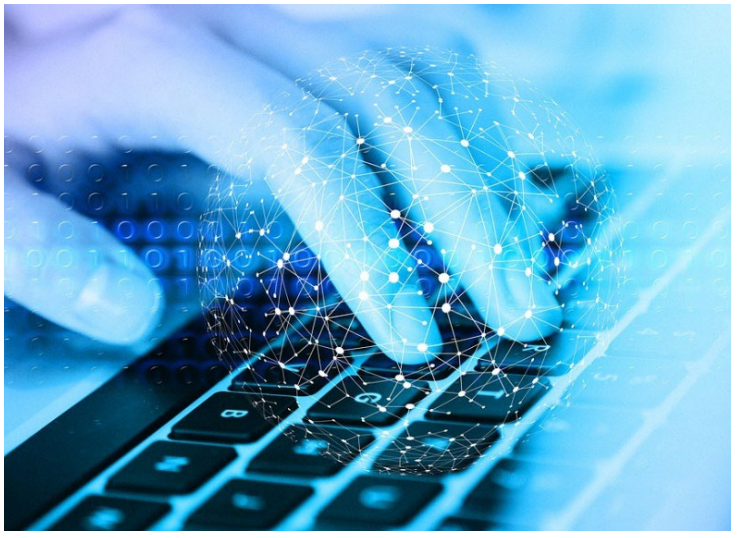
CLAIRFIELD INTERNATIONAL

March 2019 Technology Snapshot

The potential of blockchain and smart contracts in M&A

www.clairfield.com

INSIDE



THE GLOBAL M&A BUSINESS IS BOOMING BUT THE INTENSIVE PROCESS MAKES IT PARTICULARLY DIFFICULT FOR SME'S TO PROFIT FROM M&A

The M&A process is characterised by the fact that companies rely on lawyers, external M&A advisors, auditors, and tax consultants. This results in both, high costs and considerable time expenditure. The lengthy and cost-intensive process makes it particularly difficult for SME's to profit from M&A.

Blockchain and AI as technology can be used across the whole bandwidth of the M&A process, starting by identifying suitable targets, through all stages of the due diligence into post merger integration.

Even basic processes of M&A entails extensive overhead costs. As a result many players are discouraged from even starting, even if the outcome of a transaction could be generating value for all parties involved.

Technology solutions can reduce costs, simplify and accelerate the M&A process. If the initial cost barriers are removed, it follows that more companies could expand their activities through M&A. This could make it easier for SME's to enter the M&A market. For SME's a bad or incomplete deal can have fatal consequences. While large companies typically have sufficient management experience and the financial resources to recover, SME's sometimes lack resources.

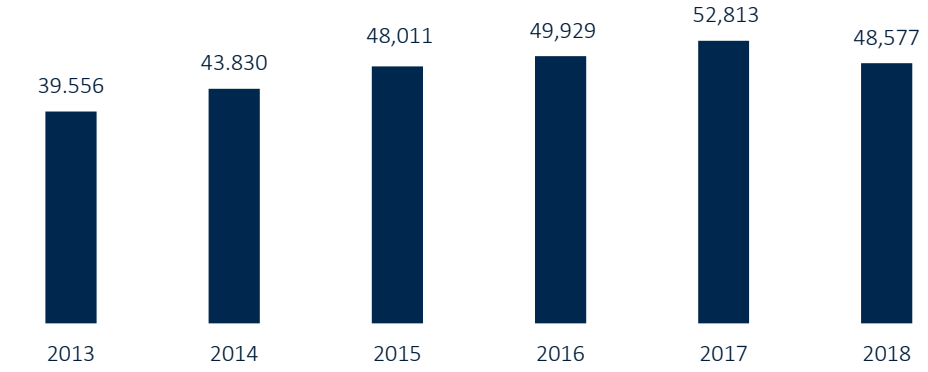
Clairfield International has expertise in more than 100 transactions per year in the the small-cap and mid-cap segment and can advise clients that are seeking to gain an advantage by creating and executing an expedient M&A strategy.

The global M&A outlook for 2019

In 2019, 79% of companies expect a further increase in the average number and volume of M&A transactions. The main growth drivers in 2019 are the continued low interest rate level and technological challenges.

Technology has caused a tidal wave of disruptions affecting all sectors and M&A is still a good strategy to stay one step ahead of competition. Companies with regular M&A activity can better adapt to changing conditions, add the required variation to their business models and therefore have an increased survival rate.

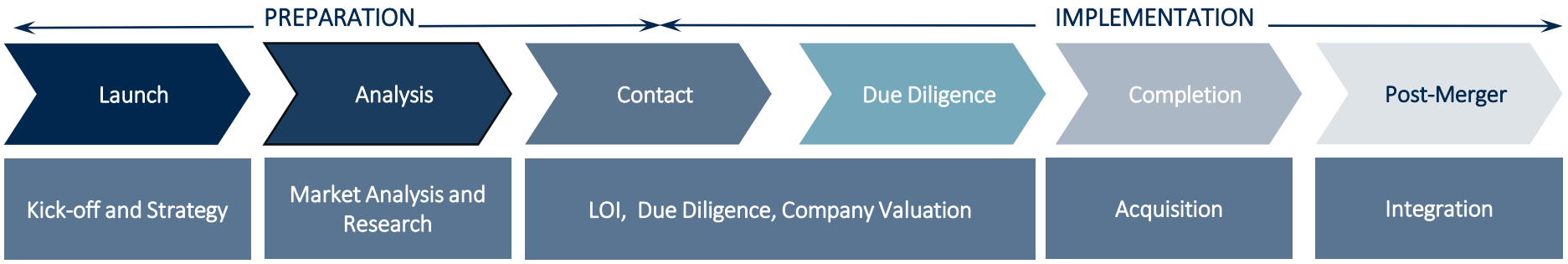
Number M&A deals worldwide from 2008 to 2018



IMAA;FM „Dealmaking: The outlook for global M&A in 2019"; FT– „Global M&A activity hits new high"; Chief Executive – „Why M&A Investors Are Moving To The Lower Middle Market"; Deloitte – The state of the deal

DIGITAL M&A TOOLS COULD BE THE ANSWER TO THE INCREASINGLY DEMANDED SPEED, TRANSPARENCY AND SECURITY IN M&A BUSINESS

The M&A process is divided into a preparation phase and an implementation phase. The preparation phase includes the definition of objectives and strategy as well as a well-founded market analysis and research to identify potential targets. During the implementation phase, potential deal partners are first approached and, if interested, a NDA is signed. This is followed by a due diligence to evaluate legal, financial and technical risks. Then the contracts are negotiated and drawn up and the transaction can be carried out.



Special digital M&A tools can help facilitate M&A tasks from target screening and due diligence to contract drafting and integration. **In 2018 more than 60% of managers involved in corporate development activities are using digital M&A technologies other than spreadsheets.** They are convinced that the use of specific technologies can increase efficiency, save time and reduce costs. **Moreover 23% of managers are planning to use M&A technology tools in the future.** Common M&A tools are platforms offering target searching, tendering, negotiation management and virtual data rooms to sellers and potential buyers. In addition, there are also M&A management tools that structure workflows, aggregate work plans and monitor transaction risks as part of the transaction.

Clairfield; Statista; Financier Worldwide – "Digitalising M&A"

BLOCKCHAIN-TECHNOLOGY COULD HAVE AN EXTENSIVE IMPACT TO THE M&A PROCESS

What is Blockchain?

Blockchain is a chronological register for digital records, events or transactions that are managed by participants in a distributed computer network. The individual database entries are grouped into blocks and linked together in chronological order. The individual entries are verified by a consensus system based on cryptography and peer-to-peer (P2P) principles. Blockchain is stored decentralized at all network participants, so that no intermediate instances such as states or banks are necessary anymore.

Characteristics of Blockchain

One main characteristic of Blockchain is its decentralization through a distributed journal that is realized as a database that is shared and synchronized across multiple participants. Each network participant represents a node for data transmissions. The nodes validate the information so that a maximum security for sensitive data is guaranteed. Since the blocks in the chain are cryptographically linked, hacker attacks are almost impossible. Due to the chronological and the unchangeable concatenation of the individual blocks, the blockchain shows a high transparency and comprehensibility.

Public, private and federated Blockchain

There are public, private or federated blockchains. Public blockchains such as Bitcoin, Litecoin or Ethereum are accessible to all network participants and completely transparent. In the case of private blockchains such as Ripple or Hyperledger, individual persons are responsible for maintenance and assign rights to persons within the network. With federated blockchains, which are suitable for decision-making between several organizations, a group of companies or representative persons assumes responsibility.

Limitations of Blockchain

Disadvantages of the blockchain are the low individual scalability, the low data transfer rate, the limited storage space and the authorization management. Moreover, the integration of the Blockchain into IT infrastructures is sometimes complicated and currently many blockchains require enormous amounts of energy. In addition, the implementation of the blockchain is not possible without powerful network access. The high transparency of the transaction history can also be seen as a disadvantage in certain cases, if certain information is only intended for a selected circle.

#Blockchainwelt – Blockchain Technologie für Unternehmen; Fraunhofer FIT –"Blockchain: Grundlagen, Anwendungen und Potenziale"; Deloitte – „Convergence2017" ; #BLOCKCHAINWELT – „Was sind smart contracts?"; Taylor Wessing – „Blockchain und Unternehmenskauf – Der M&A-Anwalt als Auslaufmodell?"

SMART CONTRACTS-TECHNOLOGY HAS THE POTENTIAL TO FUNDAMENTALLY REVOLUTIONIZE THE M&A PROCESS

What are Smart Contracts?

Smart Contracts in general are written as lines of software code in which the terms of the agreement between buyer and seller are defined. The code and the agreements exist across a distributed Blockchain network. Due to the distribution in the network Smart Contracts enable trusted transactions between different parties without the need for a central authority or legal system. Intelligent contracts are able to make transactions traceable more transparent and certainly irreversible. The Ethereum Blockchain is considered to be the smart contract pioneer.

Characteristics of Smart Contracts

If the contract is correctly programmed, the parties benefit from a high degree of reliability, as interpretation difficulties or the loss of the document are virtually ruled out. In addition, a high level of security is guaranteed, since a blockchain uses a cryptographic encryption process that offers a high level of protection against hackers. Furthermore, the programming of a smart contract is more efficient than bureaucratic processing. Another characteristic is the independence of third parties, such as lawyers, notaries or bankers.

Use cases of Smart Contracts

Smart contracts can be used wherever transactions need to be documented transparently, securely and unalterably. Blockchain applications include digital identities, payment transactions, financial products, marriages, real estate transactions, insurance and many more. For example, an intelligent motor vehicle insurance contract allows insurance premiums to adapt to the behaviour of the insured person in road traffic. For example, if a person violates road traffic regulations and ignores speed limits, the monthly premium increases. This is just one example which shows that the smart contract can establish mutual trust between two parties.

Criticism of Smart Contracts

Since smart contracts are created by programmers, human errors can also occur here. Such software errors may not be immediately noticeable and can lead, for example, to an incorrect monthly sum being charged for a smart contract for a mobile phone contract. In addition, smart contracts are not yet clearly regulated in legal terms, so that the question of liability is unresolved in many cases. As a result, consumers are currently completely dependent on the reliability programmers.

Blockchainwelt - Die Blockchain Typen im Überblick; Ambisafe - Smart Contracts: 10 Use Cases for Business

SMART CONTRACTS CAN ENHANCE PROCESS QUALITY, REDUCE COSTS AND IMPROVE DEAL CERTAINTY UNTIL THE SIGNING

1 Declaration of Intent

- Smart contracts can be used to verify interested parties and guarantee traceability as early as the declaration of intent.
- As part of the preparatory phase, a declaration of intent in form of a non disclosure agreement (NDA), a letter of intent (LOI) or a term sheet is usually signed by interested buyers.

2 Transaction Agreement

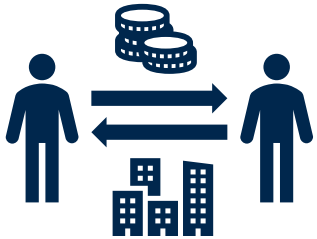
- In the further process, a purchase agreement is negotiated in form of a share purchase agreement (SPA) or an asset purchase agreement (APA). Such contracts often contain special agreements such as shareholder agreements, put-call options, escrow agreements, commitment letters or undertakings.
- Contracts are built on a standardized basis and adapted individually in the course of the process. The complex and regularly time- and cost-intensive process of negotiating M&A contracts could be decisively streamlined by means of a constant exchange of mutual "markups" of the draft contract and the execution of the contract.

3 Signing

- Signing usually involves the notarization of the company purchase agreement. In this phase of the M&A process, the notary as a third person has the responsibility to check the identity and legal capacity of the parties involved and to inform them of their rights and obligations.
- The Blockchain network is known to be transparent, secure, unchangeable and tamper-proof and is therefore ideally suited to replace a notary public.

SMART CONTRACTS CAN REDUCE EFFORTS AND ADDITIONAL COSTS AND AFTER CLOSING INCLUDING POST-TRANSACTION ACTIVITIES

4 Settlement



- During settlement the purchaser transfers the purchase price and the seller transfers the object of contract. Financial transactions realized via blockchain technology can be executed within seconds and without any classical financial intermediary.
- The payment and the asset-/ share transfer can be automated by the smart contract so that mutual trust is ensured.

5 Closing

- The verification of the contractual principles can be carried out in an automated process by means of blockchain.
- Smart contracts can be developed as automate transactions, triggered if certain obligations and conditions are met. Smart contracts can also reduce risks and enable dealmakers to enter into agreements with a higher level of comfort, independently if the parties have ever met or even trust each other.

6 Post-Transaction

- Smart Contracts can generate intelligent earnouts. Based on the earn-out provisions, smart contract payments can be automated. This allows automatic payments to be triggered as soon as, for example, a certain sales target is reached.
- In the post-closing phase, Service Level Agreements (SLA´s) or Transition Service Agreements (TSA´s) apply in many cases. In this phase, smart contracts ensure that all conditions determined in the contract are met automatically and certain items might not be explicitly formulated because they are being ruled by the smart contract.

BLOCKCHAIN IS REGARDED AS ONE OF THE FUTURE-ORIENTED TECHNOLOGIES

At the end of December 2017, the Bitcoin closed at 13,955 USD On the first day of 2019, it closed at 3,835 USD, almost a quarter of its previous value. While the euphoria for crypto currencies has recently dropped considerably, the underlying blockchain technology continues to attract a lot of attention.

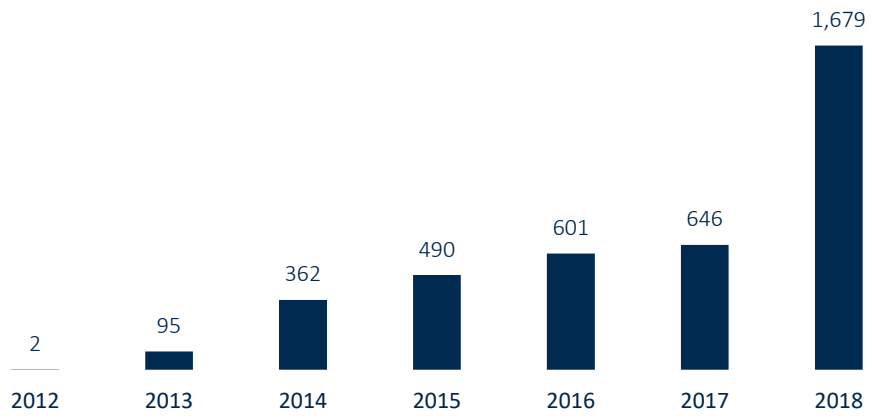
As a result, more and more blockchain start-ups are emerging and the number of investors in this area is also steadily increasing. In 2018, venture capital investments in Blockchain amounted to around 1.679m USD and increased by around 260% between 2017 and 2018.

Looking at the fields of activity of the Blockchain start-ups, it can be seen that 26% are focusing on basic infrastructure issues. A further 18% of start-ups deal with solutions in the financial sector and 14% of start-ups are focusing on projects in the industrial sector. Blockchain start-ups in the financial and industrial sector are mainly focusing on B2B business. With the exception of crypto currencies, the Blockchain is used relatively little in the consumer sector.

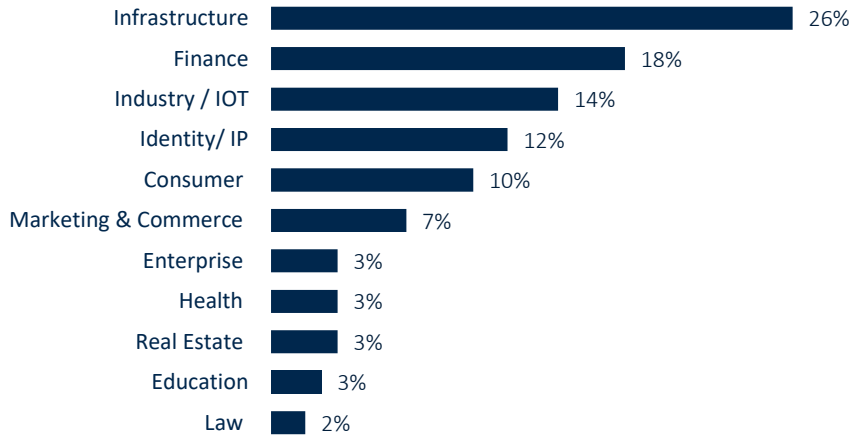
In 2018 more than 80% of managers in companies were already somehow involved in Blockchain issue and 15% have already implemented projects in this area. For 26% of companies Blockchain technology is one of the Top 10 topics in the digital industry.

Managers see the core potential mainly in the decentralized character of the blockchain, which can revolutionize trade and business processes. In addition, the technology works cost-effectively, efficiently, transparently and counterfeit-proof, so that many core processes can be mapped and accelerated.

Worldwide venture capital investments in Blockchain technologies from 2012 to 2018 in mUSD



Distribution of Blockchain start-ups in Germany by categories in April 2018



Digital Business Cloud – „Blockchain in Unternehmen auf dem Vormarsch"; ContentManager –"Top-Themen der Digitalbranche: Blockchain immer wichtiger",

SENIOR PARTNERS IN GERMANY FOCUSING ON TECHNOLOGY, MEDIA AND TELECOMMUNICATION (TMT)

Dirk F. Freiland

Dirk Freiland has twelve years of experience in M&A and corporate finance. Prior to joining Clairfield he was co-founder of a medium sized M&A company in Southern Germany. Before, he worked as senior manager at Accenture (formerly Andersen Consulting) in Strategy and Change Management where he was in his last function responsible for building up the M&A team and activities for Germany, Austria and Switzerland. Further milestones in his career were a small service company he built up from 20 up to 120 people within 14 months and Alcatal (Paris) where he worked in research and development. Dirk Freiland studied Mechanical Engineering, Electronics and Computer Science of the University of Applied Sciences of Esslingen/Stuttgart and Paris.

freiland@de.clairfield.com

Dirk Middelhoff

Dirk Middelhoff holds a degree in Business Law (LL.B) with a focus on corporate finance and more than 10 years experience in corporate finance, business development and strategy. Until 2008, Dirk Middelhoff worked for the listed EMC Corporation, headquartered in Boston, one of the 25 largest IT companies in the Fortune 500. There he led national and international projects such as, Vodafone, Deutsche Bank, Metro etc.. At last head of strategic alliances and mergers & acquisitions. After 2008 Dirk Middelhoff worked as Director for a medium-sized M&A consultancy firm with focus on technology companies. Dirk is member of advisory and supervisory boards at several technology companies.

middelhoff@de.clairfield.com

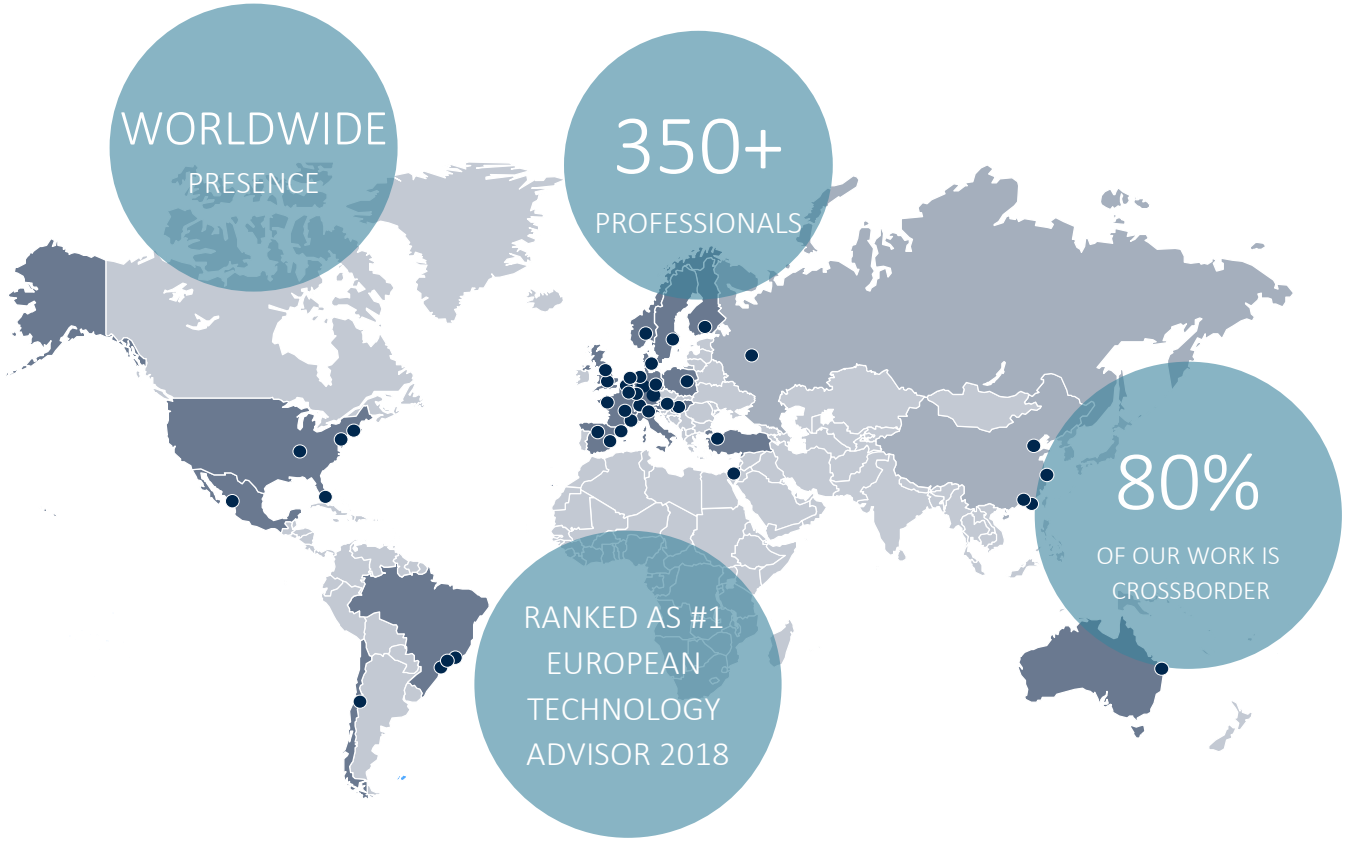
Andre Waßmann

Andre has more than 16 years of experience as a strategy, M&A, and corporate finance expert and as a strategy consultant in the financial sector, including positions at Accenture, Commerzbank and Investment Management company KGAL. In his role as managing director of two KGAL subsidiaries, until 2018, Andre was responsible for the strategic development and implementation of innovative business areas, M&A, and venture capital investments. During this time, he built up the business model of a digital fintech platform for the KGAL Group. Together with Prof. Dr. Katarina Adam – heading Blockchain at technical University HTW Berlin – Andre develops Blockchain use cases and specifically for M&A processes. Andre graduated from business studies at the University of Oxford and in Ravensburg and holds an MBA from Said Business School.

wassmann@de.clairfield.com

CLAIRFIELD INTERNATIONAL

CLAIRFIELD – A GLOBAL PARTNERSHIP OF M&A SPECIALISTS



Contact

Dirk Freiland
Managing Partner
freiland@de.clairfield.com

Dirk Middelhoff
Partner
middelhoff@de.clairfield.com

Andre Waßmann
Partner
wassmann@de.clairfield.com

Sophie Münks
Analyst
muenks@de.clairfield.com

www.clairfield.com

Clairfield International provides advisory services on middle-market transactions for large companies, private investors and private equity, public sector clients, and family businesses. Headquartered in Europe with locations in every major region worldwide, Clairfield offers clients access to local corporate businesses, investors, and key decision makers, combined with a deep understanding of local regulations and cultures. Clairfield ranks as one of the top independent M&A advisors in the annual worldwide, European, US, Latin American, and Asian Pacific league tables by Thomson Reuters.

DISCLAIMER

This material has been prepared by Clairfield International ("Clairfield"). This material is not an offer document. It has been published for internal information purposes only and describes, for the time being, the potential feasibility of one or more transactions on the basis of the information that is currently available. Disclosure, distribution or dissemination of the information contained in this material to third parties is prohibited and Clairfield accepts no liability whatsoever for the actions of third parties in this respect. This material is without oral explanations by Clairfield incomplete and should exclusively be considered in connection with them. Neither the complete material nor its constituent parts, in particular information, contained herein must be used for any purpose other than those expressly approved in writing by Clairfield.

Neither Clairfield nor any of its directors, employees or agents can guarantee the accuracy or completeness of the information contained in this material or accept a liability for any losses or damages arising from the use of any or all of the materials presented herein. Furthermore, this document should not be regarded by its recipients as a substitute for an independent assessment.

The information in this material reflects the conditions that prevail at the date on which this material has been issued and our individual assessment, each of which can vary. In creating this material we assumed — without separate examination — that the information available from generally accessible sources is correct and complete. Furthermore, our analysis does not constitute a valuation of the assets, the capital or the business. The statements in this material do not take into account the effects of an actual or potential change of control that might take place in connection with one or more transactions and might have a substantial impact on the evaluation.