



# **Data Maturity Model:** **Digital Advertising**

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This document has been developed by the IAB Data Council and the IAB Data Center of Excellence.

The following IAB member companies contributed to this document:

Buzzfeed	Match Media Group
Cisco	Media Management
Connexity	Pandora
Facebook	Sparrow Advisers
Google	Xaxis
Lotame	
Magnetic	

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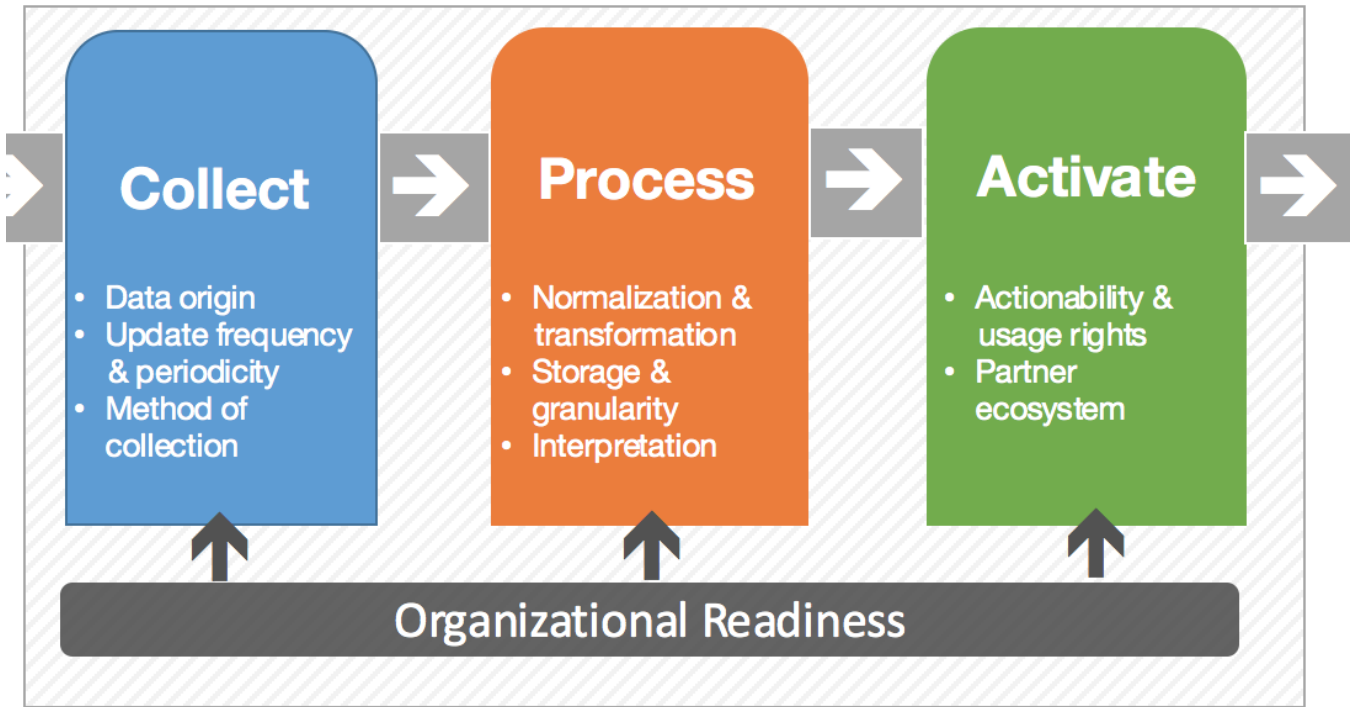


Figure 1: Data lifecycle illustrated

The data lifecycle is made up of the following stages:

**1) Data Collection**

Data collection describes a company’s ability to aggregate all relevant data points from all relevant channels in a timely and efficient manner.

The following can be used as criteria for evaluation of maturity ranking:

a. Data origin (source)

Frequently the same data point can hail from multiple source systems. Understanding where and how an individual data point is sourced is a necessary step towards ensuring overall data quality but also focusing on the most economical sourcing of key data points.

Low maturity	Medium maturity	Advanced maturity
Typically single-source origin from a single digital channel, like a 3 <sup>rd</sup> party data provider	Several independent sources from one or more source channels (e.g. customer activity from website and mobile apps)	Robust data ecosystem spanning 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup> party data sets from multiple source systems, providers, and channels (including offline)

b. Update frequency & periodicity

Once collected, data points are subject to periodic updates. The optimal interval of updates varies depending on the data point: for example, a person's age needs to be updated once a year while any change in their in-market preferences needs to be reflected as close to the expression of these preferences as possible. Adhering to a consistent update frequency will ensure data freshness and accuracy.

Low maturity	Medium maturity	Advanced maturity
Unknown or uncertain frequency of update. Unclear how fresh a data point is.	Certain data points have a defined frequency of update (e.g. every 30 days). Some systems can exclude data points that are not considered fresh.	Frequency of update is known for all relevant data points and any data that hasn't been updated in desired interval can be excluded from use and expired in all downstream systems.

c. Method of collection

The mechanics of collecting data points can vary and serve as an indicator of a company's data maturity. Data collection often times begins with one channel and one system (e.g. collecting data via a script when a user visits a webpage) and becomes more automated and integrated as data collection use cases expand to include multiple channels and a variety of source systems.

Low maturity	Medium maturity	Advanced maturity
Data collection is available in a single channel. Collection is predominantly ad hoc.	Data is collected from at least two channels and sources. Deeper integrations between source systems are explored.	A robust, automated collection mechanism exists for multiple channels and sources.

## 2) Data Processing

Once data is collected it needs to be normalized and stored so it can be easily queried for further research and analysis, as well as for activation. Most of the data sets will fall under the definition of big data so a carefully planned architecture and data warehousing strategy is needed to make sure data maintains its utility.

The following can be used as criteria for evaluation of maturity ranking:

a. Normalization, transformation and storage

All collected data must undergo necessary transformation and normalization to create a cohesive data set that contains all known information about users.

Low maturity	Medium maturity	Advanced maturity
Data points exist within multiple different source systems (e.g. web analytics tool, ad server, etc). Manual connections can be made (through analysis).	A unique identifier for all user-level data emerges and some data signals tie into it. Other signals and data points that don't fully correlate and are left as standalones within their respective source systems.	All user signals are correlated to a unique User ID and a full picture of user journey exists across all relevant channels. Normalization, transformation & storage are automated and strong technical integrations exist between relevant source systems.

b. Segmentation, data analysis and interpretation

At this stage of the data lifecycle data has been collected, normalized, and stored – through segmentation, analysis and interpretation the necessary business context and rules are applied to the underlying data assets. Marketing and ad sales teams will seek to create targetable user segments while research and analytics departments will seek a deeper understanding of user behavior and characteristics.

Low maturity	Medium maturity	Advanced maturity
Segmentation data is mostly observed and binary (e.g. a user exhibits a qualifying trait or she doesn't). Limited understanding of segmentation qualifying criteria and no visibility into recency, frequency, or strength of a data point's signal.	Segments are created based on strength of signal exhibited (e.g. where in low maturity a user exhibits purchase intent for a camera, in medium companies have the ability to more granularly define what the criteria for exhibiting purchase intent is). Companies can understand what users are likely to do but lack insights into why.	Observed, declared, inferred and modeled signals are used to create segments along with active and algorithmic scoring of individual signals. Company can answer why users are exhibiting certain traits and confidently predict business impact.

**3) Data Activation**

Data activation refers to making relevant data points actionable in all applicable downstream systems. Activation in this context spans everything from the ability to granularly target users outside of a company's owned and operated properties, through on-property personalization efforts, to analytics and research use cases where the data is used primarily as an input. It also covers emerging use cases like new platforms (e.g. IoT) or forms of media.

The following can be used as criteria for evaluation of maturity ranking:

a. Actionability and usage rights

All data in digital advertising is collected with the idea that it will influence some downstream action. A company's ability to capitalize on its data assets depends on understanding which data points to take action on and having the ability to take desired action while adhering to privacy considerations and usage rights.

Low maturity	Medium maturity	Advanced maturity
Company can take action on certain data points within individual channels typically through partnerships with execution channels. No ability to restrict how many times or where a data point is used. Little insight into attribution.	Company has initiated centralized efforts to manage actionability across multiple channels and feedback loop for attribution purposes. Some channels may still be supported individually. Considerations for privacy and data rights usage are being built into all initiatives.	All data activation efforts across all channels are managed centrally. Algorithmic optimization is available and data science is integrated into the data lifecycle. Clearly defined and enforced usage rights (including expiry of data points in all downstream systems).

b. Partner ecosystem

A strong partner ecosystem is necessary for data activation and in many ways table stakes for a successful digital advertising business.

Low maturity	Medium maturity	Advanced maturity
Limited ability to take timely action on data-driven initiatives. Ad-hoc partnerships and one-off or manual transfers of data are possible. Activation typically limited to own properties or technology stack.	Company has developed a well-rounded ecosystem with robust technical integrations that lets it execute data-driven activities across all currently relevant channels.	Company engages in active business development and continues to invest in partner ecosystem development.

**4. Organizational readiness**

Organizational readiness is a cross-cutting dimension and affects data collection, processing and activation. It refers to internal awareness, structure, resourcing and support for data-driven initiatives. Organizations of different sizes will display levels of readiness differently and a custom assessment is recommended in each case.

The following can be used as criteria for evaluation of maturity ranking:

a. Culture and process

The shift to a data-driven culture requires flexibility, experimentation, and tailoring of established processes to remove any legacy organizational obstacles (including revising the reporting structure and creating incentives for ambitious data initiatives).

Low maturity	Medium maturity	Advanced maturity
Low awareness of data value across the organization. Many decisions based on gut, not analysis.	Company makes data-driven decisions in many business areas. Cross-functional teams are taking advantage of data.	Clear owner & champion of data at executive level. Clear cross-functional alignment on data priorities. Teams incentivized to collaborate.

b. Structure and expertise

Knowing how to effectively structure a data-driven team and what types of expertise your organization needs have to date have largely been skills acquired through practice. To facilitate this process the IAB has designed a new certification track aimed at data professionals as well as an upcoming whitepaper on organizational design.

Low maturity	Medium maturity	Advanced maturity
Skills concentrated solely in individual teams. Expertise is often project-oriented.	Defined career path for data professionals emerges. Active knowledge-sharing between teams.	Clear owner & champion of data at executive level. Significant investment in training and certification.

## The data maturity model for digital advertising

Initial uses of data in digital advertising have been highly tactical and usually limited to the context of retargeting or activation across programmatic advertising. To truly realize the potential of user-level data companies need to approach their data assets strategically with sign-off and investment from executive leadership. Effective uses of data aren't just an investment in technology but a true business process transformation; while most of the initial use cases will be on the marketing side of the house, applications in other business areas are emerging (e.g. using browsing behavior to gauge user interest in additional content production around a premium video asset). Finally, a company must be organizationally ready and staffed appropriately to take advantage of data. Hiring new staff and training existing teams will be key components to achieving a higher level of data maturity.

The chart below illustrates 5 different levels of increasing data maturity. By using the data lifecycle as a basis and evaluating it through the lens of organizational readiness companies can self-assess where they currently fall on this spectrum. Maturation efforts should not be seen as a single project but rather a roadmap of initiatives that, when executed together by all relevant teams gradually increases a company's overall data maturity.

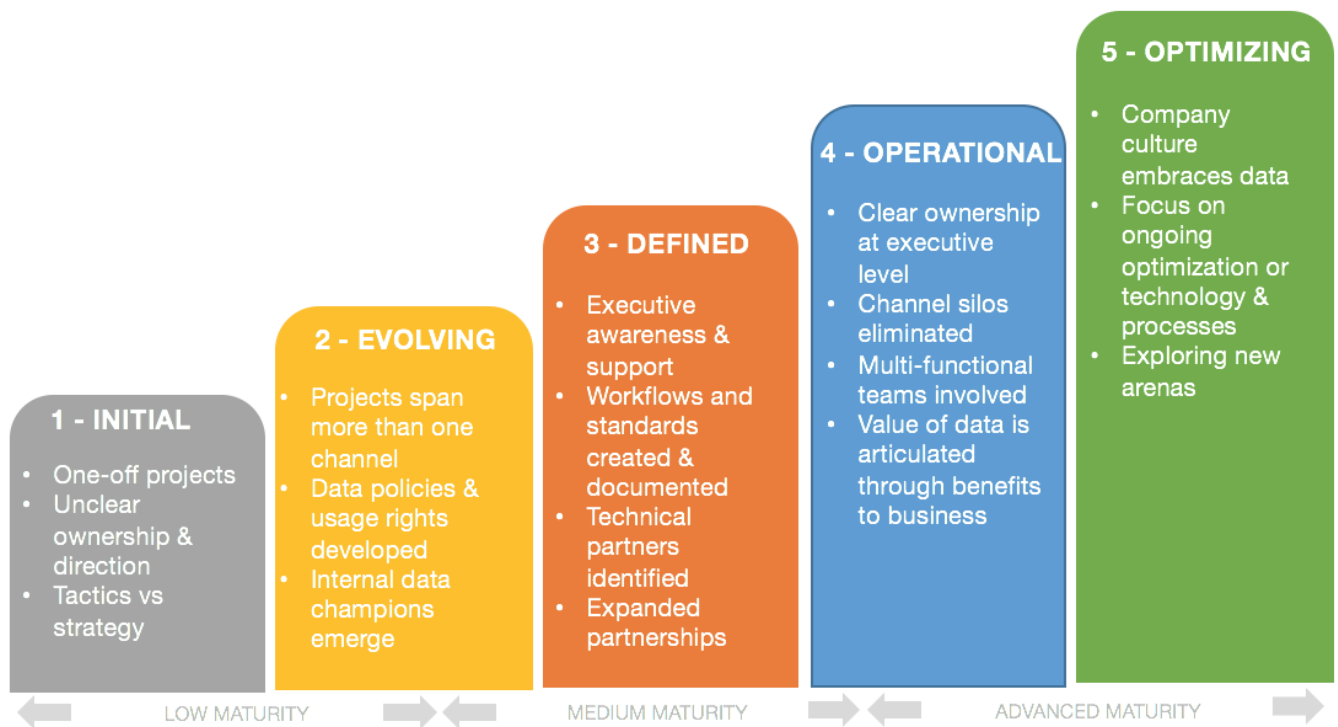


Figure 2: Data maturity model