that are missing or require attention.

Takeaways:

- People are still wary of DIY tax systems and most often want a system to explain what it is doing and allow for the easy retraction of human error.
- The more complex a system is, the less useful it becomes.
 - The goal of the AI system is to provide explanations (e.g. Explain the Affordable Care Act – ACA).
 - System constraints should **allow for user control** but **guide the user** at the same time and **“intelligently suggest” what is missing**.

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Enable “Taxes Are Done” and Three Key Questions



- The challenge for the system is to translate tax forms into "executable code" in addition to AI to learn tax calculations.
- Customer-facing AI must be explainable (explainable AI) and 100% intuitive.

Business Transformation Needs Marketing (RP [Z*](#))

Speaker:

Laura Jones - Chief Strategy Officer, *BAV Group*

Overview:

Chief Strategy Officer of the BAV Group Laura Jones examined organizational challenges stemming from needed transformations which address the constantly changing business environment. Responding to the organizational structure and the influence of marketing in the firm (RP [Z*](#)), Jones noted, according to Deloitte, only 26% of CMOs regularly attend corporate board meetings, contributing to the gap in understanding the role and benefits of marketers on the board. Jones indicated that the lack of understanding of the CMO skillset and how they can contribute to the corporate board meeting presents a key missed opportunity to decrease the high failure rate of transformations of any kind. She remarked that this is particularly true of brand transformations and the value brands can have in the boardroom. In her discussion, Jones provided case studies and suggested the shift of marketing functions to a T-shaped model which can better support the role of marketing in the boardroom. Transitioning to this model can be integral to data, finance product and people teams

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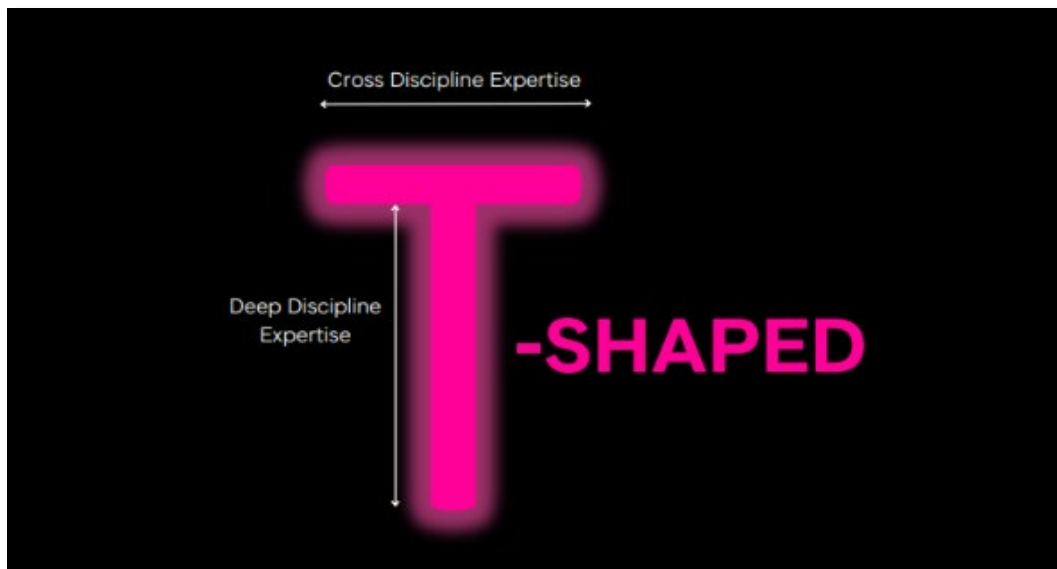
Takeaways:

- There is a gap in understanding the role and value of CMOs on the board stemming from the following:
 - A lack of understanding of the CMO's skillset and how they can contribute to the board room.
 - A lack of knowledge about how marketing can drive growth, but also how it can lead to an overall sense of the building.
- Jones indicated the following reasons why marketing and brand value should be included in the board room:
 - Brand impact on valuation
 - Brand impact on financials
 - Brand impact on key metrics
 - Brand impact on IPO
- True brand equity has a tangible value in areas such as influence on brand consideration, impact on brand preference and other overall KPIs.
- Brand used to function as just “external communications” but the role of the brand has evolved to be an “operating system for the company” going beyond the traditional functions and include customer experience, employee experience, products, service, delivery, etc.



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- “In a data and AI-driven world business, transformation is required” with the marketer uniquely qualified to help “orchestrate” this business transformation through their diverse skillset.
- Marketing as a T-shaped department can better distribute knowledge from cross-discipline and deep-discipline expertise to better exploit the vast experiences marketers come with.



How to Uncover the Health of Your Business Through the Health of Your Customers (RP [2](#) & [7](#)*)

Speaker:

Dan McCarthy - Assistant Professor of Marketing, *Emory University*

Overview:

Speaking to measurement and analytics for customer value and the influence of marketing on the firm (RP [2](#) & [7](#)*), Dan McCarthy, Assistant Professor of Marketing at Emory University, addressed concerns regarding the decreased influence of marketing in the C-suite. In his discussion, McCarthy addressed how to get the CEO and the C-suite to better understand the value and profit marketing brings to a company. Likening the company to a patient, McCarthy suggested that gauging the health of a company can be done through the measurement of customer value. In his presentation, McCarthy showcased a variety of tools to better understand the health of a company and what marketing can do to increase company health. Tools presented included customer-level metrics, models, customer lifetime value (CLV) and post-acquisition value (PAV).

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Takeaways:

- Optimize value by leveraging untapped or existing customer lifetime value (CLV) data such as **transaction logs**.
- **Understanding if a company is creating value** can be done traditionally by calculating the return on the cost of capital (Return > Cost of Capital).
- If a **company is not yet profitable**, look at customer-level metrics for results to determine whether there is a path to profitability.
 - Consider marginal profitability (Absolute profitability → incremental profitability).
 - Consider the time frame (Immediate profit → Long term profit).

What is needed (if not currently profitable)

- **Absolute** profitability → **incremental** profitability
- **Immediate** profit → **long-term** profit

What is required:

1. Invest when **incremental ROI** is high
2. Find as many [1]'s as possible
3. [Manage overhead judiciously]

Path to profitability



What metrics to look to? Metrics at the **customer-level**

- **To successfully measure these metrics** requires three things:
 - The right data (Most important: transaction log)
 - Purchase behavior over time
 - The right definitions
 - The right predictive models (customer lifetime value – CLV, post-acquisition Value - PAV)
- **Subscription businesses** (less common) are easier to monitor the customer due to observable churn, steady payments over a lifetime, and easy to model.



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- **Non-subscription businesses** (more common) are more difficult to model due to latent attrition and random purchase timing over a lifetime.
- **Internal data** is more granular (customer-level transaction logs) and can be enriched with other sources such as marketing action, customer satisfaction, social media activity, etc.
- **External data** (data that is aggregated) is less granular, periodically disclosed and can come in the form of "rolled up" summaries, first-party disclosures, and third-party data.



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MSI Research Priorities 2022-2024

1. Data challenges from business disruption and missing information.

- 1.1. Effects of privacy regulation on customer value creation
- 1.2. Effects of ability to generate value from advertising
- 1.3. Analytics challenges following changes in firm strategy

2. Measurement and analytics

- 2.1. Measuring returns to analytics with greater ability to support causal claims
- 2.2. Analytics for short-term versus long-term effects
- 2.3. Brand measurement
- 2.4. Attention, engagement and customer experience

3. Long-term changes in how customers and firms interact.

- 3.1. Effects of changed patterns of living and working on customer demand
- 3.2. Effects on intra-firm processes

4. Inflation and supply chain disruption.

- 4.1. Effects on reconfigured supply chains
- 4.2. Coping with inflation

5. Corporate mission shifts from shareholder value to stakeholder value.

- 5.1. Healthcare pricing for access by lower-income consumers
- 5.2. Tele-medicine
- 5.3. Responsible production and consumption and role of new food technologies
- 5.4. ESG influence on marketing budget allocation
- 5.5. Brand purpose, political ideology and consumer behavior
- 5.6. Firm externally – focused activism versus internally – focused action
- 5.7. Diversity and inclusion

6. Regulatory and public policy issues affecting marketing.

- 6.1. Effects of privacy policies on competition
- 6.2. What aspects of privacy matter to consumers?
- 6.3. Ethical forms of exchange for consumers to opt in to share data
- 6.4. Regulatory barriers to innovation to improve health and well-being
- 6.5 Achieving profitability in ways consistent with United Nations SDGs

7. The influence of marketing in the firm

- 7.1. Organizational structure and the influence of marketing
- 7.2. Customer value versus brand value