



**InDetail**

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## **Experian SCV**

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**Having a single customer view (SCV) is not just a marketing tool. By definition, customer data is potentially sensitive and therefore falls under legislation such as the EU's GDPR. While the creation of an SCV is not mandated by GDPR it will be difficult, if not impossible, to comply with the legislation without a comprehensive view across the data sources that hold customer data.**

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# Executive summary

**A**lmost any company of any size has data stored about its customers in multiple places. A typical retailer, for example, will have a customer relationship management (CRM) system, a separate eCommerce system for online transactions, and a loyalty card system for in-store shoppers. Getting a full understanding of customers, and their behaviour and propensity to buy, is a non-trivial process when customers may have their details stored in each of these applications in different formats and often with different, perhaps out-of-date, personal information. The ability to create a comprehensive and accurate overview of this data, across all of the datasets, is known as a single customer view (SCV). You may also want to include third party information such as demographic, geo-location or credit data.

Having an SCV is not just a marketing tool. By definition, customer data is potentially sensitive and therefore falls under legislation such as the EU's GDPR (general data protection regulation). While the creation of an SCV is not mandated by GDPR it will be difficult, if not impossible, to comply with the legislation without a comprehensive view across the data sources that hold customer data. While we won't go into detail discussing the advantages that an SCV can bring, **Figure 1** (provided by Experian) summarises the potential use cases.

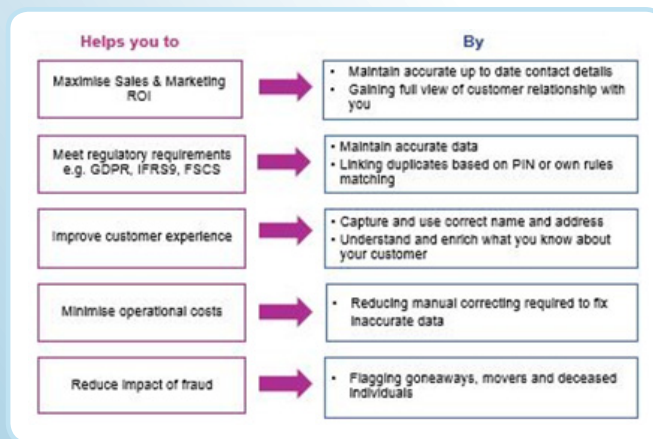
## Key findings

Experian SCV is not a product per se but, rather, is a solution that consists of several components, the main one of which is Experian Aperture Data Studio along with a web-based client interface, the Experian Match API matching engine and various other elements, which we will discuss. In practice, Experian offers this solution either in the form an integrated product suite that enable you to build your own workflows for building an SCV, or Experian can build those workflows, and/or the company can host the environment for you. In this review we will assume that you have adopted the first of these options.

## Fast facts

In the opinion of Bloor Research, the following represent the key facts of which prospective users should be aware:

- All interactions with the data are done via a web-based drag-and-drop client interface.
- Data matching, cleansing, validation and enrichment are all provided.
- Experian supports “pinning”, which provides a persistent key for customer records by leveraging an extensive reference dataset containing over 500 million records. Pinning algorithms are used, in conjunction with rules, to support matching and de-duplication processes.
- When you create an SCV you are effectively creating a “best record” of that customer's data. You can configure your workflows so that source systems are updated as you create new best records.



- Customer data is ever changing. You can schedule comparisons between your SCV and updated source systems to see if any relevant details, such as an address, have changed. You can also trigger an SCV whenever a loyalty database, for example, is updated.
- There are no data masking capabilities built into the solution though there is an API to connect to third-party tools and you can create relevant steps within your workflows.
- At the heart of Experian SCV is Aperture Data Studio, which is a general-purpose data management platform. In this paper we discuss the capabilities with Aperture Data Studio that are specifically related to the creation of an SCV.

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Figure 1: Use cases for a Single Customer View



**Experian SCV represents a practical, easy to use and (relatively) low cost approach to an issue that is top of mind for many organisations.**



- The solution is targeted at domain experts and business analysts rather than IT.
- You can visualise your data, whether for reporting, analysis or review through support for third party environments such as Tableau.

#### **The bottom line**

The concept of the single customer view has been around for a long time. However, the introduction of GDPR has given it a new urgency: if a customer enquires about the data you hold about him or her, or if that customer asks you to delete that data, you have to know where all of that information resides. Having a single customer view is the easiest way to do this. Thus, in addition to the operational and marketing advantages associated with an SCV, compliance is also a compelling reason for adopting this approach.

Experian has taken a lightweight approach to supporting the development of an SCV, as opposed to the more onerous process of implementing Master Data Management. It has recognised that many companies, especially retailers, but also others (such as police forces: single criminal view!), have limited resources and budgets and need something that is easy to implement and work with, and which does not require significant IT involvement. Experian SCV represents a practical, easy to use and (relatively) low cost approach to an issue that is top of mind for many organisations.

# Architecture

The architecture of the Experian SCV solution is shown in [Figure 2](#). While most of this should be self-explanatory (and will be discussed further in any case), it is worth spending a little time on Aperture Data Studio. This was released at the end of 2017 providing data profiling, inspection and preparation for both general use and compliance monitoring; operational data quality and data migration; and support for single customer view initiatives. Notable features include workflow capabilities and the product's support for user personas (domain experts, data stewards, business analysts and so forth). In the case of the latter there are extensive self-service and collaborative capabilities. As far as workflow is concerned, Aperture Data Studio separates data profiling (which is done on all your data, not just samples) from data loading. Thus, data profiling

is an explicit workflow step and distinct from load processes. Moreover, during profiling you can choose which columns to profile rather than profiling the whole table. Address and email verification can also be defined as steps within a workflow, as can functions you have written using either R or JavaScript. Further, it is worth commenting that you can explore and drill-down from a workflow without having to run that workflow, which is not the case with some other products. This means users can save time to check the workflow without having to spend time running the file. Another feature is that you can do trend analysis: comparing, for example, this week's workflow execution with that of last week.

However, the best way to appreciate Experian SCV is by illustration rather than simply a discussion of its features.

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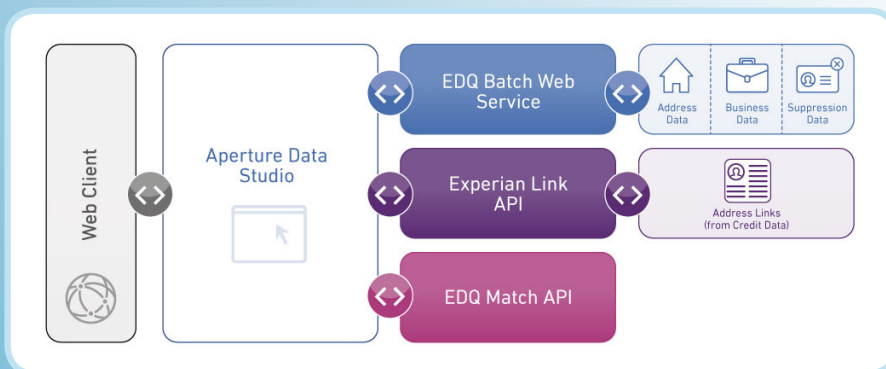


Figure 2:  
The Experian SCV  
architecture



# Working with Experian SCV



There are essentially three things that you do when using Experian SCV: prepare your data, generate a single record for each customer, and create workflows to ensure the SCV is updated with new data automatically.



There are essentially three things that you do when using Experian SCV: prepare your data, generate a single record for each customer and create workflows to ensure it is updated with new data automatically. However, it will make more sense if we start with how you work with (prepare) your data and **Figure 3** shows an example of the sort of display you would be using. In this case, it is identifying potential duplicates within your customer records. Note the likelihood of a match indicated in the right-hand column. Note that Experian has not yet implemented machine learning to improve match rates, but it has done so to support, for example, the identification of contact data, via an auto-tagging mechanism that helps drive automated configuration of various workflow steps.

There a variety of things you can do with your data when it is presented like this. For example, you can automatically convert data formats into a consistent pattern. Or you can convert a birth date into an age, and this is, incidentally, another example where Experian intends to implement machine learning, to provide suggestions as to what transforms might be useful. Other functions including merging or splitting columns (you might want day, month and year shown separately), you can check if a postcode is valid, and if an email address is correctly formatted and even that the domain is valid (Experian can ping it to check this). As the data is enriched new columns will be added, and you can take snapshots of the data at any time. There is also support for classical data profiling capabilities, looking for errors, reporting null values, profiling the occurrence of particular values, and so forth.

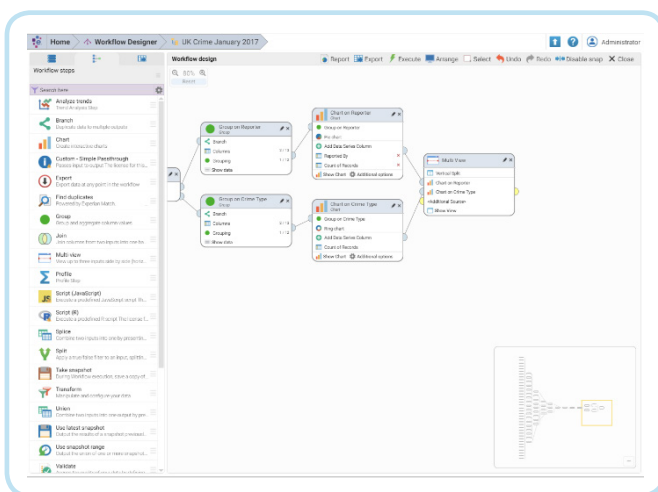
As far as workflow is concerned, Aperture Data Studio provides an environment as illustrated in **Figure 4**. Workflows are created by dragging and dropping steps from the column on the left onto the main palette. It is possible to define your own workflow steps, but many are provided out of the box. Note, too, that workflows are reusable and can be linked to one another. Thus complex processes can be built-up of small parts, rather like microservices.

In practice, the first thing you will need to do is to join the relevant tables from their respective data sources. You might do this based on email address or customer ID or customer name or whatever might be appropriate, or some combination of these. However, good practice would be to validate the data first. In other words ignoring invalid emails or postal addresses and data that should be suppressed, bringing in address validation (see **Figure 5**) and suppression files (gone away, deceased, moved-house and so forth) via Experian's reference data matching step. Experian provides reference data across more than 240 countries. Now you can move on to the de-duplication phase via the dedicated 'Find Duplicates' and 'Harmonise' steps

**Figure 3:** Preparing data using Aperture Data Studio

RecordID	Name	Address1	Address2	Address3	Town	County	Postcode	Email	Dob	Duplicates	Cluster ID	Duplicates Match Status
1	Mr Adam H...	4 Queens P...	CHELTEH...		London	CHELTENH...	GL50 3BB	info@boer...	22/12/1983	13		CLOSE
2	Gary Walker	Arodene R...	London				SW2 2BH	gw@uiwd...	29/02/1979	31		NONE
3	Mr Adam F...	4 Queens P...	CHELTEH...				GL50	info@boer...	22/12/1983	13		CLOSE
4	Mr Adam H...	44 Queens...	CHELTEH...					admin@j...	22/11/1983	13		PROBABLE
5	Mrs Cathie...	Flat 4	12 Greyso...			NOTTINGH...	NG1 1AS	0809wond...	13/04/1978	35		NONE
6	Mr James J...	1 Merry Ro...	LEICESTER				LE1 1JU	jeff@test.c...		36		NONE
7	Mrs Cathie...	Flat 1	100 Fing...			EXETER	EX1 2AJ	qw@v@ma...	13/04/1978	38		NONE
8	Mr Andy W...	34A Kimbe...	Earlsfield			LONDON	SW18 4NP	andy@cds...	13/02/1976	27		PROBABLE
9	Mr Andrew...	34 Kimber...	LONDON				GL50	andy@cds...	13/02/1976	27		PROBABLE
10	Mr Andy W...	The Glen	Kimber Road			LONDON	SW18 4NP	andy@cds...	13/02/1976	27		PROBABLE
11	Mr Jonath...	38 Colliers...	BIRMINGH...				B15 6DF	dtg@builr...		14		CLOSE
12	Mr P Wake...	2 Rue de la Rei	PARIS				75001	fr@yehoo...		32		NONE
13	Mr Jonath...	38 Colliers...	BIRMINGH...				B15 6DF	dtg@builr...		14		CLOSE
14	Mr James...	12 Colbour...	BRIGHTON				BN3 1RD	jamesunde...	21/10/1952	1		EXACT
15	Mr James...	12 Colbour...	BRIGHTON				BN3 1RD	rundsh@b...	11/02/1965	1		EXACT
16	Mrs Janet...	22 Exeter P...	WALSALL				WS2 9UD	janet.dyde...	02/04/1967	16		CLOSE
17	Mrs Janet...	15 Exeter P...	WALSALL				WS2 9UD	janet.dyde...	02/04/1967	16		PROBABLE
18	Mrs Janet...	22-24 Exet...	WALSALL				WS2 9UD	janet.dyde...	02/04/1967	16		CLOSE
19	Mrs Jan Dy...	Exeter Place	WALSALL				WS2 9UD	janet.dyde...	02/04/1967	16		PROBABLE
20	Mr Michael...	The 1st Cla...	WASHING...				NE38 7LX	michaelha...	30/07/1965	17		PROBABLE
21	Mr Michael...	The 1st Cla...	WASHING...				NE38 7LX	michaelha...	30/07/1965	17		CLOSE
22	Mr Michael...	The 1st Cla...	Washingto...	The Green		WASHING...	NE38 7LX	michaelha...	30/07/1965	17		CLOSE
23	Ms Amanda...	Ford House	Ford Mano...	Dormansta...		LINGFIELD	RH7 6NZ	achristie@...	19/10/2000	2		EXACT
24	Ms Mandy...	Ford House	Ford Mano...	Dormansta...		LINGFIELD	RH7 6NZ	achristie@...	19/10/2000	2		EXACT
25	Ms Amanda...	Fordhouse	Ford Mano...	Dormansta...		LINGFIELD	RH7 6NZ	achristie@...	19/10/2000	2		CLOSE
26	Ms Amanda...	Upper Ford...	Ford Mano...	Dormansta...		LINGFIELD	RH7 6NZ	achristie@...	19/10/2000	2		PROBABLE
27	Ms Amanda...	Fords House	Ford Mano...	Dormansta...		LINGFIELD	RH7 6NZ	achristie@...	19/10/2000	33		NONE
28	Ms Amanda...	Ford House	100 Ford M...	Dormansta...		LINGFIELD	RH7 6NZ	achristie@...	19/10/2000	2		CLOSE

**Figure 4:** The drag and drop workflow palette in Aperture Data Studio

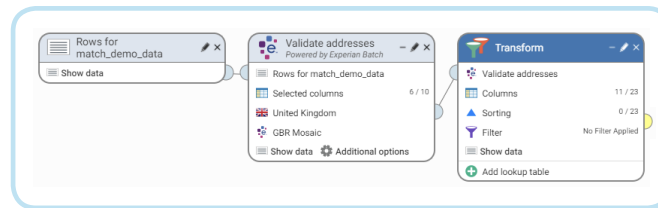


with results as shown in **Figure 3**. Options here include selecting the best record (by a variety of criteria), selecting the best record but adding further details from other records (but ignoring things like old addresses) or merging of records. You have the option to maintain the original data even after merging.

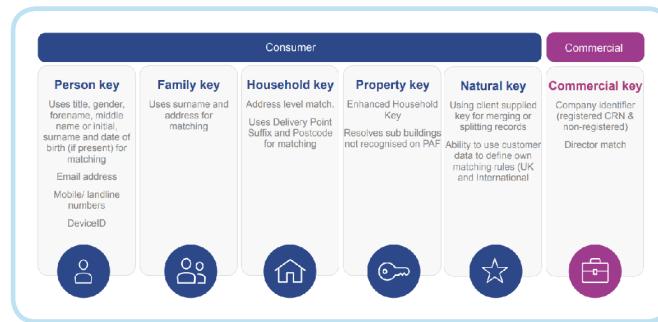
The match engine uses both matching rules on clients' own data and fuzzy-matching algorithms based on the extensive reference data available to Experian to determine a match, with the latter known as pinning. The different types of pin are shown in **Figure 6** and the important points to note about pins are that they are persistent for individuals, households (and companies) even across, for example, different, perhaps out-of-date, addresses.

Once matching is complete you can enrich the data in a variety of ways. For example, you might want to bring in credit data, demographic data from Experian Mosaic or geo-location data from a third-party source (see **Figure 7**). In the case of the latter you may wish to view the data in map format, and you can either use a visualisation tool for this purpose or you can export the data to an appropriate mapping tool.

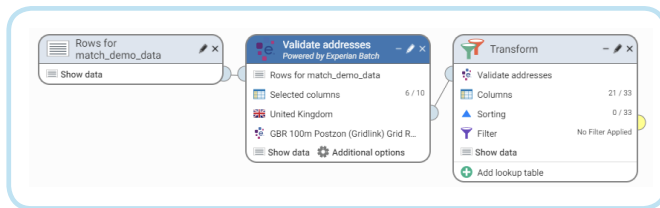
The penultimate step on this journey would be to commit changes to your database or application and, then finally, to use the resulting SCV to either a third-party tool, or you can use Experian's own capabilities to create relevant dashboards. Thus **Figure 8** illustrates a dashboard that shows weekly supermarket spend by customer alongside their Mosaic (customer segmentation) profile.



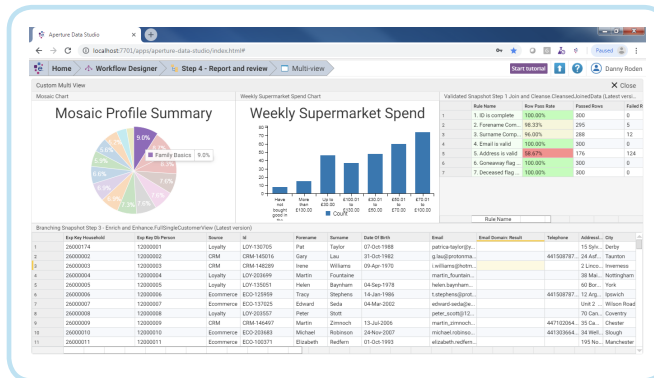
**Figure 5:** Address validation and transformation steps



**Figure 6:** Pinning support provided within Experian SCV



**Figure 7:** Illustrating enrichment with third party postal zone data



**Figure 8:** Dashboard created using Experian SCV

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## The Vendor

**E**xperian was founded in 1803 as a British company. It is now headquartered in Ireland and is a public company listed in London. It is part of the FTSE100. Revenues, which are reported in dollars, were \$4.6bn in the year ending March 2018. The company has 17,000 employees working in 37 different countries. Experian has four business lines: credit services, decision analytics, marketing services and consumer services.

Experian SCV is part of Experian's data quality offerings. Experian is one of the world's leading global information services companies, helping clients manage their data. Experian has been in the data quality sector since 1990 and is well known for its contact data management and address cleansing capabilities.



**Experian is one of the world's leading global information services companies, helping clients manage their data.**





# Summary

**T**here are various ways in which you can create a single customer view. Perhaps the most well-known of these is to use Master Data Management (MDM). However, that is a heavyweight solution that takes a considerable amount of time to implement, is expensive and involves significant IT resource. There are also advocates of putting all of your data into a data lake and using a data preparation tool to create your single customer view. This is fine if what you want to do is analytics or data science but, again, it is costly to set a Hadoop cluster and in any event, the use case that we have been discussing is more operational than analytic, though that is not to say that it does not require support for conventional business intelligence capabilities.

Experian has recognised that both of these approaches – MDM and data lakes – are time consuming and expensive to implement. It has therefore taken a different approach. Using Experian Aperture Data Studio looks and feels like using a data preparation tool but instead of running within a data lake, Experian is deploying it across conventional data

sources and to create single customer views, to support operational and compliance requirements. In particular, Experian is not asking you to move your data into some sort of new environment with all the costs that involves. Instead, it offers a co-existence SCV solution. This is where changes flow from the source systems into a separate repository (often just a relational database) which is where the single record is held (along with whatever information is required: source records, contact data, activity summary, products owned, criminal convictions and so on). So, what Aperture Data Studio does is to help organisations prepare and process their data to help them establish and maintain an SCV. But Aperture is not where that SCV lives, which will normally be an SCV database or CRM system. It allows you to work with your data where it lives but still create a unified and consistent view of each of your customers. We like it a lot: it is easy to use and does what you need it to do.



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## FURTHER INFORMATION

Further information about this subject is available from [www.BloorResearch.com/update/2448](http://www.BloorResearch.com/update/2448)



### About the author

**PHILIP HOWARD**

**Research Director / Information Management**

**P**hilip started in the computer industry way back in 1973 and has variously worked as a systems analyst, programmer and salesperson, as well as in marketing and product management, for a variety of companies including GEC Marconi, GPT, Philips Data Systems, Raytheon and NCR.

After a quarter of a century of not being his own boss Philip set up his own company in 1992 and his first client was Bloor Research (then ButlerBloor), with Philip working for the company as an associate analyst. His relationship with Bloor Research has continued since that time and he is now Research Director, focused on Information Management.

Information management includes anything that refers to the management, movement, governance and storage of data, as well as access to and analysis of that data. It involves diverse technologies that include (but are not limited to)

databases and data warehousing, data integration, data quality, master data management, data governance, data migration, metadata management, and data preparation and analytics.

In addition to the numerous reports Philip has written on behalf of Bloor Research, Philip also contributes regularly to *IT-Director.com* and *IT-Analysis.com* and was previously editor of both *Application Development News* and *Operating System News* on behalf of Cambridge Market Intelligence (CMI). He has also contributed to various magazines and written a number of reports published by companies such as CMI and The Financial Times. Philip speaks regularly at conferences and other events throughout Europe and North America.

Away from work, Philip's primary leisure activities are canal boats, skiing, playing Bridge (at which he is a Life Master), and dining out.

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We provide actionable strategic insight through our innovative independent technology research, advisory and consulting services. We assist companies throughout their transformation journeys to stay relevant, bringing fresh thinking to complex business situations and turning challenges into new opportunities for real growth and profitability.

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