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Any discussion of integrations and data management inevitably gets expanded to include references to a central data storage location controlled either by IT or a dedicated marketing data team. Terms typically used to refer to this database can include data warehouse, data lake or MDM.

Collectively, these systems are the embodiment of Big Data, the hottest enterprise trend of 2014. They act as a central repository, collecting all the data possessed by the business in one place ready for data analysts and data scientists to discover the trends and patterns that can improve marketing results and enhance corporate performance.

To the typical marketer, these tools are a mysterious black box containing vast quantities of data that could

be used for campaign segmentation or performance analysis if only the high guardians of IT weren't on hand to stop them. Those access restrictions typically exist for a reason.

Data architecture is a complicated business of critical importance to the modern enterprise. It takes a highly trained specialist months to understand all the data sources within an enterprise and what they can be used for. The average field marketer would be quickly overwhelmed by the array of information contained in the typical data warehouse.

Enterprise architects are highly sought after for their ability to harness the complex web of technology and data in ways that can empower the business. There are many different types of database, each with their own core purpose. Most companies will have more than one, and it is.



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# EDW: Enterprise Data Warehouse

The original big data solution

Originally pioneered by IBM, the EDW has been a backbone of the enterprise since the earliest stages of the modern computing revolution.

Since their invention in the 1970s, Enterprise Data Warehouses (EDW) have been at the centre of the data-driven enterprise.

Intended as a mechanism for structuring all the data held by the business into a single highly organised data repository, they were the very first answer to the big data challenge faced by organisations that collected large volumes of data.

#### Rigid Structure

All the data collected in an EDW is normalised into a fixed structure that can be used by executives for analysis and decision-making.

As such. the data structure of an EDW is inflexible, with changes to fields and values requiring custom configuration or development.

That structure is defined by those who manage it, and all data that comes into the warehouse needs to

be converted into a set of tables, fields and values using ETL methodology.

#### Extract, Transform, Load

EDWs are based around an 'Extract, Transform, Load' (ETL) methodology, that dates from the very first databases.

Using ETL, data is extracted from other tools on an automated basis, converted into the format required by the data warehouse and loaded in for future use. Manual data uploads are strongly discouraged due to scalability and the potential for errors.

#### **Specialist Use Cases**

Usage of data warehouses has been on the decline, with specialist tools taking over many use cases. However, they are still heavily used by data analysts as the back-end for their reporting visualisations.

Bl tools such as Tableau, Qlik or Domo all include their own data warehouses or integrate with third party data warehouses as one of their primary data sources. Other cases for data warehouses have since been replaced by newer technologies.



## **Data Lake**

Raw data at cloud scale

#### Designed as a more flexible alternative to the traditional EDW, Data Lakes are a product of the cloud computing boom.

One of the newer data storage technologies, the most widely used data lakes such as Azure Data Lake, Amazon S3 or Hadoop are cloud technologies.

Like the data warehouses that proceeded them, they are designed to act as a central repository of all enterprise data so that it can be used for analysis or decision-making.

#### **Unstructured Data**

The difference between data warehouses and data lakes is that the data in data lakes is unstructured. Any data loaded into a data lake is left in its raw format, and no attempt is made to organise that data or clean it.

Many enterprises found that their data warehouses were too rigid to cope with the enormous quantities

of data they now possess, so have invested in Hadoop or similar technologies to overcome the big data challenge.

#### **Deferred Complexity**

Data analysts connect to the data lake, extract the information they need for their current analysis and convert it into a suitable format for that analysis without changing anything in the original data.

This approach significantly increases business agility, particularly in organisations with a large and complicated tech stack where technologies are constantly changing.

Developing an integration between two systems takes a significant amount of time and effort, which is made infinitely more complicated when changes to data formats are required. By deferring the need to normalise data under it's actually used rather than when the integration is created, there is a significant saving in both time and financial investment particularly given that most data analyses require a degree of data transformation anyway.



Often abbreviated to MDM, Master Data Management is a methodology for making the data warehouse more accessible to business users.

MDM is a recent offshoot of data warehousing, reacting to the fact that most enterprises have too much data for the average business user to understand. As such, Master Data Management is both a methodology and a technology.

Using the MDM methodology, data analysts take the most important information out of all of the various data sources in the enterprise and organise it into a single easily understandable database that can be used by the entire business across all functions. This can include finance and operations as well as sales and marketing.

#### The Marketing Context

In a marketing context, MDM is typically the master contact and account database for the enterprise, holding the most complete picture of who customers are and their relationship history.

This helps overcomes one of marketing biggest complaints in most businesses; namely that they don't have an accurate view of customers are and what they've previously purchased.

The aim for MDM projects is always to create a system of record, which contains a heavily cleansed and normalised view of every contact and account as well as the key information that every department has on them. It will definitely include profile information from both marketing automation and CRM, as well as information from ERP and finance systems.

#### **Consent Master**

In many organisations, the MDM system is also responsible for consent management under GDPR, recording a full history of every contact and account's opt-ins and marketing or profiling permissions. MDM systems generally only cover known contacts and accounts.

Anonymous activity and engagement data are often ignored, as this data is not considered to be a high enough standard for what is intended as the master system of record.



#### Often abbreviated to DMP, Data Management Platforms are used to build audiences for digital advertising campaigns.

Most frequently used in B2C marketing and B2B advertising, they typically only deal with anonymous web visitors. This contrasts with MDM, which only deals with the world of the known business contact.

DMPs are used to build audiences for digital advertising campaigns, which are then synced to DSPs when the time comes to launch a campaign.

Most DMPs are simply pools of third-party advertising cookies dropped by the platform vendor on the devices of web visitors. The DMP vendor then builds a profile of the individual in front of the cookie based on IP information and the data collected by the cookie.

#### **A Closed Shop**

Only rarely does the data in a DMP integrate into the broader enterprise technology landscape. Few DMPs attempt to link the data they contain to known contacts or customers in the enterprise as the cookies behind the DMP are controlled by the vendor rather than the customer, and in some cases may be used by all of the DMP's customers.

The most sophisticated DMPs can sync with data listsfrom other databases, allowing you to build audiences of known accounts and contacts in third-party tools such as intent data platforms or marketing automation. These are then matched to the data in the DMP using propietary data matching rules for retargeting through an integrated ad network.

#### Internal vs External

Until recently, few businesses have owned or controlled a DMP for B2B marketing. Advertising was often left to agencies with the necessary specialist expertise. This is beginning to change, as digital advertising and inbound are becoming more important components of the marketing mix. Many B2B marketers now have sufficient in-house advertising expertise to warrant investing in their own DMP that can be much more closely integrated with the rest of the technology stack.



## CRM: Customer Relationship Management

#### The sales-centric view

Typically managed by IT on behalf of Sales, marketing often only has limited influence over the structure and contents of the CRM system.

Many organisations do store their enterprise marketing database in the CRM system and use it as the basis for campaign segmentation and reporting, but this is becoming less common as the complexity of reporting requirements and marketing data increases.

Primarily, CRM is the system of record for customers and prospects in current or past sales processes.

It contains a record of all information deemed important by sales, as well as any activity or engagement information considered to be relevant to sales by marketing or customer services teams.

Other use cases for CRM such as customer services are increasingly being superseded by point solutions.



### MA: Marketing Automation

#### The evolving tech stack

Over the past decade, many marketers have tried to use marketing automation as their primary marketing database.

This was often one of the initial justifications for Eloqua or Marketo adoption but has faded over time due to the inflexibility of the average marketing automation database. MA is heavily contact-centric, which causes problems when trying to run ABM or inbound marketing through marketing automation.

Marketing Automation is still often used as the master contact database for outbound campaigns, but more complex segmentation is done through other systems.

Instead, the primary use case for marketing automation now lies with the advanced workflow engine possessed by the leading platforms which allow complex nurture workflows to be built and lead management processes to be automated at scale.



### **CDP: Customer Data Platforms**

#### New kid in the stack

The newest type of data platform in the B2B marketing tech stack, CDPs are marketing-centric databases designed to collect all the information that the marketing department holds about all customers and prospects in one central database.

CDPs natively handle account, contact and anonymous visitor information and aren't supposed to privilege one data source over the others. They build a single customer view, including a harmonised of view of both profile data and activity data across the entire marketing technology stack all normalised using AI.

CDPs will bring the different marketing channels closer together, and link the technology stack in a way that other databases haven't been able to until now.

The leading CMS vendors have had CDP integrations for a while, and now the leading marketing automation platforms are following suit. It's still early days for the CDP in B2B, but the technology has seen great success for B2C marketers.





## **Data Quality**

#### Enrichment, normalisation and deduplication



Strict data protection laws have endangered the traditional data vendor. It is no longer possible to build a best-of-breed marketing database by buying vast quantities of contact data from list brokers.

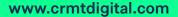
Thankfully, a new breed of GDPR compliant data sources have arisen to update and refresh the contacts in your marketing database as they move companies and change roles.

Meanwhile, account level information is not covered by GDPR, and can be pulled in automationally from a data enrichment platforms such as LeadSpace and data vendors such as Dun & Bradstreet.



In the modern marketing landscape, data is more than just email addresses, phone numbers and company names. What you're doing is just as important as who you are. When scoring leads and segmenting campaigns, implicit behavorial data is far more important than the information on the contact and account profile.

Intent data platforms are the data vendors for this behavorial data. They aggregate activity from across the web to tell organisations which accounts are searching on topics relevant to their business. Marketers use these account lists to target campaigns while they're still engaged and researching your products and solutions.





Data is only as useful as it is accurate. Given the sheer amount of data collected by sales, marketing and customer service teams, it is inevitable that much of it is either inaccurate or incomplete.

Furthermore, changing job roles and the natural cycle of change and evolution can cause previously accurate information to become outdated very quickly.

Maintaining an accurate marketing database is an ongoing challenge that requires a whole set of technologies and processes, regardless of the campaigns that are executed with it and technologies used to store it.



Accuracy is not the only measure of good data quality. The cleanest database in the world is only useful when classified using categories that make sense to the business. Data normalisation is the process for creating and maintaining those categories.

Job title is an essential field in any B2B marketing database, but can be overwhelming when used for segementation. For this reason, most organisations standardise job titles into a short list of job roles or personas. Data normalisation software, such as **normalator**, automatically calculates the correct job role, persona and country for your entire database using Al models and predictive matching.



Duplicates are a fact of life in any database. Sales will create new contacts without checking whether they exist already. Prospects will provide inaccurate details when filling out forms.

This seemingly minor annoyance can lead to enormous problems when left unchecked. Regular deduplication and data merging is therefore an essential part of any data management routine.



Put simply there are many, many options for improving data quality.



## Where to find expertise and resources

CRMT Digital can help you with the strategy, execution and transformation of your Marketing Operations function to deliver efficiency at scale.

We work in partnership with global organizations at various stages of

marketing maturity. Our experts combine 15 years of experience at the forefront of marketing and sales technology with strategic consulting knowledge to help drive your organization towards excellence.



Get in touch today - we'll be glad to help. Contact us at info@crmtdigital.com or call us:

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