

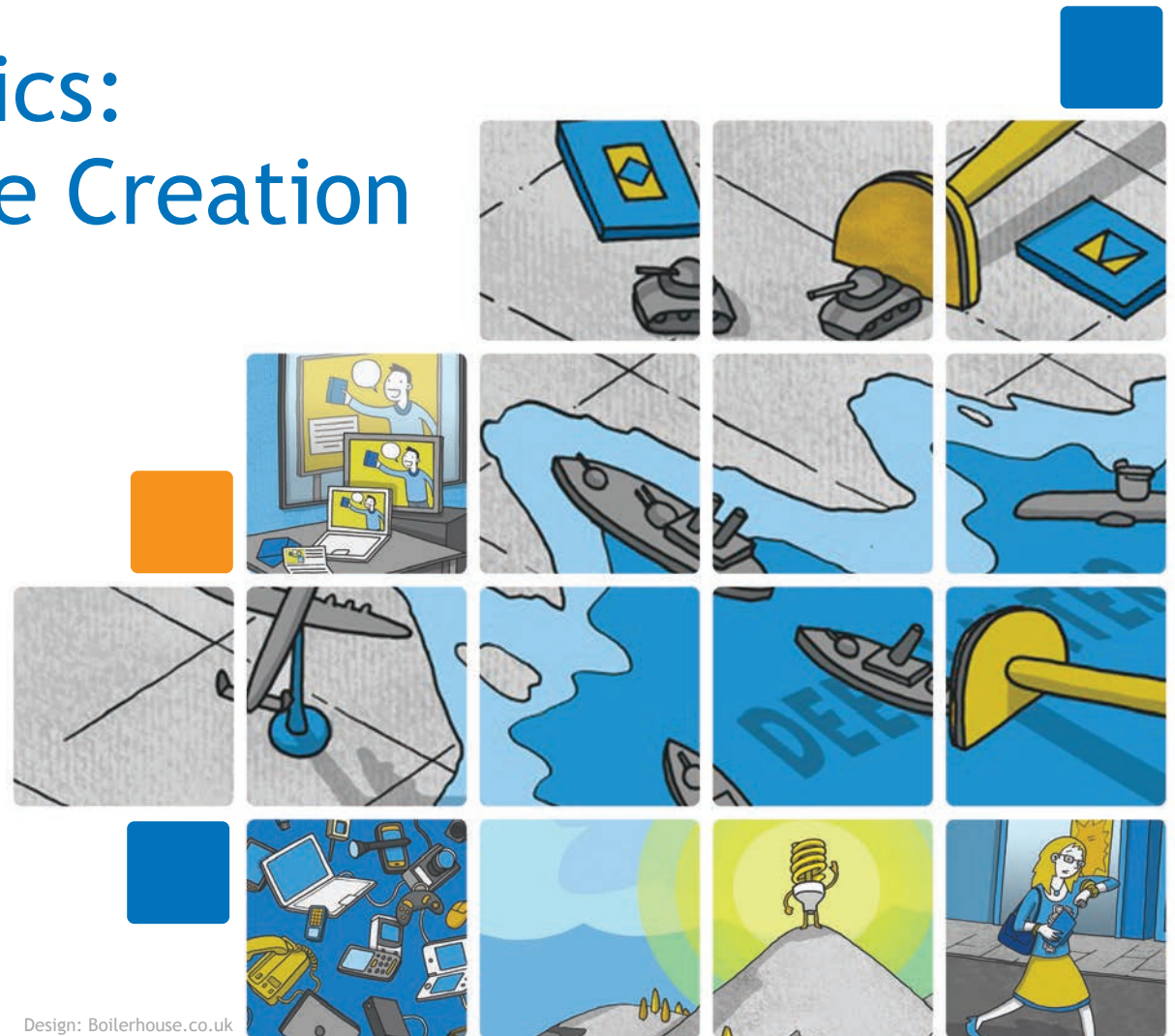
Information Logistics:

Key to Digital Value Creation

October 2012

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Executive Summary

This White Paper is about the challenge and opportunity of ‘information logistics’: of getting exactly the right information to and from the right people in the right format at the right place and time.

Information logistics represents a game changing economic opportunity as big - perhaps even bigger - than that opened up by the invention of the mass production assembly line in the early 20th century.

Information logistics brings two huge benefits.

- It enables a breakthrough in information productivity - the costs of gathering, accessing, combining and using information to make decisions and get stuff done.
- It acts as a platform for innovation - enabling a new ecosystem of apps and information services to emerge.

As soon as the basic principles of the mass assembly line were understood they were applied to produce every conceivable product from washing machines to hair dryers to TVs and mobile phones. Each of these products uses a unique configuration of components to deliver value.

Information Logistics Platforms (ILPs) do the same with information. They help information service providers access and combine unique configurations of information to meet every conceivable information task and need, whether it is making plans and monitoring progress towards goals, making decisions, organising and coordinating, or red tape and admin.

Information logistics is the other side of the coin to Big Data. Big Data aggregates large amounts of data to identify patterns and trends. ILP's - and the information services they enable - focus on unique configurations of data. A key part of their ‘value add’ is the 99.99% of irrelevant or unhelpful data they discard or ignore.

Information logistics is what comes after Web 2.0. While new business models like Google and Facebook have unleashed rich, new data sources and flows and brought big benefits, they don't ensure the quality or accuracy of the data they make available. They also don't control who gains access to it, and they don't protect peoples' rights enough to build and sustain trust.

By tackling these ‘hard’ problems of data quality, trust, identity, rights, permissions and value exchange ILPs remove the barriers which are blocking the full wealth-creating potential of the information age.

A unique feature of information logistics is that, for many purposes and applications, it requires the input of personal data and the involvement of the individual. By according individuals the same rights, tools and supporting infrastructure as organisations it helps unleash a previously untapped resource - the individual as a positive contributor to the data ecosystem (not just a passive ‘target’) and as a source of valuable new information in its own right, especially VPI (Volunteered Personal Information).¹

The race to seize the ILP opportunity is already under way with major players such as SWIFT, the international payments network, and BT announcing their own initiatives. Expect more players to pile in soon. A new piece of wealth creation infrastructure is now being built.

“ Information logistics represents a game changing economic opportunity as big - perhaps even bigger - than that opened up by the invention of the mass production assembly line in the early 20th century.”

1. See Ctrl-Shift's report The New Personal Data Landscape <http://ctrl-shift.co.uk/shop/product/59>

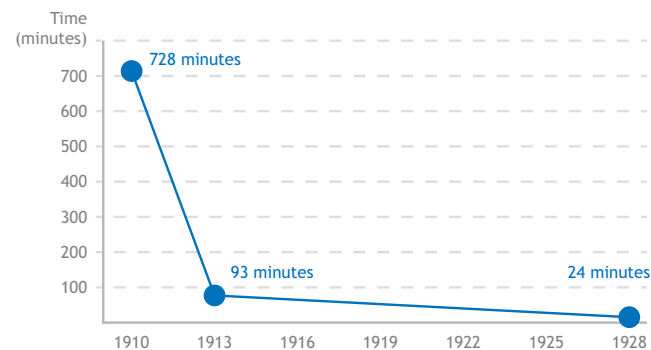
A Game Changing Opportunity

Information logistics is a game changing economic and business opportunity that's as big - perhaps even bigger - than that created by the mass production assembly line 100 years ago.

The internal combustion engine was around for decades before Henry Ford came along with his assembly line. Before then, the motor car was an expensive irrelevance. Within the space of a few years Ford reduced the cost of making cars by over 90%, not only creating a new mass market but unleashing a new wave of wealth creation. (see Figure: Ford productivity breakthrough)

Ford's productivity breakthrough

Time to make a car: from 728 to 24 minutes in seven years



The secrets of the mass production assembly line were soon applied to every physical need innovators could apply their minds to: washing machines, vacuum cleaners, kettles and toasters, TVs and radios, shaving machines, lawn mowers, hair dryers, food mixers. The list is endless.

Each one of these products is a unique configuration of specialised components. Ford's world-changing trick was to find a way of assembling them and putting them together to make high quality products at very low cost.

Information logistics platforms (ILPs) do for information 'products' what Henry Ford's production lines did for physical products. They enable the fast, efficient, safe assembly of unique configurations of data and information, from a wide range of information sources to fuel high quality information apps and services at very low cost.²

Just as virtually every conceivable physical need has been addressed by a physical product, so every conceivable informational need will soon be met by a high quality, low cost information product. Whatever information task we are trying to do - make plans and monitor progress towards goals, make and implement decisions, organise and orchestrate activities, keep records and manage red tape - we'll soon be able to say 'there's an app for that!'

In the industrial age, factories became platforms for productivity and innovation. ILPs are the information equivalent: platforms for productivity and innovation ... and a huge business opportunity in their own right.

The benefits of information logistics are threefold.

- **A breakthrough in information productivity.**
It slashes the costs of gathering, accessing, combining and using information.
- **A platform for innovation.**
It enables the creation of a cornucopia of new trustworthy and secure apps and information services.
- **Physical as well as digital efficiencies.**
It feeds back into the physical world. Much of the waste we now see in physical processes (the wrong resources in the wrong place at the wrong time) is caused by poor information processes (not being able to get the right information to the right people at the right time).

“ Information Logistics Platforms do for information what Henry Ford's assembly line did for things: slash the time and cost it takes to assemble unique collections of components into high quality, useful products. ”

². See Ctrl-Shift's report on Personal Information Management Services.
<http://ctrl-shift.co.uk/shop/product/58>

The new data sharing relationship with customers

Information Logistics Platforms help people and businesses get exactly the right information to and from the right people in the right format at the right place/time. They do this by removing the barriers to quality, cost, user efficiency, security, rights and permissions and trust that are currently blocking the full potential of the information age.

The end product of the supermarket is a shopping basket: a unique combination of products chosen to fit the shopper's particular need. Supermarkets enable the assembly of millions of such shopping baskets at very low cost. ILPs enable the efficient assembly of unique configurations of permissioned data needed to drive information apps and services.

To do its job, the supermarket has to do many things.

QUALITY: Shoppers can be confident that any product they pick off the supermarket's shelves will be made of good ingredients and do what it says on the tin. Products that fail to meet certain quality standards are 'delisted' - excluded.

Supermarkets don't tell their suppliers what ingredients to use, or how to make their products. But they still provide a high level of quality assurance to users of their 'platform'. ILPs do the same with information.

COST: Supermarkets are, above all, logistics businesses. They use standardised, disciplined processes and infrastructure to get products from factories to stores and homes fast and efficiently. ILPs do the same for information sharing between providers and users.

Supermarket

- Identify and source products
- Create criteria for listing (quality, relevance to customer needs, value)
- Negotiate terms
- Arrange delivery
- Display inventory for easy access
- Facilitate payment
- Assemble and deliver final basket

Information Logistics Platform

SIMILARITIES

- Identify and locate data assets
- Create and enforce quality thresholds for data suppliers
- Facilitate negotiation of rights, terms by data providers and data users
- Ensure common standards for data sharing
- Provide 'map' of available data assets
- Facilitate payment
- Facilitate assembly, delivery of final 'basket'

DIFFERENCES

- Buys and re-sells products
- Acts as a central 'gatekeeper'

- Facilitates direct exchanges between parties
- Facilitates a peer to peer network
- Two way identity assurance crucial
- Role as operator of a trust framework

PRICE: Every product on the shelf has a price. Shoppers can choose to buy or not to buy - but the 'rules of the game' are clear to all concerned. ILPs remove doubt and uncertainty over rights, permissions and prices for access to information, thereby facilitating value exchanges between information producers and information users.

USER EFFICIENCY: Supermarkets make it easy for millions of shoppers to find and assemble the products they want into their own unique shopping baskets. ILPs do the same for information services, helping them find and assemble exactly the right configurations of data easily, quickly and cheaply.

Online supermarkets take it a step further. Instead of forcing shoppers to sift and choose between many alternative products, they let them create a shopping list - a unique specification - which is then delivered directly to them. This is how ILPs provide a platform for innovative information services and apps.

As the Figure shows the parallel between supermarkets and ILPs is not perfect. Supermarkets act as gatekeepers to customers/suppliers whereas ILPs create networks of peer-to-peer information sharing for example. But the underlying function of facilitating a value exchange is the same.

Why Information Logistics is important

The Internet is a wonderful thing. New business models like Google and Facebook have unleashed rich new data sources and flows and brought huge benefits. But many key information management challenges remain unmet. As a result the full potential of the information age - of information as a powerful, easy-to-use tool in the hands of the user - is yet to be realised.

Getting the most value from information should be simple, quick and easy. But right now, sharing, accessing and using data is fraught with risk, cost and complexity.

- The more data there is out there, the harder it becomes to find exactly what we want.
- When we share data, we can never be sure who's going to get hold of it or misuse it.
- When we receive data, we can never be sure it's true, up-to-date or accurate.
- When we access data we may not be sure whether we have the rights or permissions to use it.

As a result, often, we either fail to share data or we have to spend lots of extra time checking and verifying it, and the cost, time and effort of assembling the right bits of information for each particular task remain high. Even though some parts of the process - like search - are highly automated, other parts are still hand-cranked. Like the craft-produced motor car this is putting a massive break on our wealth creating potential.



The Figure above shows some of the key activities ILPs undertake or enable to help lift the barriers to efficient, wealth creating data sharing and use. They help people and businesses:

- **‘Get exactly the right information’**

For the information to be ‘right’ it must be useable: up-to-date, accurate, with rights and permissions attached. It means discarding or ignoring the 99.99% of information that’s not relevant or useful right now. In this sense of narrowing down to particulars, information logistics is the opposite of ‘Big Data’.

- **‘to and from’**

Every party on an ILP is, potentially, both a provider/seller of data and a user/buyer. This requires a) mechanisms and processes for safe, secure data exchange, and b) the negotiation of information sharing relationships.

- **‘the right people’**

Information logistics needs two way identity assurance. Information providers need to know who wants to access and use their information; and information users need to know the provenance of where they are sourcing information from. Without this two way identity assurance the system will founder due to lack of trust.

- **‘in the right format’**

ILPs need to operate at Internet speed and scale with users finding, accessing and combining data sets with as little manual intervention as possible. This requires interoperability and data sharing standards.

- **‘at the right place/time’**

If data is at the wrong place/device or time the opportunity to use it may be lost, or else extra costs are incurred making it useable. ILPs ease these burdens.

Information logistics is a hard problem. But every problem is a business opportunity in the making, as ILPs are now realising.

A new market emerges

A scramble for ILP market leadership has already begun. Like many different climbers climbing the same mountain from different starting points many different competitors are converging on the same market opportunity. Each of these players has their own with unique strengths, weaknesses and specialisms.

SWIFT DIGITAL ASSET GRID

The Digital Asset Grid, announced in October 2012, is being developed by SWIFT Innotribe's Innovation incubation unit. The Grid is designed to position banks as a platform in the new world of digital commerce by providing the infrastructure for safe, secure information sharing in parallel to SWIFT's existing infrastructure for safe, secure financial flows.

The Digital Asset Grid builds on SWIFT's existing capabilities - governance, identity, security, operational excellence - to provide banks and other parties on the grid the ability to:

- locate and access data assets
- verify the identities of parties providing and accessing data
- create certainty about rights and permissions of data use, including financial and other terms
- a trust framework to create agreed rules for data sharing between all parties on the Grid.

The Digital Asset Grid is designed to enable the full range of peer-to-peer information sharing including B2B, B2C and C2B. For example, one of its partners is the Respect Network Corporation, a specialist service provider focused on enabling permissioned, trust-based sharing of personal data between individuals and each other and organisations.

THE PERSONAL DATA ECOSYSTEM³

Trusted sharing of personal data enables the delivery of Personal Information Management Services (PIMS). Here are some examples of the types of data involved.

- Proofs of identity
- Certificates, contracts, authorisations
- Verified attributes (qualifications, entitlements)
- Transaction/behavioural data
- Analytics: patterns, trends, variances
- 'What ifs?', options and scenarios
- Goals, intentions
- Priorities, preferences
- Constraints and limitations
- Product and price reviews/scores
- Reputation scores
- Questions and answers

This above list highlights the potential complexity of the commercial ecosystems ILPs could enable. It covers many different types of data, provided by different data providers - some of them highly specialised. No single party is able to provide all the data that's needed to provide a full information service - different bits of data from different sources need to be combined. Some of the data is intimate and private, others public and objective - requiring different data sharing rules. Data value depends much on the context in which it is used.

BRITISH TELECOM

In October 2012 BT launched a new cloud service designed to help packaged goods, manufacturing, logistics, pharmaceutical and retail companies manage their global supply chains better.

As part of BT Trace the goal of the service is to "cost effectively and securely collect, store, share and interpret high volume event data about goods and assets moving along an extended global supply chain. The new service integrates the complex information from the various resource planning and IT systems used by global companies - and by their suppliers - to provide a single view of the whole supply chain through a customised web portal."

The service delivers much greater data visibility and sharing across corporate boundaries, underlining one of the key benefits of ILPs: better information processes enable better physical processes.

3. See Privacy by Design and the Emerging Personal Data Ecosystem
By Ann Cavoukian, Information & Privacy Commissioner, Ontario, Canada
<http://www.ctrl-shift.co.uk/research/product/70>

The pace of change

Key questions for companies considering entering this market, or wanting to take advantage of ILP services as they emerge, are - How far, how fast? In what directions? We expect an explosion of new initiatives in this area over the next two to three years. The market will reach critical mass soon after.

THE DIRECTION OF TRAVEL

There are many precursors to ILPs. Corporate Enterprise Resource Planning systems aim to facilitate information sharing within organisations. Airline ticketing systems like Amadeus, Travelport (formerly Galileo) and Sabre started out as proprietary, internally focused airline IT systems but are now run by independent companies connecting many airlines, travel agents and travellers and fulfilling many functions including ticketing, availability displays, and inventory management. There are multiple systems for sharing information between supply chain partners (EDI, Edifact etc).

ILPs take these forerunners some key steps further. They are:

- **Open**

Some information sharing platforms such as airline ticketing systems are already well established. The difference between them and emerging ILP platforms is that existing platforms are 'closed' - designed to be used by a pre-specified set of known parties - while ILPs help parties on the platform to reach out and discover new potential sources of data and to build new information sharing relationships.

- **Platforms for innovation**

Existing information IT infrastructure is mostly focused on streamlining pre-existing information tasks. While ILPs do this, one of their main roles is to enable the innovation of new apps and information services that become possible from new combinations of data.

- **Ecosystem enablers**

Many existing information sharing platforms are siloed, operating only within carefully defined corporate boundaries. The whole point of an ILP is to enable information sharing across these boundaries.

- **Individuals as equal players**

A key characteristic of full ILPs is they give individuals the same status as organisations: both are information providers and users. Both are needed if the ecosystem is to flourish (see page 8).

PACE OF CHANGE

With some ILP providers already testing early versions we expect a range of new entrants to join the market over the next 12 to 18 months.⁴ Meanwhile existing first movers will work hard to consolidate their first mover advantages and gain critical mass. A wide range of fully fledged ILPs could be up and running by late 2013-early 2014.

ILPs will differentiate themselves early. Some will attempt to be multipurpose while others focus on specialist areas such as retail logistics or specific data categories such as personal data. Some will be national or regional, others will be global. Companies will share data via a range of different ILPs which, in turn, will seek increasing interoperability.

The more established ILPs become, the easier it will become for providers of information services and apps to access the data they need at low cost. Just as the introduction of national electricity grids ('safe, reliable energy, ready to be applied, at my finger tips') triggered an explosion of innovation and economic growth, so will the introduction of global data grids ('safe, reliable information, ready to be applied, at my finger tips').

⁴ See Timeline of the Shifting Personal Data Landscape
<http://ctrl-shift.co.uk/shop/product/67>

The power of personal

In theory, ILPs could flourish solely in business to business contexts. Some will. But the biggest value explosion will happen when individuals join the party; when ILPs enable B2C and C2B information sharing as well.

In a growing range of industries - health, telephony, financial services, online services - accessing and using information about the individual is a sine qua non of service delivery and/or the business model itself. But treating people as the 'objects' of 'data capture' and the 'targets' of information driven activities is counterproductive and highly inefficient while undermining trust.

The alternative approach is to recognise the positive potential of empowering individuals to assert more control over the sharing of their data (who with, for what purposes). This builds trust and releases the potential of the most powerful economic actor of all: 'the consumer' and 'the citizen' - the individual.

For any service that uses personal data including the individual as an active participant is the difference in stability and value of a unicycle and bicycle. ILPs make it easy to 'add the second wheel'. They do this by according the same data management rights, tools, supporting infrastructure and incentives as organisations thereby helping them join value exchanges around their data.

With ILPs this generates a two fold opportunity.

- **A new industry of Personal information Management Services (PIMS)**

We referred to PIMS earlier: all the information services and apps that can be developed to help individuals tackle life tasks from the most trivial and mundane to life changing and important. For these service and apps to work, they need to be orchestrated around permission-based information about the individuals concerned: their circumstances, constraints, priorities and preferences, needs and wants, etc.

By enabling safe, secure permission-driven information sharing, ILPs are a springboard for the rapid growth of this emerging industry.

- **Unleashing a new asset class**

By involving individuals in a trusted environment where they retain control over their data, ILPs help create the conditions for the release of Volunteered Personal Information (VPI).⁵ Because this is information 'from the horses mouth' - the fountainhead of economic demand - it is a hugely valuable economic asset.

“ Information Logistics Platforms finally unleash the true potential of personal data by providing individuals with the same data management rights, tools, supporting and incentives as organisations. ”

5. See Ctrl-Shift's research into the market for Volunteered Personal Information <http://ctrl-shift.co.uk/shop/product/37>

Winners and losers

Every big ecosystem change ushers in its own winners and losers. The new ILP-enabled information sharing landscape is no different. It re-organises value creation around two poles: information service providers who excel at integrating information from multiple sources to add value in new ways, and providers of pivotally important data components (such as VPI).

THE POWER OF INTEGRATION

Economic power tends to flow to one of two different sources: those who control a pivotal economic asset such as oil or money, and integrators who bring many different things together to generate new value.

In the 20th century pivotal asset providers such as oil producers grew rich. So did integrators like car manufacturers, who accomplished the awe-inspiring task of bringing together thousands of different components from thousands of different suppliers to produce something that everybody wanted: the speed, comfort and convenience of the motor car.

Retailers grew powerful for the same reason. They brought together tens of thousands of different 'components' - the products they placed on their shelves - sourced from thousands of different suppliers, to produce something everybody wanted: an easy, convenient, economical way to source the necessities of daily life.

ILPs provide the new infrastructure, like oil pipelines, petrol stations and electricity grids, for a new economic superpower to emerge: the provider of information services that bring together multiple different sources of information components, from multiple different suppliers, to provide something everybody wants: easier, safer, better ways to make better decisions and to implement them better. The winners over the next three to five years will be those who can see, and seize, this opportunity.

SEIZING THE OPPORTUNITY

The two main ways to seize the information logistics opportunity are:

- to become a platform provider
- to use new information-sharing platforms to add new value.

Platform provision is an infrastructure play requiring significant investment of resources, technological know how, strong position at the heart of new or old ecosystems, and the ability to 'bang heads together' to create and enforce trust frameworks.

Would-be information service providers need to focus on three ingredients of success:

- building trust with information providers and users
- identifying value opportunities - which information services add the most value? What's the business model?
- process and mechanisms: how to make information sharing as safe, easy and efficient as possible.

For consumer facing companies, this requires a new information sharing relationship with customers. Potential factors to consider are:

- **Data assets:** take a fresh look at existing data assets. How could they add value if repurposed - perhaps in combination with other pieces of data - as a tool in the hands of the customer?
- **Sharing:** evolve information sharing strategies that go both ways.
- **Relationships:** evolve the data sharing relationship around TACT: Transparency, Access, Control and Transfer. Letting customers exert control over what data is shared, why, is the best way to build trust and ensure information actually flows.

“ The two main ways to seize the information logistics opportunity are:

- *to become a platform provider*
- *to use new information-sharing platforms to add new value.”*

Conclusion

Information logistics is a key challenge and opportunity of our age.

ILPs offer us the opportunity to do with information what we did with things: achieve a productivity breakthrough and create a platform for innovation and growth.

While the opportunity is huge, so is the challenge. Cracking all the problems with trust, security, rights and permissions, terms and conditions, interoperability and efficiency will take time.

These challenges are generic: they apply to all data sharing whether B2B, B2C or C2B. While some ILPs will offer pure B2B services, the industry is also a potentially pivotal enabling infrastructure for the emerging personal data ecosystem.

This multiplies the information logistics opportunity, taking it beyond cost and risk reduction to the innovation of new PIMS industries.

Market momentum is already building. ILPs are likely to transform the information landscape over the next two to four years.

Companies can participate by becoming ILPs themselves or by using them as platform to share/exchange data and to develop information services and apps for their customers.

The time to start preparing for and planning for these changes is now.

About Ctrl-Shift

Ctrl-Shift is a market analyst and consulting business that helps organisations understand the implications and embrace the opportunities arising from the changing personal data landscape. We help clients understand market trends, identify and size market opportunities, lead innovation and change programmes.

To access our research and resources please go to www.ctrl-shift.co.uk/research



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What is the control shift?

The control shift is a series of interconnected shifts in the relationship between individuals and organisations. Different aspects of this control shift include:

FROM the organisation as manager of customer data **TO** individuals managing their own data.

FROM information as a tool in the hands of the organisation **TO** information as a tool in the hands of the individual.

FROM individuals as consumers of information/content **TO** individuals as producers of information about themselves (the rise of VPI or Volunteered Personal Information).

FROM companies managing their relationships with customers (CRM) **TO** customers managing their relationships with suppliers (VRM or Vendor Relationship Management).

FROM brands sending messages to target audiences **TO** individuals signalling intentions to buy to markets/suppliers.

FROM data about individuals being dispersed across dozens of different organisational silos **TO** individuals acting as the natural point of integration of information about their own lives.

FROM privacy as a policy laid down by the organisation **TO** privacy as a personal setting, specified by the individual.

FROM metrics focusing on the organisation's KPIs **TO** metrics focusing on the individual's KPIs.