heads up

up

the
group
of
authors

Global Data Movement Ally

Let's move your data!

We kindly present

Better content

Our vision is a world full of shared knowledge and collaboration. A world in which information is freely available, accessible and understandable for everyone.

We want people to see the full picture without being forced to dive deeply. This is why we create knowledge that touches the mind as well as the eye – because only in combination do we grasp the whole.

The Group of Authors
knowledge workers with passion for enlightenment
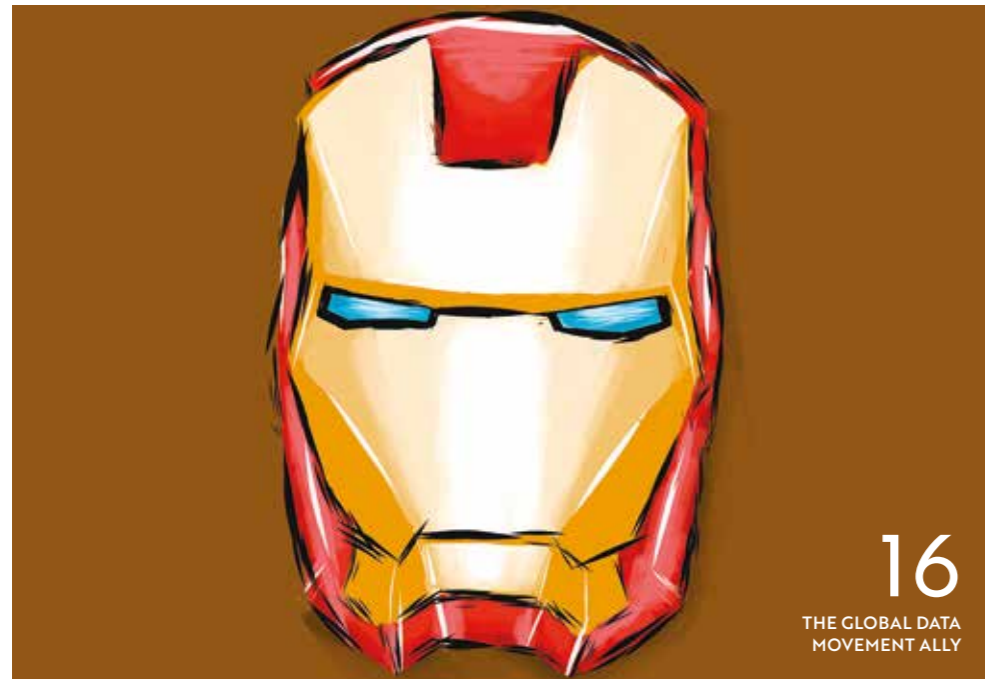
The Global Data Movement Ally has diversified knowhow and operative capabilities so that all tasks can be supported with regard to data exchanges between companies as well as global standards at any time.

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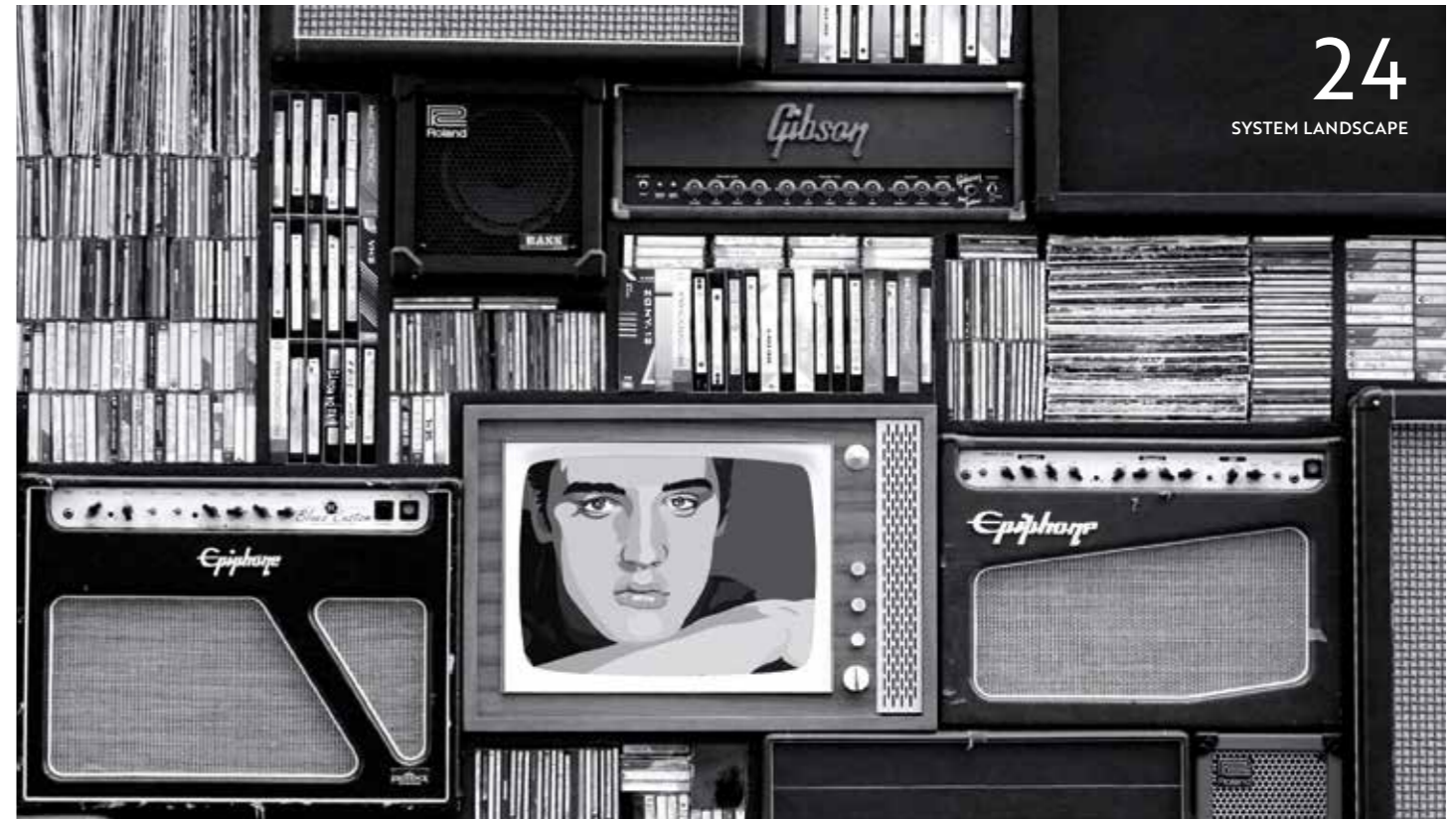
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SYSTEM LANDSCAPE

The goal must be to optimally serve every output channel – such as the global data pools – in accordance with its rules and language.

Consumers have become accustomed to seeing American peanut butter and French marmalade on German supermarket shelves and to having the choice of full fat, semi-skimmed, buttermilk and oat milk. The available range of gluten-free products alone has increased dramatically over the course of just a few years. Emerging collective consumer requirements are leading to a gold rush environment in the market, which is rapidly responding with new offers. On the other hand, the industry and retail have a major influence on consumer behaviour, which has a particularly dynamic effect on this triangular relationship. A noticeably rapid and efficient exchange of information is required when such tensions and forces are involved.
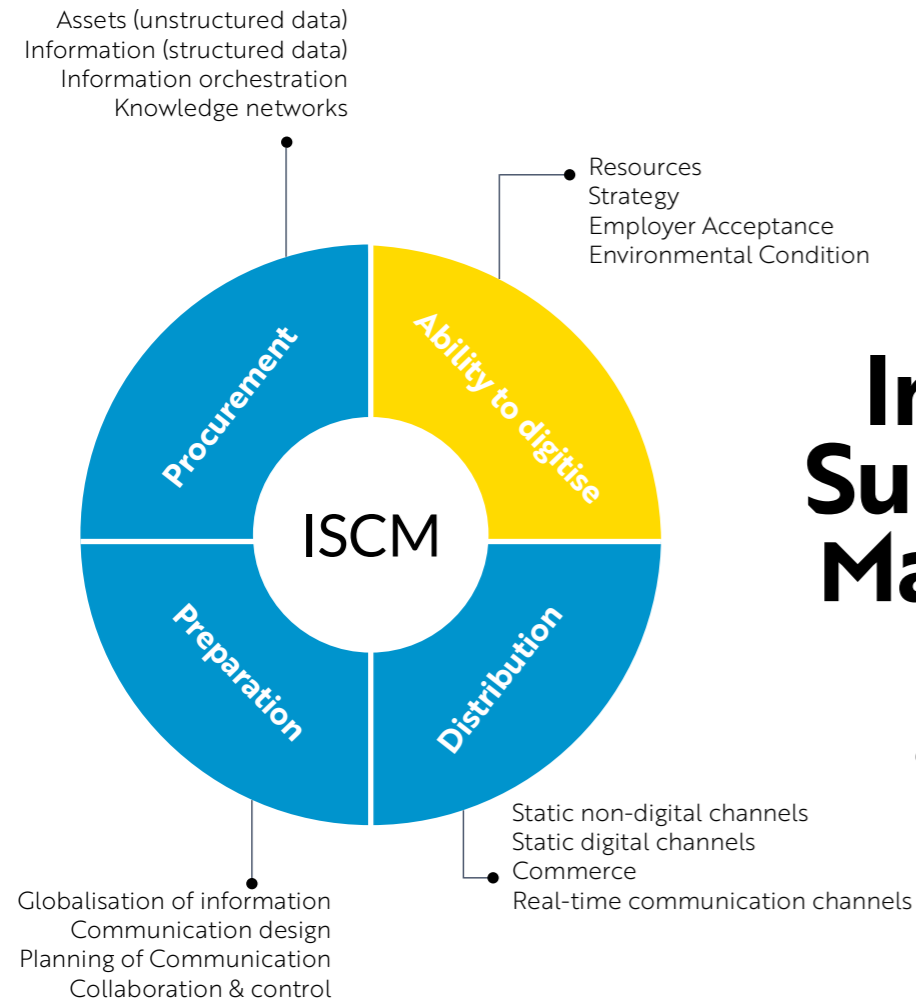
Ready for movement?

This is where the Global Data Synchronisation Network (GDSN) comes into play; a global network of master data pools through which product data is exchanged between retail and industry in real time. The GDSN was initiated by GS1, an association of organisations that develops global standards. It's not just the retail industry that requires precise product information to plan how to display product ranges on the shelves – logistics also require accurate and complete product data as a prerequisite for efficient route planning.

In addition to the master data pools where the product data is published, the GDSN also comprises the Global Registry, a registry of every published item with precise attribution to the respective master data pool. The data recipient, data supplier and master data pools interact through GDSN messages. There is a series of different message types, each of which contains certain types of information. Data requests are also transmitted via GDSN messages, as is the provision of product data from the data pool to the retailer.

These movement patterns that organise communication in the global network are based on jointly developed standards. On the one hand, these standards fulfil product master data requirements of retail and logistics, while fulfilling the quality standards prescribed by the global network on the other. The ensuing common culture consists of linguistic and visual characteristics that allow products to be identified with absolute certainty. These include the Global Trade Item Number (GTIN), the article number assigned by GS1, as well as the barcode, for example. But the movement patterns themselves are also clearly defined.

In order to stay abreast of the high degree of relevance of this global interaction, Global Data Movement (GDM) was created as a concept to establish a collective supply chain that is to be considered a development of the in-house information supply chain. While the majority of companies are still busy optimising their own information supply chains, the pressure to participate in the global network presents them with added challenges. The desire to master these challenges alone at best results in expensive mistakes when deciding on suitable data storage systems – the technological foundation for establishing the data model that must be translated into the standard. It is for this reason and many more that a strong partner is required, one with expertise that covers every relevant area: The Global Data Movement Ally.

Global Data Movement

Assets (unstructured data)
Information (structured data)
Information orchestration
Knowledge networks

Resources
Strategy
Employer Acceptance
Environmental Condition

Procurement

Ability to digitise

ISCM

Preparation

Distribution

Information Supply Chain Management

Information Supply Chain Management describes the digital value chain from the procurement of data to preparation and distribution. Digitalisation projects can be derived from a company's ISCM.

Static non-digital channels
Static digital channels
Commerce
Real-time communication channels

Globalisation of information
Communication design
Planning of Communication
Collaboration & control

Processing data involves making information available on a global scale, during which multilingualism, local rules and cultural factors play a part. Communication design is also embedded in this. This is where content templates are created which can be filled with information. The areas of collaboration and control are crucial to defining processes at the data processing stage, as this is where workflow management and communication are planned. Data distribution describes various types of channels, most of which are now digital and whose reaction times to customer contact range from very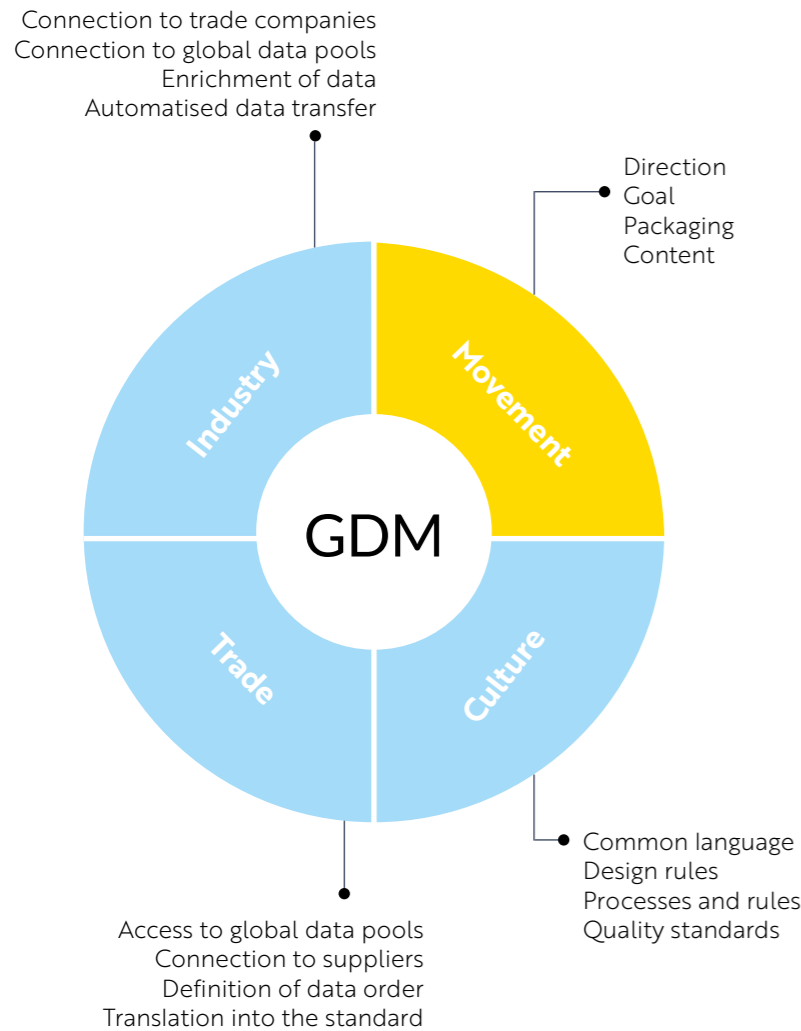 low to real time. The company-specific system land- scape is located on the technology side of things, the gaps in which result in digitalisation projects, and therefore new system requirements. The ability to digitalise furthermore describes the company's crucial requirements to be able to successfully implement a digitalisation project. This includes the resources available as well as a lived digital strategy in addition to employees' acceptance of digital changes. Environmental conditions that cannot be influenced by the company itself are of course also a key aspect of the viability of digitalisation projects.

Organisational incorporation as a significant success factor

Companies have to be aware of the overall ISCM challenge. This also includes the task of securing the smooth interaction of the numerous individual systems. The ability to connect is accordingly an essential factor for success that needs to be guaranteed with the help of ISCM. Connecting the individual software markets to one functioning ISCM total system landscape calls for experience mixed with technical expertise during the introduction and connection of the required software solutions. It also involves numerous people spread throughout the company, who are expected to work together in an effective manner.

Alongside ensuring the quality, up-to-dateness, security, and data protection, the management of the Information Supply Chain also guarantees the consistent digital and central storage of data in suitable systems. Ensuring the smooth exchange of data between all systems involved and an imperatively high process quality are also among the main tasks of Information Supply Chain Management. As a result, accepted forms of cooperation and solutions for controlling respective processes are required. Major changes always go hand in hand with more comprehensive ISCM projects, which is why we speak of digital transformation. The internal effort associated with the topics of digitalisation is often underestimated by companies. Awareness for long-term projects equipped with funds and resources in specialist departments is often insufficient. Digitalisation in the sense of ISCM has to be positioned at C-level due to its holistic view and financial and resource-devouring dimension. Correlative new positions such as Chief Digital Officer are only just being created. It is vital that this settlement takes place in a cross-departmental manner while being integrated and coordinated. The 2017 EDEN study (The Group of Analysts 09/2017) however has shown that this recommended procedure is only being carried out by approximately a quarter of all companies. There is significant demand for action for the remaining three quarters. Furthermore, the lack of connected coordination partially leads to considerable time expenditure for the companies. Which is why a permanent area of responsibility has to be introduced for the management of the Information Supply Chain in the company during the project introduction phase of ISCM technologies. A responsible team therefore has to be set up.

As the digital mirror image of the classic supply chain in logistics, the information supply chain describes a chain of connected software solutions while comprising all relevant data on products and services. The information supply chain therefore represents the entire digital supply chain of this data, from its acquisition and collection to its preparation, processing and distribution. Information Supply Chain Management (ISCM) describes the strategic configuration of this digital supply chain and therefore the choice of the right systems, suppliers and partner firms that play an important role in the implementation of the information supply chain, and therefore in the implementation of digitalisation projects.

Data acquisition involves assets such as documents, objects or media, as well as information that presents a structure through the attributes and values that can be assigned to it. The acquisition level also defines rules for this information, and developed systems even contain knowledge networks that describe the intelligent interaction of these rules, and therefore the company's IP.

Connection to trade companies
Connection to global data pools
Enrichment of data
Automatised data transfer

Direction
Goal
Packaging
Content

Industry

Movement

GDM

Trade

Culture

Common language
Design rules
Processes and rules
Quality standards

Access to global data pools
Connection to suppliers
Definition of data order
Translation into the standard

Global Data Movement

Global Data Movement is the logical development of the Information Supply Chain as the internal data flows. It is the basis for the collective value chain in the industry trade network and is accompanied by the democratisation of data.

A highly efficient common supply chain that is transparent for industry and retail is the foundation for our current product range, and therefore a global market worth billions. A common culture is inherent to global cooperation of this scale – a culture with a common language and design, but also with collective rules, traditions and acceptance rituals. In the relationship between industry and retail, a common culture first and foremost means data compliance. Product and supplier information must follow a certain standard in order to be understood by all

market participants in equal measure. At the same time, products must be clearly identifiable and traceable in order to safeguard the transparency of the supply chain. Common design guidelines are required to enable visual product identification. These rules determine who belongs to the common culture and who doesn't – they define the quality standard that must be met in order to take part in the global market. Furthermore, all parties must agree on common processes that ensure the consistent exchange of data. Global master data pools

and central registries to coordinate the pools and data requests constitute the framework for the global democratisation of product information.

Industry and retail companies populate these master data pools on the one hand and utilise them as a source of information on the other. Participating in the global supply chain presents every company with major challenges. While industry and retail often struggle to connect their enterprise resource planning systems with one another, both parties benefit from having access to the global master data pools, in which case they must adapt to the abovementioned cultural standards. One of the challenges often results from the fact that the original industry product data isn't always comprehensive enough to meet the quality standards of the master data pools. This means they must first be enriched and optimised to meet the given attribute set. Next, the prepared data must be delivered to the pools, ideally in an automated manner. In addition to access to the master data pool, retail companies require a user-friendly connection portal for supplier onboarding. On the one hand, the product data must meet the global standard, while on the other hand, retail companies have additional product information requirements. After all, it must also be transmitted to a multitude of additional channels such as e-commerce and social media and be prepared accordingly. Furthermore, determining an in-house data order with rules specific to the country and industry is also recommended. These highly individual attribute sets must be translated in order to be linked to the global master data pool in adherence to the standard, for instance through mapping.

As of yet, the global supply chain world still consists exclusively of the static elements of industry and retail that are part of a common culture. The element of movement is essential to breathe life into this world. It determines the direction of the data streams at every point and thereby defines where the data is coming from and where it is going. The description of the recipient plays an important role

in this, as does the manner in which this recipient would like to receive the data. There is a tremendous difference in the general conditions between data that is packaged in social media posts, presented in an online store or fed into a global master data pool. They all come from the same source – yet their targets are fundamentally different. The way in which the data is transferred, or the technology used to transfer it, must be determined and the data must ultimately arrive at its destination at the desired level of quality packaged in previously defined content. In doing so, companies retain constant control over their product communication, no matter through which channel.

The supply chains between and within industry and retail run parallel to the data streams surrounding the global data pool, for instance through ERP systems, product information or master data management systems, e-commerce and social media. At the same time, various legislatory regulations and technological borders restrict, interrupt or reroute data streams. This complex data movement system with all its obstacles and pitfalls is referred to as Global Data Movement. It is a confusing and highly intertwined construct and attempting to navigate it is one of the biggest challenges of our times for the market. Global Data Movement can be considered to be the logical development of the Information Supply Chain as a digital supply chain, or Local Data Movement, within a company. As analysts, we observe the fact that many companies still struggle with their own information supply chain. Companies should therefore not risk becoming part of Global Data Movement, and thereby participating in the global market, without the support of a specialist and well-positioned partner, the Global Data Movement Ally. Otherwise, they risk using a PIM system that can't keep up with the global pace. Global Data Movement is based on the fundamental idea of a global collective, of togetherness – partnership and transparency for the common cause.

Global trade requires a common data culture.

Bilateral data exchanges meet all requirements of industry and trade.
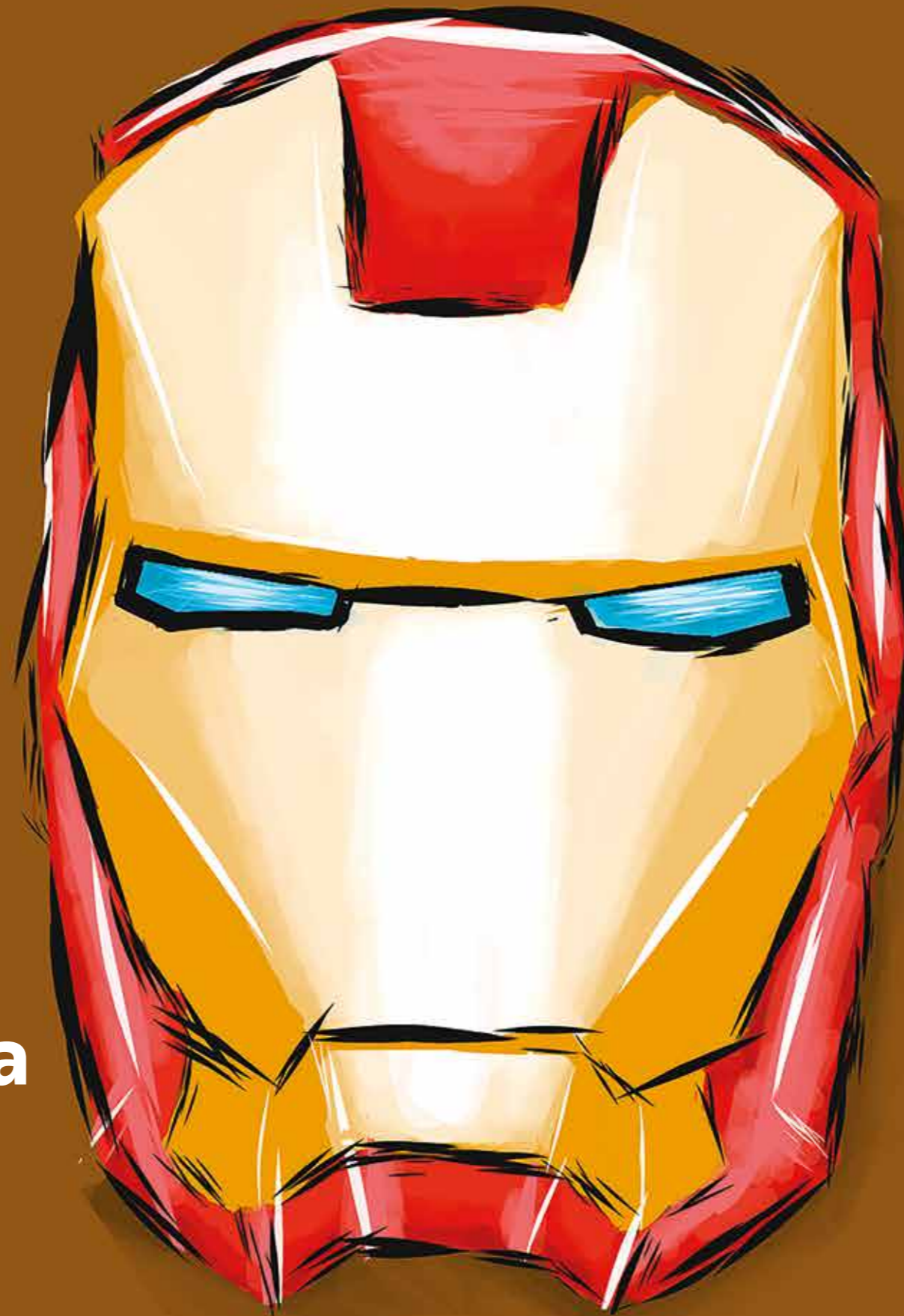
The Global Data Movement Ally

Participating in Global Standards

Setting data in motion in places where companies interact with other market participants – where it's not just about the in-house Information Supply Chain – is a challenge that presents companies with many unknown variables. This does not just apply to the interface between suppliers and retailers who must apply bilateral systems to exchange product data. It primarily applies to companies on both sides who want to participate in global standards while retaining control over their own channels and information streams.

These are the reasons why they need a partner specialised in the GDM market by their side – a Global Data Movement Ally. The multitude of tasks

and challenges require the GDM Ally to have a broad range of skills and implementation opportunities and to be able to set up a suitable team of experts that covers relevant issues depending on the scenario. Their operative tasks are not just restricted to consultancy – it is the combination of knowledge, integration and data modelling that sets them apart. This all-in-one solution makes them an essential mentor for companies who want to continue to control their data beyond their in-house Information Supply Chain.

The Data Model

One of the problems many companies face is the fact that they force the basic framework of their information world into templates that only vaguely meet their own requirements. They adapt to the opportunities of the system they have chosen. Yet every company has its own combination of suppliers, customers, products, services, employees, functions, processes, values, priorities, strategies and objectives that sets them apart from every other company. Every company therefore has its own unique DNA that contains all of these factors. In recent years, many have become aware of the fact that they will reach the limits of their plans with their systems for this very reason. They begin to understand that their systems aren't quite right and are unable to meet their strategies for the future. The much-praised digital transformation ultimately wants nothing more than to overcome this state of limitation. Many fall into the trap of procuring promising technology only to realise that the new solution also isn't really a perfect fit.

What companies must understand is that they must make their own individual data model the utmost priority in everything that they do. They must develop a data model that models all of the factors that shape them as a company – without compromises. This is the only way to allow them to

continue to be independent and capable of acting in their Information Supply Chain in future. Only once this data model has been set up can they begin to search for systems that can actually model it. The GDM Ally plays a key role in all of this, as data modelling is part of their repertoire, as is a profound knowledge of the market which they use to find a suitable system for every corporate DNA.

While only a small number of companies have already completed this task, additional challenges emerge as the result of growing pressure to participate in global data standards. How should in-house and highly personalised data models additionally be compatible with a standard? What are the exact criteria and quality standards that they have to meet? The GDM Ally helps tailor the data model to the company precisely while taking into account the GDM's requirements, so that the data streams not only flow within the Information Supply Chain but also beyond it.

Common Cultural Understanding

The GDM Ally speaks the various languages of the global standards and knows the essential identifying features necessary for the products to become part of the common culture in line with the standard codes. The GDM Ally essentially acts as an interpreter who creates specific mappings for companies in order to translate the relevant attributes into the respective standards, supplementing them if needed. The challenging aspect of global standards is the fact that there are country-specific restrictions or expansions that require equal standardisation to be used globally by companies in every region. This endeavour is driven by GS1 under the term 'Global Data Model' and is implemented by the GDM Ally in companies who want to trade on an international level.

The quality ultimately decides whether the data fulfils the cultural understanding of all those involved.

It ensures that the data meets the agreed collective requirements as well as the needs of the respective data recipient in addition to the in-house, internal rules. In order to ensure that these strict and complex guidelines are adhered to, corresponding measurement and supervisory bodies are required to continuously monitor the level of quality, as are defined internal workflows on data management and optimisation. Because they are familiar with all the applicable rules of the GDM and therefore know the processing tasks that await the company, the GDM Ally ensures the respective alignment of in-house information streams from the very start so that the external connections ultimately work without issue.

Movement Profiles

Now the data is available in an adequate level of quality and in the right language, all it needs is to be transferred out and made available to the right recipients. The GDM Ally again supports companies with moving their data in the right direction and in the desired format. In doing so, they consider the various designated movement patterns that establish order in the GDM. Depending on the information requirements, there are various attribute sets that need to be moved in the GDM, and the quality rules also depend on the target and purpose of the data. This is why there is more complexity than companies initially assume on the process side, where data must be packaged for their onward movement according to their purpose. The GDM Ally is familiar with the purpose-built requirements

and movement specifications, so that companies can be certain that they have constant control over how certain information is transmitted in addition to its format.

At this stage, however, the company's in-house channels such as websites, online stores and social media should also be incorporated. The GDM Ally represents a holistic approach to data movement, as this is the only way to ensure that the company's DNA is protected in its public image and that processes which should always be considered as a whole aren't isolated.

Implications for the Information Supply Chain

Data Acquisition

Because the GDM Ally helps companies set their data in motion at the edges of their internal Information Supply Chain in order to initiate an interaction with the data streams of other companies, they start with data acquisition on the one hand and data distribution on the other. The acquisition of supplier data in retail companies must be carried out in two different ways, as not all companies of the relevant market participate in the GDSN. By connecting to master data pools, retail companies can submit targeted product information enquiries. If the data is available globally, the Global Registry identifies the respective data pool where it is stored to ultimately allow the requested data to be transferred to the recipient. If the requested data is not (yet) contained in the Global Registry, either the manufacturer needs to be connected to the GDSN or the data must be exchanged through bilateral avenues.

In each case, both the manufacturer and the retailer can count on the support of the GDM Ally. For a bilateral exchange of information, they develop an onboarding portal for supplier information that automates the data transfer upon assuring the quality, thus optimising on both sides. Various data formats used by the suppliers (Excel, BMEcat, XML, etc.) are converted into the data format used by the retailer before being transferred to the product information system. In doing so, new data set arrivals must be adapted to the specific data model of the retail company. This often also includes country- and industry-specific rules that are relevant to many products and stipulated in the retailer's data order.

Data Distribution

In some cases, the supplier data may not be available in the depth or quality required by both the retail companies and global standards. The GDM Ally helps suppliers enrich and optimise existing data models while ensuring an automated data transfer, whether this is to a data pool or the supplier portal of the retail company.

It is ultimately of no importance where the data is being moved to – the important thing is for the manufacturers to have constant and full control over the information that is supplied in addition to the depiction and combination in which it is delivered. This allows them to manage and control their product's brand presentation at all times for each channel. This includes links and product images in addition to marketing texts, product terms and descriptions. In order to be able to guarantee this for data transfers to a global data pool, the product data moves in specialist packages. Within the context of the GDSN, these are referred to as messages that are exchanged between data suppliers, data pools and data recipients in an XML format. These messages transport the product data itself as well as a series of additional information for monitoring, management and communication purposes. Some messages guide the recipient of the product data, for instance. It is possible to send manufacturer data to a certain retailer or to an entire target market. Conversely, retailers can request product data from an entire target market, from the range of a certain manufacturer or from a certain item. Additional messages can even be used to transmit comments from the data recipient to the supplier, for instance to notify them when the data quality does not meet the retailer's data order requirements.

"In the end, where the data is moved to does not play a role – it is important that manufacturers are always in full control of the information that is delivered, its presentation, and its combination."

System Landscape

A central data storage system is the core of every digital and strategic development within a company. Be it to optimise existing processes or to develop new, innovative business models, both are inconceivable without a decent database and structure. In doing so, systems must be more and more effective and be capable of modelling more and more relations. They must consider the company's history and its future in equal measure. As an integrator, the GDM Ally ensures that only suitable systems are considered in the selection process – systems that can simultaneously model the individual data model as well as

GDM. The global standards are essentially just one output channel among many. Channels such as the online store, market places and social media simultaneously want to be supplied with suitable information. To allow this to work in real time specifically to the channel, the data cannot lie in various data pots and instead must be uniquely available in one central location in a high-quality and correct manner. From this point on, distribution is fast, effective and secure – adapted to the respective medium with its language, symbols and cultural understanding.

Summary

The increasing interconnection between companies, products, services, content and people is leading to accelerating data movements that follow a growing number of different patterns. Real time has long since become the norm, while latencies are no longer acceptable. Global Data Movement is a relatively recent market that accelerates the electronic exchange of data through standardised movement patterns and rules while expanding it on a global scale. Industry and retail benefit from participating in this collective through increased efficiency and reach, yet they must overcome several obstacles to do so.

Most organisations are insufficiently concerned with their in-house Information Supply Chain, as they feel the limits of their digital opportunities in the implementation of their company and product strategy on a daily basis. The root of all evil often stems from the fact that they adapt their data model to existing systems based on past experiences rather than adapting it to their own requirements. As a result, their ability to act is inevitably restricted and they will be faced with increasing limitations in future.

A custom and sustainable data model not only provides clarity and efficiency to corporate structures and processes, it also provides full control over product communication and is therefore a crucial prerequisite to consciously managing a company's own brand. No matter whether the information needs to be supplied to social media channels, websites or a global master data pool – it must all originate from the same basis, be appropriately packaged for the recipient and demonstrate immaculate quality.

The development of an individual data model, the selection of a suitable data storage system capable of modelling the data model while additionally enabling participation in Global Data Movement and the alignment of in-house processes and data streams with increasingly complex product data distribution, requires a holistic approach. It also requires sufficient resources and profound knowledge of relevant manufacturers, data modelling and GDSN topics. As most companies do not possess these skills, the Global Data Movement Ally provides diverse expert teams for these tasks, thereby protecting companies against expensive mistakes that not only cost money but also a significant amount of time.

The topics in the context of digitalisation are changing **dynamically**.

Terms that accurately described the nature of a concept twenty years ago are today diluted at best.

The danger of using diluted terms lies in the potential for inaccuracy, which leaves enormous scope for misinterpretation. This in turn makes a deeper **common understanding** practically impossible.

For discussions about current topics, it is therefore necessary to find contemporary terms that **get to the heart of the matter.**

This is why The Group of Authors introduces the LookUps Library – a continuously growing directory of important terms that shape current discussions about different digital topics.

LookUps Library Global Data Movement

The LookUps Library with all actual terms from this white paper and all other knowledge documents including explanations are available for free at **www.tgoa.com.**

The LookUps that are used in this white paper are:

❶ GDM, Global Data Movement
❷ Global Registry
❸ GS1
❹ GDSN, Global Data Synchronization Network
❺ GTIN, Global Trade Item Number
❻ Global Data Model
❼ ISCM, Information Supply Chain Management
❽ LDM, Local Data Movement

"We move data."

Global Data Movement is a highly complex interaction between companies, systems, data streams, standards and requirements. Most manufacturers and retailers underestimate this, and we often see them opting for data storage systems that can't keep up with the global pace. We enter the picture to prevent wrong decisions such as these and to support companies not only with selecting the right software but also with implementation and adaptation as well as transferring any relevant data into global standards.

Björn Bayard is a dedicated entrepreneur, having founded his first software company in 1994, and he was one of the first PIM and MDM software vendors in 1997. Today, more than 8,000 companies use technology which he originally developed. He sold the company to PIRONET NDH AG in 2004 and subsequently assumed responsibility for the corporate strategy at SINFOS and later at SA2 Worldsync. His entrepreneurial spirit took hold of him once more in September 2011, and so he founded the Bayard Consulting Group.

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"Language connects."

Culture can only emerge where there is discussion. Discussion about common rules, ideas, ideals and values. The key vehicle of this discussion is a common language – this is essential. It doesn't matter whether this language is spoken, written, drawn or any other manner of language – the only thing that matters is a mutual understanding of the symbols used. But the thing that connects can also exclude those who are not (yet) able to interpret these symbols themselves. And so, the same applies to Global Data Movement: Learning a connecting language is the prerequisite to participating in the common culture.

Carmela Melone is the founder and CEO of The Group of Authors and the co-founder of The Group of Analysts. She has been working as an analyst in various technological areas for over seven years, during which she has authored multiple studies, white papers and specialist contributions on various aspects of digitalisation.

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"Join the Culture Club!"

Culture describes the total creative output of a certain community of people who want to share and make their inventive works accessible to one another. The initiators of global master data pools created a global data culture to closely intertwine industry and retail beyond country borders – a culture which we refer to as Global Data Movement, which is the prerequisite to companies across the globe being able to trade with one another effectively.

Temel Kahyaoglu works in various consultancy positions and has led The Group of Analysts as its founder and CEO since 2010. He invented the term 'Information Supply Chain Management' in 2007 and is the intellectual father of the Market Performance Wheels – the most highly respected analyst tool in the DACH region next to Gartner's Magic Quadrant and the Forrester Wave. He founded four analyst companies with his private equity firm The Grand Orchestra Audience with the aim of increasing transparency in the software market.

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