



Sector information

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Information and communication technology

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I&C in Munich: Seamlessly embedded in other key industries

Munich's high-tech sector covers a tremendous breadth of both horizontal and vertical (application-oriented) technologies. The local information and communication (I&C) industry gives work to 147.000 people at some 35,000 companies and thus plays a **key role** in the region's successful mix of industries.

One important factor of success in and around Munich is the development of **embedded systems**. This focus of IT activities in the Munich region is largely due to the synergies reaped from close collaboration with local and largely application-oriented industries such as the automotive, aerospace, medical engineering, environmental technology and optical technology sectors. In all these industries, embedded systems are used intensively to control machinery and equipment.

Automated systems in industry, ABS and airbag controllers in cars, pacemakers and nuclear magnetic resonance systems... You name it: Almost every application you can think of is managed, controlled or monitored by embedded systems. The term embedded system simply refers to a computer system that is integrated (embedded) in a specific technical context. This computer's job is to manage, control or monitor the system within which it is embedded.

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In cultivating this sharp focus, Munich's I&C companies have therefore left themselves excellently placed to face the future, as embedded systems will constitute one of the fastest-growing markets in the years ahead. They will also play a pivotal role in driving innovation in user industries. The I&C industry is thus gaining in importance for the Munich region on two distinct levels: First, it is an economic force to be reckoned with in its own right. And second, its horizontal nature allows to contribute indirectly to growth and productivity in other local industries too.

Beyond this, I&C is also central to the development of the intelligent networks and technologies that are needed to master global megatrends such as climate change and demographic change. At the same time, this industry plays a part in creating supraregional markets for local companies.

Leading research, development and educational organizations

The innovative strength of Munich's I&C companies – and hence their ability to adapt and assert their presence in the face of global competition – is reflected in their **research and development (R&D) activities**. On average, Germany's I&C companies devote 7% of their revenues to R&D, a far higher figure than the average of 2.6% for the economy as a whole. Companies in the communication technology segment lead the field (12.6%), ahead of software engineering firms (9%). In the national context, the Munich region serves as the innovation leader – a fact mirrored in the high proportion of I&C patent registrations for which the region is responsible.

Munich's I&C industry has forged close links with the vast research potential afforded by the regions universities and non-university research establishments – a network that further sharpens their innovative edge. Munich indeed boasts a wealth of higher education and research facilities:

14 respected universities

- TUM (Technische Universität München)
- LMU (Ludwig Maximilians Universität)



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- Munich University of Applied Sciences
- University of the Federal Armed Forces
- Ten other institutions of higher education

Non-university research organizations

- The Fraunhofer Society (with its national headquarters and four individual institutes in and around Munich)
- The Max Planck Society (with its national headquarters and ten individual institutes in Munich)
- The Helmholtz Zentrum München (Helmholtz Center Munich), a research center operated by federal government and the Free State of Bavaria, which comprises 50 scientific institutes and independent departments. This center focuses on research into health and the environment and is a member of the Helmholtz Association of German Research Centers
- DLR, the German Aerospace Agency (with nine scientific institutes at its Oberpfaffenhofen campus)

As the detailed overview that follows clearly shows, Munich boasts a tightly meshed network of university and non-university research establishments that serve the I&C sector.

Ludwig Maximilians Universität (LMU)

The LMU is one of the most research-intensive universities in Europe. The recent excellence initiative enabled it to further sharpen its research profile by setting up four post-graduate research groups and several clusters of excellence, and by realizing the forward-looking LMUexcellent concept. At the LMU, intensive research into I&C themes is conducted by the Institute of Informatics and the Chair of Information, Organization and Management.

Institute of Informatics

<http://www.ifi.lmu.de>

Director: Professor Dr. Dieter Kranzlmüller

This institute breaks down into various chairs and research units, including:



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Mobile and Distributed Systems Group

<http://www.mobile.ifi.lmu.de/>

Professor Claudia Linnhoff-Popien

This group focuses its research on distributed systems. Mobile and ad-hoc networks and e-learning, economics and social science applications.

Database Systems Group

<http://www.dbs.ifi.lmu.de/>

Prof. Dr. Thomas Seidl, Prof. Dr. Christian Böhm, Prof. Dr. Peer Kröger, Prof. Dr. Volker Tresp (Honorarprofessor), Prof. Dr. Hans-Peter Kriegel,

This group conducts research into search and analysis methods in complex data contexts. It seeks to maximize data utility by leveraging data mining and complex search techniques such as similarity searches. Similarity search projects focus on areas such as medical engineering and the automotive industry.

Programming and Software Engineering Research Unit

<http://www.pst.ifi.lmu.de>

Prof. Dr. Dirk Beyer, Prof. Dr. Martin Wirsing , , Prof. Dr. Rolf Hennicker, Prof. Dr. Wolfgang Hesse, Prof. Dr. Mirja Majster-Cederbaum, Prof. Dr. Fred Kröger, Prof. Dr. Marcus Spies, Prof. Dr. Rudolf Hagenmüller

This unit develops methods to make software more reliable by deploying algebraic specifications. Research activities also concern themselves with the parallel programming theory and with software engineering techniques for web applications.

Programming and Modeling Languages Research Unit

<http://www.pms.ifi.lmu.de/>

Professor François Bry and Professor Hans Jürgen Ohlbach

This unit explores the presentation and administration of knowledge, logic-based knowledge modeling, markup languages, semi-structured data modeling, logic and constraint programming, automated deduction and artificial intelligence.

Theoretical Informatics Research Unit

<http://www.tcs.ifi.lmu.de/>

Professor Martin Hofmann, PhD

This unit devotes itself to the study of logic in computer science, computer-aided formal reasoning, information flow analysis, algorithmic game theory and didactic aspects of computer science.



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Bioinformatics Research Unit

<http://www.bio.ifi.lmu.de/>

Prof. Dr. Ralf Zimmer (Ordinarius), Prof. Dr. Caroline Friedel (Extraordinaria), Prof. Dr. Volker Heun (Extra-Ordinarius)

Biochemical networks and text mining are two focal areas of this unit's research activities.

Media Informatics and Human-Computer Interaction Group

<http://www.medien.ifi.lmu.de/>

Prof. Dr. Heinrich Hußmann, Prof. Dr. Florian Alt

Shared by two chairs, this group researches the model-based development of multimedia applications and web services and general forms of interaction in the context of ubiquitous computing.

Chair of Information, Organization and Management

<http://www.iom.bwl.uni-muenchen.de>

Director: Professor A. Picot

This chair's research program covers a broad spectrum, ranging from general business management and organization issues to specific aspects of the corporate use of information and communication technology. Current research focuses primarily on corporate networks, electronic business and mobile business.

Technische Universität München (TUM)

Recognized as one of Germany's first elite universities, the TUM has a strongly entrepreneurial focus that consistently seeks to translate its outcomes into practical economic applications. Considerable importance is attached to technology transfer, one of the TUM's key themes. (Contact: Dr. rer. pol Sandra Kröner, Tel: +49 89 289 25206 Mail: kroener@zv.tum.de.)

The following TUM chairs, institutes and groups conduct research into computer science issues:

Informatics Faculty

<http://www.informatik.tu-muenchen.de>

Dean: Professor Hans-Joachim Bungartz



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The 21 institutes that make up this faculty cover all the most important aspects of informatics.

Lehrstuhl für Theoretische Informatik

<http://www.albers.in.tum.de/index.html.de>

Prof. Dr. Susanne Albers

This chair concerns itself with efficient Algorithmen and data structures.,

Chair of Applied Software Engineering

https://www1.in.tum.de/lehrstuhl_1/

Director: Professor Bernd Brügge, Ph.D.

This chair concerns itself with software architectures for dynamic systems, software engineering and didactic aspects of computer science.

Chair of Languages and Descriptive Structures in Informatics

<http://www2.in.tum.de/hp/Main?nid=1>

Directors: Professor Helmut Seidl

This chair focuses on designing and implementing programming languages (e.g. to visualize data flows), optimizing program transformations, generating code and validating and accrediting software.

Chair of Database Systems

<http://www-db.in.tum.de>

Professor Alfons Kemper, Ph.D., Professor Thomas Neumann and Prof. Dr. Stephan Günemann

This chair conducts research into self-organizing, distributed data processing and systems for query languages and programming languages.

Chair of Software and Systems Engineering

<http://www.broy.informatik.tu-muenchen.de>

Professor Manfred Broy, Professor Ernst Denert, Professor Karl-Rudolf Moll and Professor Heinz Schwärtzel

Architecture & Services, Embedded Systems, Software Maintenance and Software Quality are just four of the many competence centers overseen by this chair.

Chair of Scientific Computing

<http://www5.informatik.tu-muenchen.de>

Professor Hans-Joachim Bungartz, Professor Thomas Huckle, Professor Michael Bader and Professor Christoph Zenger



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This chair concentrates its research efforts on the algorithms that underpin scientific computing, high-performance computing and numeric simulation applications.

Robotics and Embedded Systems Group

<http://www6.in.tum.de/>

Prof. Dr.-Ing. Dr. Alois Knoll, Prof. Dr.-Ing. Darius Burschka, Prof. Dr. Patrick van der Smagt, Prof. Dr. Gerd Hirzinger, Prof. Dr Matthias Althoff

This group applies itself to robotics in industrial, service and medical contexts and to sensor systems in automotive engineering.

Chair for the Foundations of Software Reliability and Theoretical Informatics

<http://www.model.in.tum.de/home/index.php?id=home&arg=>

Prof. Dr. Dr. h.c. mult. Javier Esparza, Prof. Dr. Jan Kretinsky, Prof. Dr.-Ing. Thomas A. Runkler

This chair conducts research into formal high-level software methods, the validation of probabilistic systems and the fundamental aspects of program analysis.

Chair of Network Architectures and Services

<http://www.net.in.tum.de>

Director: Professor Georg Carle

This chair focuses on network security issues, traffic measurement and analysis, the future of the Internet and wireless networks.

Computer Vision Group

<http://vision.in.tum.de/research>

Professor Daniel Cremers

This group conducts research into imaging methods.

Intelligent Autonomous Systems Group

<http://ias.cs.tum.edu/>

Professor Bernd Radig

This research group concerns itself with issues such as intelligent autonomous robots, computer-aided sports analysis and the analysis of facial expressions.

Chair of Computer Organization and Parallel Computer Architectures

<http://www.lrr.in.tum.de/startseite/>

Directors: Professor Arndt Bode and Professor Michael Gerndt



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This chair conducts research into parallel and distributed architectures, bioinformatics, reliable computing systems and e-learning.

Applied Informatics and Collaborative Systems Group

<http://wwwschlichter.informatik.tu-muenchen.de/>

Professor Johann Schlichter and Professor Anne Brüggemann-Klein

Research in this group ranges from communication mechanisms through architectures and middleware strategies for distributed applications to the design and engineering of solutions for special applications. Research activities focus primarily on distributed knowledge management, social software/groupware/communityware, mobile context-sensitive information and communication systems, web applications, web services, and modern teaching and learning environments.

Chair of Operating Systems

<http://www13.in.tum.de/>

Professor Uwe Baumgarten

Mobile operating systems, wireless management and the management of either form the focus of this chair's research work.

Chair of Efficient Algorithms

<http://wwwmayr.informatik.tu-muenchen.de>

Professor Ernst W. Mayr and Professor Harald Räcke

This chair concentrates its research effort on developing efficient algorithms in both sequential and parallel programming, especially with a view to solving combinatorial and graph theory problems. Complexity analysis in relation to problems and methods is another key aspect of its research.

Chair of Computer Graphics and Visualization

<http://wwwcg.in.tum.de/group/persons/westermann.html>

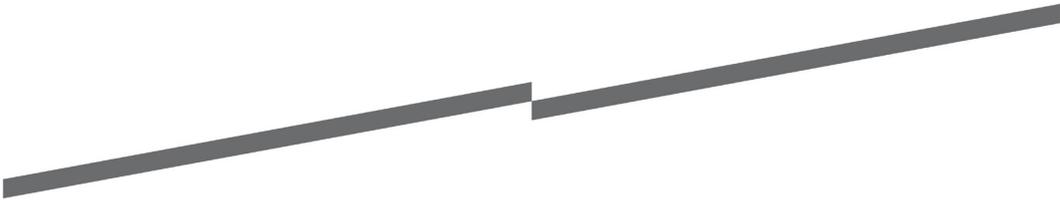
Professor Rüdiger Westermann

This chair focuses on computer graphics in general and interactive image synthesis and scientific visualization in particular.

Chair of Computer-Aided Medical Procedures and Augmented Reality

<http://wwwnavab.in.tum.de>

Professor Nassir Navab, Professor Gudrun Klinker, Ph.D. and Prof. Dr. Bjoern Menze



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The focus of this chair's research activities is on intra-operative imaging and visualization, computer-assisted surgery methods and augmented reality in both medicine and industry.

Chair of Business Informatics

<http://www.winfbase.de>

Director: Professor Helmut Krcmar

This chair concerns itself with information and knowledge management for the purposes of many different industries, applying a variety of research technologies such as ubiquitous computing and social software.

Chair of Decision Sciences and Systems

<http://ibis.in.tum.de>

Directors: Professor Martin Bichler and Professor Felix Brandt

This chair focuses its research on the points where computer science, business management and microeconomics meet. Algorithmic game theory is only one of several methods used to study the design of economic mechanisms that involve multiple decision makers.

Chair of Software Engineering for Business Information Systems

<http://www.matthes.in.tum.de/pages/t5ma0jrv6q7k/sebis-Public-Website>

Professor Florian Matthes

This chair is dedicated to studying the description and design of information infrastructures. It also conducts research into software systems for e-government.

Munich Network Management (MNM) Team

<http://www.hegering.informatik.tu-muenchen.de>

Professor Dieter Kranz Müller and Professor Heinz-Gerd Hegering

The Munich Network Management (MNM) Team is a research group that brings together scientists from Ludwig Maximilians Universität München (LMU), Technische Universität München (TUM), the LRZ Computer Center and the University of the Armed Forces in Munich. It ranks among the foremost German research groups in the field of IT management.

TUM School of Education, Chair of IT-Based Didactic Methods

<http://ddi.in.tum.de>

Director: Professor Peter Hubwieser



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Information technology has been introduced to the school curriculum in Bavaria on the initiative of the TUM. This chair focuses its research activities on efforts to study, support and evaluate IT-related didactic and learning processes.

Munich University of Applied Sciences

<http://www.hm.edu>

President: Professor Dr. Martin Leitner

Around 17,500 students are enrolled at the Munich University of Applied Sciences (MUAS), making it one of the largest institutions of its kind in Germany. MUAS currently offers more than 80 bachelor's and master's courses. Students are served by a total of some 475 professors, more than 745 staff and about 750 lecturers.

Faculty of Computer Sciences and Mathematics

<http://www.cs.hm.edu/>

Dean: Professor Veronika Thurner

Conceived in close collaboration with industry, this faculty covers a broad spectrum of modern courses relating to every aspect of informatics. Students can earn bachelor's and master of science degrees in a variety of subjects, such as business informatics and financial engineering. The bachelor's course in telematics and navigation is delivered in collaboration with the faculties of geoinformation, electrical engineering and information technology.

University of the Federal Armed Forces

<http://www.unibw.de/inf/fakultaet>

Director: Professor Mark Minas

The five institutes that make up the Computer Science Department develop software technologies and information technology systems. They also engage in applied systems and operations research in the realms of both technical and theoretical informatics. IT security and IT management courses were introduced to extend the range of subjects on offer in January 2012.

Fraunhofer Institute for Communication Systems (ESK)

<http://www.esk.fraunhofer.de>

Director: Dr. Rudi Knorr

The Fraunhofer ESK Institute bundles its scientific knowledge into six areas of core competency: wired transmission technologies, local wireless networks,



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reliable Ethernet and IP communication, adaptive systems, model-based software design/validation and multicore software.

Fraunhofer Research Institution for Applied and Integrated Security (AISEC)

<http://www.aisec.fraunhofer.de/>

Director: Professor Claudia Eckert

The Fraunhofer Institute for Secure Information Technology (AISEC) helps companies in all branches of service and industry to protect their systems, infrastructures, products and offerings. A new test laboratory now serves to analyze and resolve security issues faced specifically by small and medium-sized companies in the context of cloud computing.

Trade fairs and events

10. IT Cooperation Day

<http://muk-it.de>

March 31, 2017

This year's event will be the sixth Cooperation Day for IT companies to date. The City of Munich is partnering with the Chamber of Industry and Commerce for Munich and Upper Bavaria and the Munich IT Entrepreneurs' Network to stage this event. The aim is to promote innovation through cooperation, to support successful development collaboration between IT companies and to help create new markets.

Internet World Munich

<http://internetworld-messe.de/>

March 7-8, 2017

Internet World Munich is a B2B event for Internet professionals. More than 150 exhibitors, sponsors and partners will be presenting their latest products, solutions and services for online marketing, e-commerce and shop/site optimization at this year's fair. At the accompanying congress, numerous speakers will present successful real-world examples and discuss future developments in the Internet business.



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IT2I 2016/2017

<http://it2industry.de/>

IT2Industry is the trade fair and open conference for intelligent, digital networked working environments.

IT networks and organizations

BICC^{NET}

Bavarian Information and Communication Technology Cluster

Director: Sascha Stöppelkamp

Technische Universität München (TUM)

Boltzmannstr. 3

85748 Garching

Phone: +49 (0)89 24 8-8 071 19

Fax: +49 (0)89 24 8- 8 071 04

clusterbuero@bicc-net.de

<http://www.bicc-net.de/>

BICCnet's aim is to shore up future growth in Bavaria's information and communication technology sector. It seeks to promote networking between the corporate sector, higher education and research organizations, as well as involving service providers and investors in the Bavarian I&C sector.

GATE

Managing director: Christian Heckemann

Lichtenbergstr. 8

85748 Garching

Phone: +49 (0)89 5484-1111

[mailto: christian.heckemann@gategarching.com](mailto:christian.heckemann@gategarching.com)

<http://www.gategarching.com>

This incubation is currently home to 68 technology companies, most of which operate in the I&C sector.

MUK Munich IT Entrepreneurs' Group

Management Board: Gürkan Uzer

<mailto:info@muk-it.com>



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<http://www.muk-it.com>

This group forges valuable links between entrepreneurs in the IT industry. Its purpose is to enable knowledge and experience to be shared and, in the process, sustainably increased.

Isarnetz

Professor Wolf Gross

Phone: +49 (0)89 527789

mailto: wolf.gross@isarnetz.com

<http://isarnetz.de>

Isarnetz is an association of organizations and companies in Munich whose common aim is strengthen the Internet economy in Munich. This public platform promotes dialogue, networking and the tapping of synergies across all organizations that are part of the Internet scene in and around Munich.

Other organizations

Bayern Innovativ

Gesellschaft für Innovation und Wissenstransfer mbH

Managing Director: Dr. Rainer Seßner

Gewerbemuseumsplatz 2

90403 Nürnberg

Phone: +49 (0)911 20671-0

Fax: +49 (0)911 20671-792

mailto: info@bayern-innovativ.de

<http://www.bayern-innovativ.de>

The idea behind Bayern Innovativ ("Innovative Bavaria") is to bring different capabilities together in a way that expedites innovation by opening the door to fast and efficient cooperation between industry and science.

Bayerische Patentallianz GmbH

Managing Director: Peer Biskup

Nussbaumstrasse 12

80336 München



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Phone: +49 (0)89 5480177-0
Fax: +49 (0)89 5480177-99
mailto:info@bayerische-patentallianz.de
<http://www.bayerische-patentallianz.de/>

The "Bavarian Patent Alliance", established in January 2007, acts as a patent licensing agency, valuing and marketing the inventions of over 17,000 university-based scientists and engineers in Bavaria. Acting as the link between the scientific and business communities, it strives to protect the excellent patent-protected inventions of Bavaria's various universities and to enable industry to make sound economic use of them.

Invest in Bavaria

Manager: Dr. Wolfgang Hübschle
Prinzregentenstr. 28
80538 München
Phone: +49 (0)89 2162-2642
Fax: +49 (0)89 2162-2803
mailto:info@invest-in-bavaria.de
<http://www.invest-in-bavaria.de>

Invest in Bavaria is a business promotion agency operated by the Bavarian Ministry of the Economy and Bayern International GmbH. The team assists investors who are looking to move to or expand their activities in Bavaria. It supplies information, assists with the search for suitable sites/premises and puts companies in touch with the relevant local authorities, partners and networks.

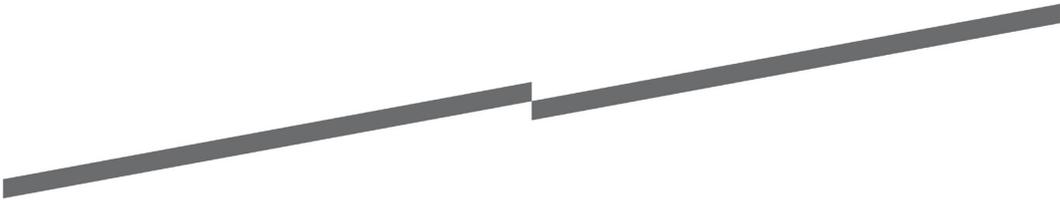
City of Munich

Department of Labor and Economic Development

Economic Development
Director: Kurt Kapp
Herzog-Wilhelm-Str. 15
80331 München

Phone: +49 (0)89 233-22402
Fax: +49 (0)89 233-27966
mailto:business@muenchen.de
<http://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Arbeit-und-Wirtschaft/Wirtschaftsfoerderung.html>

The Department of Labor and Economic Development provides an array of professional services to companies that are based in or considering moving to



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Munich. A point of single contact is available to help such companies find their way around the relevant aspects of local government administration. Advice on where and how to move is another focal area, as is support for business startups, information on the availability of suitable premises and putting firms in touch with the right authorities, chambers of industry and commerce, networks and associations. The department also supplies a wealth of information about the rich diversity of Munich as a place to do business.

**Chamber of Industry and Commerce for Munich and Upper Bavaria
Industry, Innovation, Environment**

Director: Dr. Wolfgang Vogler
Balanstrasse 55-59
81541 München
Phone: +49 (0)89 5116-1321
Fax: +49 (0)89 5116-8341
mailto:wimbauer@muenchen.ihk.de
<http://www.muenchen.ihk.de>

Representing industrial, trading and service companies in the region, the Chamber of Industry and Commerce is committed to improving conditions for the business community. It sees itself as a kind of parliament for the business community, whose interests it represents in respect of the government, administrative authorities and the general public. It also provides services (such as advice and consulting) to companies, handles public-sector commissions (such as inspecting vocational training standards) and takes steps to ensure fair and sustainable business practices.

Munich Network – Netzwerk München e.V.

Director: Oliver Gajek
Rosenheimer Str. 145i
81671 München
Phone: +49 (0)89 630253-0
Fax: +49 (0)89 630253-10
info@munichnetwork.com
<http://www.munichnetwork.com>

The Munich Network actively helps technology firms to get started, grow and remain successful in the long run. It brings them into contact with regional drivers of innovation and forges ties with the world's leading high-tech regions.



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Key companies

Adobe Systems GmbH

<http://www.adobe.com/de>

From its base in Munich, Adobe Systems GmbH coordinates the Adobe Group's sales, marketing and customer support activities in Germany, Austria and Switzerland.

Allgeier Holding AG

<http://www.allgeier-holding.de>

Allgeier is one of the leading integrated IT service groups in Germany, ranking second among the country's medium-sized IT service providers and IT recruiting companies. Allgeier breaks down into three segments: IT Solutions, IT Services & Recruiting and Project Solutions.

Atos IT Solutions and Services GmbH

<http://de.atos.net/de-de/>

Atos IT Solutions and Services GmbH is part of the Atos Group, an international IT service provider with around 74,000 employees in 48 countries and annual revenues of around EUR 8.5 billion. Atos was created on July 1, 2011, as the result of Atos Origin's acquisition of Siemens IT Solutions and Services GmbH.

Autodesk

<http://www.autodesk.de/>

Autodesk, the company that pioneered CAD technology, is the global market leader in 3D software for construction, planning, design and digital media. Its product portfolio includes industry-leading 3D solutions for mechanical engineering, industrial design, production, architecture, construction, media and entertainment.

Avnet Holding Germany GmbH

<http://www.avnet.com>



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Avnet is one of the largest distributors of electronic components, computer products and embedded systems. The US American company has operations worldwide. Avnet Holding Germany GmbH is based in Poing near Munich.

Brain Force Software GmbH

<http://www.brainforce.de>

Headquartered in Munich, Brain Force Software GmbH maintains offices in Berlin, Frankfurt and Cologne and is part of Vienna-based Brain Force Holding AG, a publicly traded company. The group's German company employs more than 450 people and posts annual sales of around EUR 50 million - approximately half of total consolidated sales.

Capgemini

<http://www.de.capgemini.com>

Capgemini is one of the five top IT consulting firms in the world and has two offices in Munich. It provides a broad spectrum of IT services to companies in a wide range of industries.

Cirquent GmbH

<http://www.cirquent.de>

Having become part of the Japanese IT group NTT Data in 2008, Cirquent provides consulting services across the entire value chain for banks, insurance companies, production firms, telecoms providers, service and logistics companies and power utilities.

Comarch Software und Beratung AG

<http://www.comarch.de>

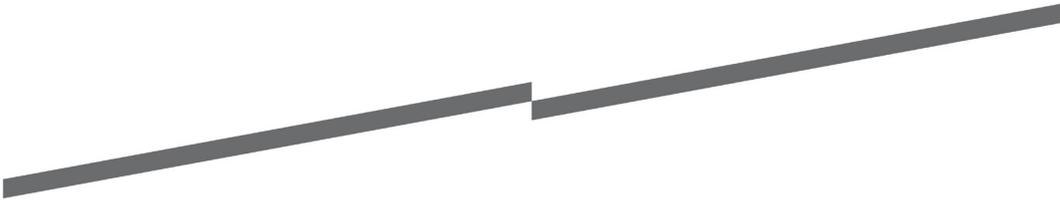
Launched in 1973, originally under the name SoftM, Comarch develops solutions for small and medium-sized enterprises. Comarch Munich possesses in-depth expertise in installing and supporting ERP systems and financial solutions. Comarch AG is the German subsidiary of Comarch S.A., which is headquartered in Krakow, Poland.

Computacenter AG & Co. OHG

<http://www.computacenter.de/profil>

Computacenter, Europe's leading vendor-independent information technology service provider, delivers tailor-made IT solutions.

COR & FJA AG



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<http://www.fja.com/>

COR & FJA is one of the leading providers of software and consulting services for the insurance industry, banks and organizations in the company pensions sector. In these markets, its powerful standard software products are complemented by an extensive array of technical and specialist consulting services. Headquartered in Leinfeld-Echterdingen, the FJA group runs two offices in Munich and operates in the international arena.

EPCOS AG

<http://www.epcos.de>

EPCOS develops, manufactures and sells electronic components, modules and systems. It operates in the fast-growing and technologically sophisticated markets of information and communication technology, automotive electronics, industrial electronics and consumer electronics.

ESG

<http://www.esg.de>

ESG ranks as one of Germany's leading system and software houses. The company has been developing, integrating and operating electronic and IT systems for military, public sector and corporate applications for nearly 50 years.

Fujitsu Technology Solutions GmbH

<http://www.fujitsu.com/de/>

Fujitsu Technology Solutions is a wholly-owned subsidiary of Fujitsu, the leading Japanese provider of IT-based business solutions. Its two Munich offices give corporate customers in Germany, Europe, the Middle East and Africa access to a global portfolio of IT products.

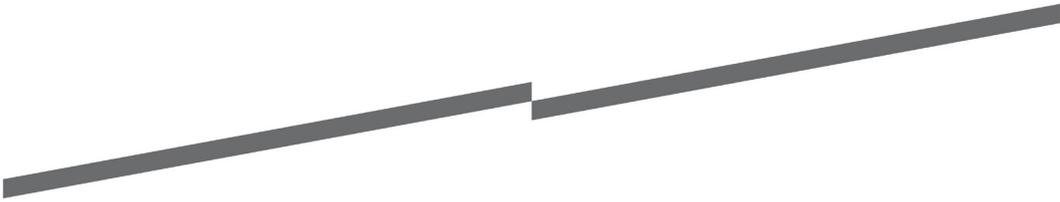
IBM Deutschland GmbH

<http://www.ibm.com/de/>

IBM is one of the world's biggest providers of information technology (hardware, software and services and B2B solutions). The company has a sales office in Munich.

Infineon Technologies

www.infineon.com



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Headquartered in Unterhaching near Munich, this global player produces semiconductor and system solutions for automotive electronics, industrial electronics, chipcard and security applications.

Infor Global Solutions

<http://www.infor.de>

Infor is a global provider of business software solutions for the manufacturing, retail and finance industries. The company sells integrated, market-leading products that address the key challenges facing today's companies in areas such as supply chain planning, relationship management, demand management, ERP, warehouse management, marketing-driven retail and business intelligence.

Ingram Micro Distribution GmbH

<https://www.ingrammicro.de>

Headquartered in Santa Ana, USA, Ingram Micro, Inc. is the world's largest distributor of technology products. Its German subsidiary, Ingram Micro Distribution GmbH, is based in Dornach near München and is the leading wholesaler for information technology products in Germany, distributing the products of more than 350 big-name IT companies and service providers in the fields of e-commerce, finance, marketing and logistics.

Intel GmbH

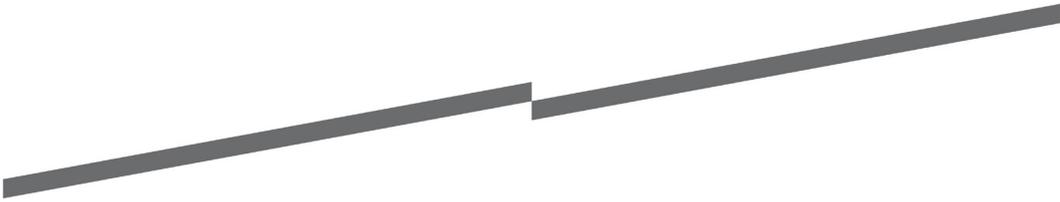
<http://www.intel.de>

Intel is the global leader in the market for PC microprocessors. It also produces a wide variety of other microchips for computers, such as chipsets for mainboards, wireless LAN applications and network adapters. The company's German headquarters in Munich accommodates corporate sales and marketing departments which, together with the facility in Swindon, UK, spearheads Intel's sales and marketing activities in Europe, the Middle East and Africa (EMEA). Intel Capital (the company's investment department), the Intel Software & Services Group and Intel Open Labs Munich (which coordinates the company's research initiatives throughout Europe in its capacity as part of Intel Open Labs Europe) are also based in nearby Feldkirchen.

Mensch und Maschine Software SE

<http://www.mum.de/>

Mensch und Maschine SE, which operates outside Germany under the name Man and Machine, is one of Europe's leading providers of computer-aided design (CAD) and computer-aided manufacturing (CAM) products. The company has a



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presence in Germany, Austria, Switzerland, France, Italy, the UK, Belgium, Sweden, Poland, Romania, the USA, Japan and the Asia Pacific region. Besides accommodating Mensch und Maschine SE, the Munich region is also home to three more group companies: Mensch und Maschine Systemhaus GmbH in Wessling, Mensch und Maschine acadgraph GmbH in Munich and Mensch und Maschine Systemhaus GmbH, also in Munich.

M-Net Telekommunikations GmbH

<http://www.m-net.de>

M-Net Telekommunikations GmbH delivers an array of landline-based and mobile voice and data services (including site networking and international radio and TV/HDTV offerings) to both retail and corporate customers. The company operates its own extremely failsafe optical networks across large swathes of Bavaria.

Microsoft Deutschland GmbH

<http://www.microsoft.com/de/de/default.aspx>

Microsoft is the world's leading provider of standard software, services and solutions. Microsoft Deutschland is Microsoft Corporation's third-largest foreign subsidiary. Responsible for marketing and sales for the company's products in Germany, it cooperates with around 37,000 local partner firms. Alongside its head office in Unterschleissheim, near Munich, Microsoft Deutschland has six further offices around Germany. In May 2003, the company also opened its Advanced Technology Labs (ATL) Europe (formerly the European Microsoft Innovation Center (EMIC)), a laboratory for applied industry research, in Aachen.

MSG-Systems

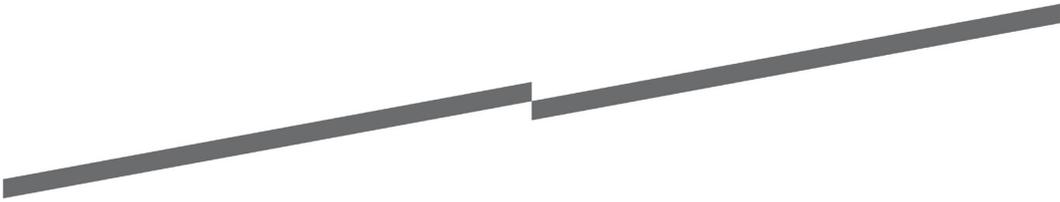
<http://www.msg-systems.com/>

This international group blends technological and business expertise with detailed industry knowledge to develop and deliver integrated, customized and optimized solutions.

Nemetschek

www.nemetschek.de/

The Nemetschek Group was founded in 1963 and is one of the world's leading providers of information technology solutions for the architecture, engineering and construction industry.



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Nokia Siemens Networks GmbH & Co KG

<http://de.nokiasiemensnetworks.com>

This global player specializes in providing telecommunications services. 3,000 of the 7,000 people it employs in Germany work in research and development.

Open Text

<http://www.opentext.de>

OpenText is a leading provider of enterprise content management (ECM) software. The Canadian company has set up its European headquarters in Grasbrunn near Munich.

Oracle Deutschland GmbH

<http://www.oracle.com>

Oracle Corporation (Nasdaq: ORCL) is the world's largest vendor of software for information management and the second-largest independent software company. Launched in 1977, its databases, tools and application software are complemented by an array of consulting, training and support services. Oracle Deutschland GmbH is headquartered in Munich and has 10 further offices throughout the country.

Tech Data GmbH & Co. OHG

<http://www.techdata.de>

Tech Data GmbH & Co. OHG is part of the Tech Data Group, which was founded in 1974 and has since become a leading global provider of IT products and logistics, management and other services.

Telefónica Germany GmbH & Co.

<http://www.telefonica.de/>

Focused purely on operational business, Telefónica Germany GmbH & Co. OHG is the German subsidiary of Spanish telecoms group Telefónica S.A. Under the O2 brand, the company sells mail, prepaid mobile communication products and innovative mobile data services based on GPRS, UMTS and LTE technology to retail and corporate customers in Germany. Telefónica's Wayra start-up program is designed to support start-up entrepreneurs in the Internet and telecommunications sectors. As part of this program, the Wayra Academy was opened in October 2012. Selected start-up entrepreneurs are receiving both financial support and an extensive coaching program.



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Telegate

<http://www.telegate.com>

Telegate AG positions itself as both a telephone information specialist and an information and Internet service provider. Martinsried near Munich is home to one of the company's German operations.

Yahoo Deutschland

<http://de.yahoo.com/info/>

The "one click" information and purchase offerings presented by this leading portal operator are backed by huge, networked units that comprise server farms and a phalanx of technical, logistical and customer service staff.

This sector information bulletin has been carefully researched and diligently compiled. Nevertheless, the City of Munich accepts no liability for incorrect or incomplete information. Please address any questions, comments or suggestions to Eva.Puckner: <mailto:eva.puckner@muenchen.de>, +49 (0)89 233-21626