Data Clean Rooms
Classification and Status from a Digital Economy Perspective
Data Clean Rooms

Classification and Status
from a Digital Economy Perspective

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Background

Data Clean Rooms (shortened to DCRs), as well as Privacy Enhancing Technologies (shortened to PETs), are terms that describe solutions intended to ensure that data is handled in a data protection-compliant manner within the context of digital marketing and other areas. These solutions are not only designed to facilitate the data-based marketing of digital advertising spaces in the future but also to analysis these and measure their success.

There is growing concern in society and on the part of the consumer with respect to data collection and data usage. According to a study carried out by KPMG, 54% of the users do not believe in the ethical usage of their personal data, with 53% not believing that data collection is done in an ethically-compliant manner by the companies concerned.

At the same time, demands on companies to provide ROI-optimised and scalable campaigns from within the digital advertising eco-system that are first and foremost data-based and target group-specific, but which at the same time fulfil the data protection requirements set down by the legislator, and, in particular, the user - despite continually changing general conditions - are ever increasing and aimed at regaining the user’s trust - i.e. the trust of the advertising target group.

The fragmentation of the advertising identity landscape and the post 3rd party cookie era in the digital marketing area, which have been topics of discussion for years, have now become reality. In the Safari (Apple) and Firefox (Mozilla Firefox) Internet browsers, as well as the iOS operating system (Apple) installed on mobile devices, approx. 35% of the Internet users and 38% of the mobile users are no longer addressable today using the standard methods used in the past, i.e. personalised identifiers. Due to the announced abandonment of 3rd party cookies in the Chrome browser (Google), it will no longer be possible to do data-driven marketing the way it was done for many years in the past.

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1 Source: The new imperative for corporate data responsibility, KPMG LLP, 2020
As a result, there is an increasing demand for alternative solutions for building target groups from data that already exists, i.e. where the user has already consented to its usage and which, accordingly, complies with the data protection regulations, and to make this data available for digital advertising purposes.

The technology used in Data Clean Rooms is intended to allow different partners (e.g. advertisers and publishers) to jointly process different data pools. A Data Clean Room provides a broad and secure solution to achieving this objective by protecting the data being used by the collaborating parties from unauthorised access by the respective other party or by third parties and, depending on the technology used, by only processing this data in a neutral space or via a decentrally organised infrastructure. This is also expected to allow data-driven marketing activities to be carried out even when the general regulatory and technical conditions are being tightened up.

In this White Paper, we will be defining all the terms connected with Data Clean Rooms and illustrating this topic using numerous application examples. We will be providing our readers with basic help and guidance. The complexity and rapid development of the Data Clean Room concept means that this White Paper will be unable to fulfil expectations with respect to remaining up to date and providing a complete picture in the long term.
This White Paper is based on the following definition of what a Data Clean Room is:

A Data Clean Room is a neutral platform for the collaborative processing of different data sources. In a Data Clean Room, two or more parties can process data within a pre-defined and limited scope and time period without needing to disclose or exchange this data with one another. The aim is to create a new, aggregated data record that does not allow any conclusions to be drawn as to the original data.

Data Clean Rooms are usually set up decentrally and cloud-based. The main use cases are focused, in particular, on data reconciliation, data enhancement and holistic data analysis.
Use Cases

Data Clean Rooms offer a multitude of potential applications as a result of digital marketing requirements. These fall into the following four categories.

(Note: In the use cases described, reference is made to the reconciliation of 1st party data IDs. What is meant here is the anonymised reconciliation of 1st party data for which consent has already been provided within the secure environment of a Data Clean Room.)

Activation

The activation applications for Data Clean Rooms describe how communication measures can be designed by way of a data partnership between 2-n partners. Communication is usually implemented by the publishers.

The respective data basis is provided by target groups which are (re)defined or further qualified within the scope of the data partnership using 1st party data. This means that it is possible to either directly address the reconciliated target groups of the respective partners or reach brand new target groups.

Target groups can be formed based on IDs, such as strong IDs, cross-market ID solutions and even classic identifiers, such as email and device IDs, and then combined with associated attributes.

<table>
<thead>
<tr>
<th>Audience Activation</th>
<th>Activation of audience segments at partner destinations, such as DSPs, publishers and walled gardens.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience Activation - approaching the seed audience directly</td>
<td>Data partners with 1st party data reconcile the associated IDs, recognise a seed (both partners know the IDs, email addresses, phone numbers, mobile IDs etc.) and then design a direct approach.</td>
</tr>
<tr>
<td>Audience Activation - qualified approach via ID look-alikes</td>
<td>Data partners with 1st party data reconcile the associated IDs and recognise a seed. However, based on the seed audience on the publisher side, a new audience with similar attributes is then created. This is done using integrated machine learning technologies within the DCR or on the part of the publisher. The aim is to find new customers or increase the reach, should the volume of reconciled 1st party data be too small for the envisaged reach and target group size.</td>
</tr>
<tr>
<td>Audience Activation - qualified approach via attribute look-alikes</td>
<td>Data partners with 1st party data reconcile the attributes and respective combinations of these attributes. The aim is to build the audience without using IDs. In the DCR, the publisher can prioritise the attributes to ultimately create an audience using a combination of attributes. This is done using integrated machine learning technologies within the DCR. The audience thus created by the publisher can then be accordingly approached.</td>
</tr>
</tbody>
</table>
Measurement

Measurement applications in Data Clean Rooms describe how activation measures can be evaluated and their success measured through the data partnership. One particular capability of the DCR is that it enables the target groups approached via the DCR within the scope of the activation measures to be reconciled once again with the data partner. The key used in the reconciliation process is usually the 1st party ID of both partners, e.g. strong IDs and cross-market ID solutions as well as email addresses and device IDs. Thus, although the data records are different, it is still possible to evaluate the touchpoint and its respective influence on the target KPIs, e.g. conversion.

One can differentiate between the following typical measurement use cases:

<table>
<thead>
<tr>
<th>Use Cases</th>
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<tbody>
<tr>
<td>Attribution / Journey Analyses</td>
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<tr>
<td>Through the reconciliation of the data from the activation target group with the 1st party data of the advertiser, it is possible to gain descriptive shopping journeys in connection with media exposure. Frequency analyses as well as cross-device and attribution window insights (timing / time to conversion etc.) are also possible.</td>
</tr>
<tr>
<td>Attribution / Measurement: 1:1</td>
</tr>
<tr>
<td>It is possible to measure the impact of the measures by reconciling the data from the activation target group (group of IDs) with that of the conversion target group (group of IDs). In this case, it is possible to identify contacts (IDs) from an online campaign that were converted online - or possibly even offline. If the 1st party audience, resp. their IDs, can be identified via several touchpoints, this means that multi-touch attribution is also possible. In this case, dynamic attribution models could also be applied.</td>
</tr>
<tr>
<td>Attribution / Measurement: Modelled</td>
</tr>
<tr>
<td>If it is not possible to directly reconcile the 1st party IDs, aggregated data records can be analysed via the partners’ Data Clean Rooms. Statistical methods, such as the use of regression models, can also be implemented.</td>
</tr>
<tr>
<td>Settlement</td>
</tr>
<tr>
<td>Tracing back the 1st party IDs of those users who have had campaign contact and displayed the targeted behaviour (e.g. conversion) enables settlement for the services provided to take place in cases where settlement between the media partners is done on a performance-based basis. (This could be compared to an affiliate marketing conversion update).</td>
</tr>
<tr>
<td>Performance Deep Dives</td>
</tr>
<tr>
<td>The reconciliation of the 1st party data of users who have had contact with the activation measure, allows target group and campaign-specific insights to be gained, e.g. cost-performance per audience, ROAS / CPA analyses etc.</td>
</tr>
<tr>
<td>Incremental Reach Analyses</td>
</tr>
<tr>
<td>The reconciliation of 1st party IDs from the activation measures allows the incremental reach per media partner (publisher, data partners etc.) to be determined. This measurement process allows conclusions regarding the user types / attribute overlaps to be drawn.</td>
</tr>
</tbody>
</table>
### Multi-Clean Room Deduplication

Insofar as the activation measures are designed to involve several publishers and run via different Data Clean Rooms, the results can be normalised using modelling methods based on attribution measurements from different Data Clean Rooms (the Data Clean Room of each respective media channel and/or media partner would otherwise attribute the full value of the contribution to itself).

### Audience Insights gained through Activation

By reconciling the 1st party IDs of the advertisers involved in the activation measures with retailers or other media partners, the target group approached and respective targetings can be analysed with regard to additional target groups attributes. Further correlation analyses, e.g. on affinities, new-to-brand analyses, behavioural partners such as product and commodity groups as well as channel/publisher specifics, can also be run.

### Validierung

Data validation

## Audience Insights

Audience insights applications designed for Data Clean Rooms differ from measurement applications in that they generate insights that can be gained independently of the respective activation measures. These applications aim to qualify or supplement one’s own 1st party data records. For example, target groups can be enhanced by additional attributes or these can be accordingly weighted. The key used in the reconciliation process is usually the 1st party ID of both partners, e.g. strong IDs and cross-market ID solutions as well as email addresses and device IDs.

One can differentiate between the following typical insights use cases:

<table>
<thead>
<tr>
<th>Audience Extension</th>
<th>By reconciling the IDs in the target group, new attributes can be transferred to the other data record, e.g. the addition of socio-demographics or interests.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience Validation</td>
<td>By reconciling the target group IDs, existing attributes can be reconciled with those in the other data record and then accordingly validated, such as the validation or prioritisation of one’s own socio-demographics, interests etc.</td>
</tr>
</tbody>
</table>
Monetisation

The monetisation applications used in Data Clean Rooms are primarily directed at media, data and inventory providers. By linking assets (media, data and inventories) with 1st party IDs and making these available via Data Clean Rooms, providers can open up new monetisation models. Extending or linking their assets with other data partners allows them to increase performance.

One can differentiate between the following typical monetisation use cases:

| Portfolio Extension | It is possible to extend one’s own assets through the reconciliation of 1st party data IDs for each individual asset (media, data or inventory). Through this, the attributes of the target groups can be enhanced or validated, respectively, the providers can link their assets to those of others (e.g. they can offer new audiences or extend the reach of their own audiences to other inventories). |
| Portfolio Evaluation | Through the reconciliation of 1st party data IDs with targeting or media partners (e.g. publishers), advertisers can re-evaluate their partners based on their target groups in order to be able to negotiate new conditions or optimise their target group strategy and media mix, resp. campaign plan. |

All of the use cases mentioned above are already being applied in the world of digital marketing so that they are not specifically characteristic of the new potential opened up by Data Clean Rooms. However, from a holistic viewpoint, the fragmentation of the advertising identity landscape no longer allows these to be mapped within a single data inventory (e.g. on a DMP, CDP or 3rd party ad server), but instead requires secure data collaboration between different systems, resp. partners, as described above. This means that Data Clean Rooms serve, in particular, to safeguard existing use cases - even where more rigid data protection requirements are in place.

Types of Data Clean Rooms

In practice, there are many different types of Data Clean Rooms due to the multitude of use cases around. Thus, one must always consider in each individual case who is operating the Data clean Room, for which purpose, using which types of data and in collaboration with whom. To gain a basic classification of Data Clean Rooms, it appears to make sense to divide these into two groups: „Independent Data Clean Rooms” and „Associated Data Clean Rooms”.

While an „Independent Data Clean Room” represents an independent solution - i.e. its does not have its own data inventory and is not directly connected to an ad tech system, an „Associated Data Clean Room” has developed from or is directly connected to a basic system - usually a DMP, DSP or an ad server. In this case, the Data Clean Room is an extension of an existing system, the data of which constitutes the basic data inventory used in the Data Clean Room.
Using this classification, these basic types of Data Clean Rooms can be described as follows:

<table>
<thead>
<tr>
<th>Types of Data Clean Rooms</th>
<th>Independent Data Clean Room</th>
<th>Associated Data Clean Room</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collaborating Parties</strong></td>
<td>Two or more parties use an independent platform to jointly exploit their data.</td>
<td>A basic system is already in use - e.g. a DMP or a DSP - to which a connected platform is then added in order to supplement the existing data inventory with additional data - e.g. 1st party customer data - whilst observing the data protection regulations.</td>
</tr>
<tr>
<td><strong>Analysis Options</strong></td>
<td>Depending on the respective provider, Data Clean Rooms offer many options - from simple overlap analyses to complex script modelling - opening up a range of diverse use cases for insights as well as the measurement and activation of data.</td>
<td>As a rule, a partner’s data can only be used in connection with the basic system data. Partner data can be supplemented for analysis and activation purposes. Usage outside the basic system can be facilitated through external interfaces and systems. However, in the case of an associated Data Clean Room, this is not currently what is intended.</td>
</tr>
<tr>
<td><strong>Identifiers Used</strong></td>
<td>Common matching IDs include email addresses and telephone numbers as well as universal IDs.</td>
<td>System-dependent. Common matching IDs include email addresses and telephone numbers as well as universal IDs. Data from the inventories of the basic system is usually generated automatically.</td>
</tr>
<tr>
<td><strong>Data Activation</strong></td>
<td>It is widespread practice for each respective partner to use the existing activation IDs - e.g. PPID goes to the SSP, activation via the deal or via the IDs on the DSP - as well as activation via connected or the system's own ID graphs. It is also possible to carry out model-based exports of the look-alikes calculated in the Data Clean Room or attribute predictions - depending on the system in question.</td>
<td>Normally, activation is done either in or via the respective basic systems of the associated Data Clean Rooms. Activation via other systems must be individually enabled via other IDs (pls. also refer to „Identifiers Used“ above).</td>
</tr>
</tbody>
</table>
Types of Data Clean Rooms

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</thead>
<tbody>
<tr>
<td>Interoperability</td>
<td>Development of a minimum interoperability standard through the respective standardisation instances, such as the IAB Tech Lab, to ensure that data can be easily exchanged. Various providers already support this standard today.</td>
<td>As a rule, this needs to be established in each individual case.</td>
</tr>
<tr>
<td>Data Control</td>
<td>The data should be controlled using safety measures within the system itself. Data copies are passed on in an encrypted form as far as this is possible.</td>
<td>The data contained in the basic system is protected by the system itself. Should additional data sources be connected up, data control must be individually examined and, where necessary, steps taken to ensure it actually takes place - depending on the respective setup and type of data involved.</td>
</tr>
<tr>
<td>Equal Rights</td>
<td>Based on individual agreements, all the data and insights can be analysed, activated and modelled by all the participants involved.</td>
<td>The options are limited depending on the basic system concerned, whereby it is generally not possible to extend these through individual contracts.</td>
</tr>
</tbody>
</table>

Which type of Data Clean Room is most suitable depends on the individual use case in question as well as the types of data used, resp. available. Initial case studies indicate that a range of different Data Clean Rooms is likely to be operated in parallel in the future in order to be able to exhaustively map all the required use cases. A similar pattern was also observed in other ad tech areas, such as on SSP, DSP and ad server platforms.
Summary and Outlook

The market and market players are aware of the opportunities and predominant challenges that will result from collecting, processing, collaborating, analysing, activating and monetising data under consideration of the respective data protection aspects in the future and are working on finding forward-oriented solutions.

Data Clean Rooms and Privacy Enhancing Technologies will play a major role in these future solutions. Adapting these from a strategic perspective is now being pushed as a top priority agenda point by many of the partners in the market.

Notably, many major advertisers and publishers are already working with Data Clean Rooms. In 2023, for example, 80% of the advertisers in the USA with an annual media invest of over one billion are already deploying Data Clean Rooms. Those users who are already actively using DCRs in 2023 plan to increase their spending in 2023 by 29%.

In this White Paper, we have compared the different types of Data Clean Rooms (independent vs. associated DCRs), including their individual characteristics and distinguishing features, and have also described their respective applications in the activation, measurement, audience insights and monetisation areas.

Based on these applications, concrete business cases are now being successfully implemented both on the German market and at an international level, whereby proof of concept has been achieved.

When using a Data Clean Room today, the availability of the data (e.g. 1st party data, identities) remains a challenge - as does the question of how far the reach will extend and how high the consent rate for using the data will be.

An important prerequisite for the future development of Data Clean Rooms is the definition of standards on an international level aimed, amongst other things, at supporting collaboration and the interoperability of individual Data Clean Rooms.

Currently, the development of Data Clean Rooms and Privacy Enhancing Technologies is only just kicking off compared to the established data solutions, such as DMPs (Data Management Platforms) and CDPs (Customer Data Platforms). However, given the existing demands in the market, these need to be further developed and spread rapidly.

Close cooperation between the different market players and industry associations (e.g. BVDW, IAB Tech Lab) is an absolutely vital prerequisite.

All the authors of this White Paper are - without exception - members of the BVDW Lab Data Clean Rooms. Their close collaboration has allowed a broad spectrum of knowledge and experience on the part of the technology providers, publishers, advertisers and agencies to be incorporated into this White Paper.

We hope that we have been able to provide our readers with a good understanding of the topic and an overview of the status quo, and that we have successfully illustrated in our use cases how DCRs can be implemented.

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2. Gartner for Adweek, 16.3.2022
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The Bundesverband Digitale Wirtschaft (BVDW = German Association for the Digital Economy) is the central body for the representation of interests of companies that operate digital business models and whose value creation is based on the implementation of digital technologies. As the driving force, guide and accelerator of digital business models, the BVDW represents the interests of the digital economy towards politics and society and campaigns for the creation of market transparency and framework conditions that encourage innovation. With figures, data and facts, its network of experts provides orientation for a central area of the future. Besides DMEXCO and the German Digital Award, the BVDW organizes a multitude of professional events. With members from many different industries, the BVDW is the voice of the digital economy.

Focus Group Programmatic Advertising

Programmatic Advertising (PA) continues to be on course for success in Germany with double-digit growth rates. It is a central success factor in the media business of the future and one of the most important advantages of digital channels when competing for media budgets. The goal of our Focus Group Programmatic Advertising is to further develop and sustainably shape the programmatic trade of digitally addressable media in Germany. Here, the focus is on quality and professionalisation.

To this end, the committee of agencies, marketers, technology service providers and platform providers focuses on cross-segment cooperation. The main tasks are the communication of the most important technical terms, effectiveness and methods, the development of technical standards as well as the evaluation of quality criteria and the use of data. The Focus Group also cooperates with various national and international partner associations, such as IAB Europe, in order to coordinate and promote transnational developments.

www.bvdw.org
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