

OCTD Directive:

Every advance in marketing capacity corresponds to a technological capability and supporting infrastructure. OCTD proposes a technological marketing index that evaluates an organization's capability to execute targeted, tracked, ethical, and auditable data-driven marketing practices.

Dimensions of Analysis

1. Data Capture & Processing
2. Revenue Attribution
3. Automated Response
4. Data Ethics, Auditability and Compliance
5. Stack Management Observability, and DevOps

1. Data Capture & Processing

Sub-Categories:

- a. Channel Coverage
- b. Journey Visibility
- c. Centralized Data Store
- d. Stakeholder Weighting and Prioritization

The core of any digital marketing effort can be summarized by its channels and their reach. Acquiring, capturing, and processing data is the beginning of any digital marketing workflow. The ETL (Extract-Transform-Load) process has been the target of innumerable digital marketing technologies, though is suited almost entirely to legacy relational database systems. Evaluating whether clients are able to aggregate data from diverse channels and normalize that data into regular formats is the first step to accomplishing any of the other themes listed here. .

Web Analytics (Hubspot/GA) | CRM Instance (Salesforce) | Data Warehouse (MongoDB)

2. Revenue Attribution

The goal of capturing customer data of any kind should be to use it in service of active revenue attribution. Algorithmic revenue attribution can be accomplished through any series of paid tools or home-baked infrastructure, though it requires tremendous volumes of data ontology familiarity and flexible high-write-velocity data storage configurations to make its outputs meaningful and resilient. Checking the competencies around these listed sub-categories would provide visibility into the maturity of spend attribution.

Sub-Categories:

- a. Financial systems integration
- b. Spend planning attribution
- c. Foundational research on ROI
- d. Tools like Bizible for cloud native attribution and spend modeling

Financial SaaS (Aviso) | Attribution (Bizible) | OLAP (druid.io)

Dimensions of Analysis Continued

3. Automated Response

Sub-Categories:

- a. On the fly A/B testing infra
- b. System mutability and accessibility for stakeholders
- c. Minimizing third-party or IT engagement for ad-hoc queries
- d. Machine Learning integration

With data ingested, aggregated, and with insights in reach, automating the uptake of knowledge and empowering strategic decision makers with the ability to make meaningful adjustments becomes the priority. Does the marketing organization have visualization, processing and response tools that make it possible for stakeholders to alter strategies on the fly without downtime? Can they do so without engaging an IT department or third-party contractor? The organization should also be ready to integrate at least basic Machine Learning algorithms to take advantage of data collected for process and spend optimization.

Marketing Automation (Marketo) | Visualization Platform (Tableau) | Service Management (SNOW)

4. Data Ethics, Auditability and Compliance

GDPR, customer privacy, and data breaches cause more than reputational harm, they threaten the very viability of businesses and can cost them more than any marketing initiative can make in return. Having component metrics that include mean time to resolution of customer claims, RBAC compliance testing, and preemptive loss or cost modeling should be key indicators for the technological maturity of a marketing effort. This will require the acquisition and maintenance of master data management tools and techniques.

Sub-Categories:

- a. Loss modeling scaled for size of database and normalized against data types.
- b. Role Based Access Controls (RBAC)
- c. Mean Time to Claim Resolution
- d. Algorithmic Auditing

Unstructured Data Search (Splunk/Elastic) | Compliance and access Software (Talend)

Sub-Categories:

- a. Unified Data Model
- b. Central Data Dictionary
- c. Object - Field Hierarchies and Ownership
- d. Talend/Unstructured Data Repo
- e. System mutability & Downstream Dependencies
- f. Tool Redundancy

Maintenance of a marketing technology stack can cause tremendous technical debt and undo any good that its development might bring. Marketing stacks should be managed as critical infrastructure. This includes the use of master data management tools. A unified analytics platform that allows for redundancy analysis across competing systems and spend, regular review of data access capabilities, downstream dependencies, and most importantly, data dictionaries with systems of record that dictate clear ownership over individual fields. Maintaining a living data ontology should be made seamless, but also protected by rules and documented understanding between stakeholders and collaborators.

Project Management Software (JIRA) | Semantic data configurations (Elasticsearch)

5. Stack Management, Observability, & DevOps



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Executive Summary

Visibility into customer behaviors and buying patterns has transitioned from being a source of competitive advantage to being a prerequisite for doing business online. With the ubiquity of digital marketing technologies and the tremendous variety of solutions offered to help solve individual elements of this business need, the seemingly endless possible permutations combining potential solutions are often intimidating or inaccessible to many businesses. Triangulating technical overhead, financial investment, and data privacy concerns without a proper understanding of the broader market best practices is impossible.

This project, led by Dr. Emre Korkmaz and researched by Jake Stein from the University of Oxford will enumerate the core considerations, strategies, and technical solutions available to businesses. It will seize on the deep research and the industry expertise of this team in order to provide a core set of recommendations for a tangible, unified solution based on core business parameters and desired outcomes. The following proposal will set out the core framework, workplan, and goals for research.

About the Researcher

Jake Stein is a current MSc in the Social Sciences of the Internet at the Oxford Internet Institute where he studies novel applications of machine learning, data ethics, and data governance. After graduating from Yale with honors, he worked in Silicon Valley for a Nasdaq 100 company as a data scientist, product manager, and product researcher. During his time in the private sector, his work developing big data analytics techniques, marketing automation, and attribution tools won awards and was presented at leading industry conferences.

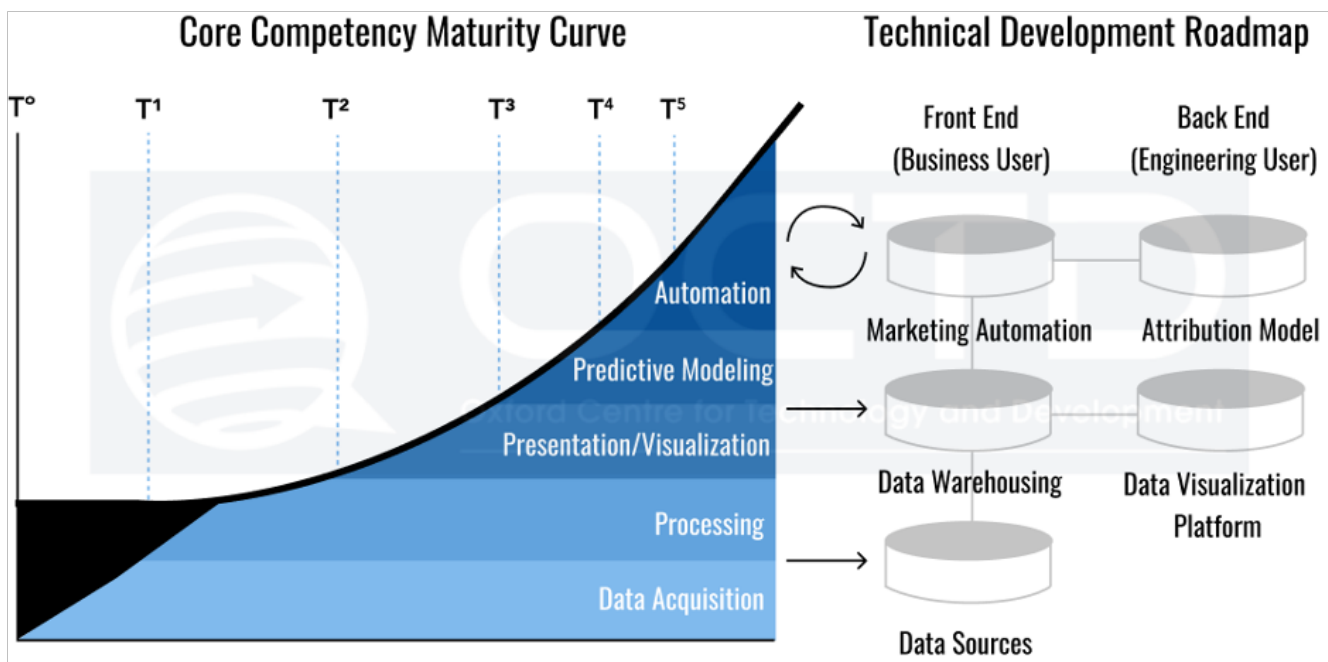
Objectives

The outcome of this research will provide a detailed set of strategies that our partners and clients can select from to assist its customers based on a set of maturity criteria defined by the research. The research will also determine the appropriate partner organizations to provide services necessary to support each stage of digital marketing development. The model will outline software, labor, and hardware requirements to achieve increasing levels of capabilities including:

1. Data Acquisition
2. Data Warehousing (Cloud Computing & On Premises)
3. Cybersecurity (Role Based Access Controls & Master Data Management)
4. Online Analytical Processing (OLAP), and
5. Marketing Automation.

Further, a scale of pricing to allow clients to understand what marketing visibility should be expected per dollar spent will be provided to guide clients to the best strategic decisions in building their marketing practice.

Original research detailing the costs and benefits of available and developing big data analytics solutions, alternative data governance models, and auditing mechanisms will be provided in addition to background research on existing solutions.



Background

The team will ground its findings by gathering information on existing uses of marketing technologies by a broad variety of businesses. As different businesses will have fundamentally different online tracking needs, the research will begin by determining a set of parameters by which individual businesses' marketing automation and attribution needs might vary in order to determine the proper dimensions to be built into a framework.

These may include but are not limited to: data sources that need be ingested (Social Media, Search Engine Optimization, 3rd Party Site Referrals and Advertising Placements), existing data infrastructure (Business Intelligence Systems, Customer Relationship Management Systems, website hosting), budget, and target metrics and/or desired level of visibility.

Step 1, Industry Research:

The team will begin by engaging existing industry resources, white papers, conference proceedings, and product testimonials to solicit information both from in-house marketing teams and digital marketing consultancies to ascertain the state of the art and forthcoming technologies used in the broader market.

Step 2, Technical Evaluation:

The robustness of systems, including software and hardware requirements will be a key concern in the viability of any proposed solution. The team will provide findings regarding scalability, vulnerabilities, and pitfalls of marketing solutions currently found to be popular. It will provide specific guidance for the scalability of systems recommended and detail potential complications or pain points.

Algorithmic Attribution:

The current landscape of marketing attribution algorithms is diverse in its evaluation and emphasis of actions leading to sales and customer retention. The researchers will provide detailed mathematical evaluations to determine the sets of constraints and prioritizations.

Data Ethics:

There is a rising concern in the digital marketing community around consumer consent and data privacy. Taken into consideration in each step of this process will be the potential data ethics implications of the recommended software and practices. This is a core element of the research not only for the sake of independent ethics, but also in terms of industry state of the art, given GDPR and like legislation can constitute significant financial and legal risk and impose significant technical requirements when collecting and storing digital marketing data.

Results:

Results will be presented in a set of technical recommendations actionable in the development of a suite of tools, terms of use for those tools, and specified partners who might be able to support service requirements depending on the model's recommendations.

Ethical Considerations

All necessary precautions will be taken with regards to protecting intellectual property and ensuring proper data ethics practice. Research will pay special attention to emerging Alternative Data Governance Models that make use of privacy-preserving technologies. Guidelines for ethical development of technologies as understood in the academic and professional community will be considered at each stage of research and development. Data privacy, legal implications and consumer data protection will figure prominently in final recommendations.