

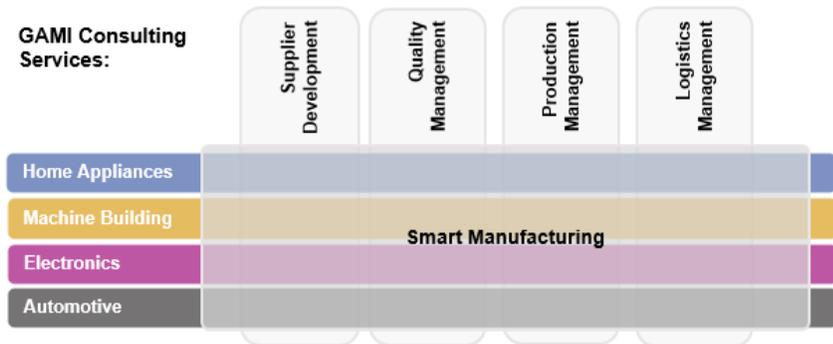


GAMI Newsletter

2019 - 01

NEWS | INDUSTRY PROJECT | TRAINING | EVENTS | CONTACT

GAMI Consulting Services:



Dear partners and friends,

In 2008, the wbk Institute of Production Science of Karlsruhe Institute of Technology (KIT) founded GAMI after years of experience in industry and research projects in China. Ever since, GAMI strengthened its competencies in global production and built up manufacturing knowledge. Today, it offers solutions in the key fields of Quality, Production and Supply Chain Management as well as Smart Manufacturing.

For 2019 we are focusing on addressing the current challenges regarding the integration of AI in industrial production and the increasing digitization in the wake of Industry 4.0 as well as its consequences for manufacturing processes and employees. Augmented Reality, Simulation, Data Analytics, Image Recognition and Machine Learning are currently integrated in the use cases of our Smart Manufacturing Labs and trainings. Round Tables on these topics will be continuously conducted.

With our regular newsletter, we would like to keep you informed about our current industry projects, training services as well as our events. I hope you enjoy reading and discovering something new in this issue.

Sincerely,

Tobias Arndt

Professor Gisela Lanza spoke on the Sino-German Economic Cooperation Forum of the Sino-German (Jintan) Innovation Industrial Park Promotion Briefing

On April 11th 2019, the Sino-German Economic Cooperation Forum of the Sino-German (Jintan) Innovation Industrial Park Promotion Briefing was held in Stuttgart, Germany. Prof. Gisela Lanza was invited to deliver a speech and attend a panel discussion.

In her speech, Prof. Lanza emphasized the great value that Sino-German cooperation will bring and shared the development of GAMI over the last 10 years, since it was founded by her in 2008. She pointed out that in recent years, China's comprehensive national strength has been continuously improved, and the transformation and upgrading of China's manufacturing industry has been further strengthened under the promotion of "Made in China 2025". China's manufacturing market will still have huge opportunities for cooperation between China and Germany, so that both countries will complement and benefit from each other in future.

Nearly 150 attendees from Chinese and German politics as well as business and university representatives attended this forum.

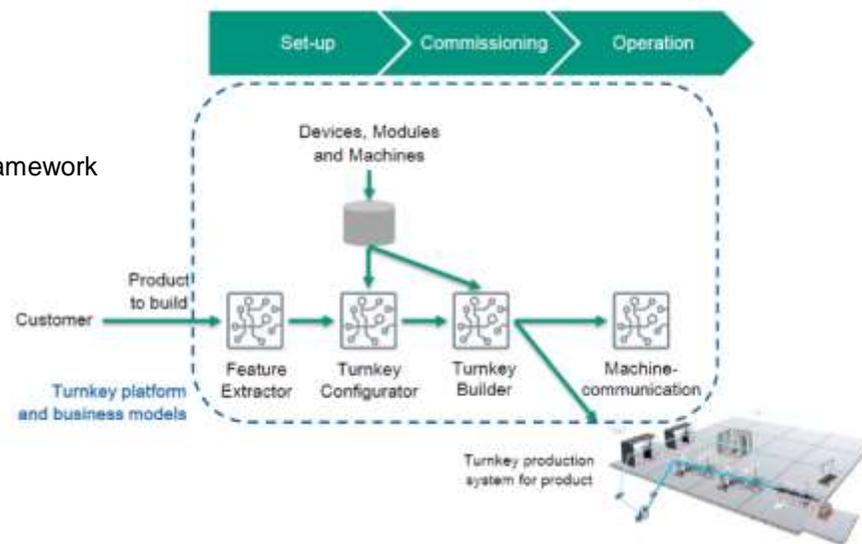


Sino-German Industry 4.0 Factory Automation Platform: I4TP

The 2nd milestone meeting of the joint research project I4TP (Industry 4.0 turnkey platform) was successfully accomplished at Karlsruhe Institute of Technology (KIT) on May 6th 2019. 40 members of the project partners joined the meeting and shared the current results of the project. Prof. Fleischer (KIT) and Prof. Zhang (Tongji) moderated the discussion.

The international and interdisciplinary project makes it possible to strengthen new forms of cooperation from the field of mechanical engineering. Since the 1st milestone in November 2018 the knowledge and solutions in solving complex challenges of a rapidly automated factory have been further developed. The outstanding project results have additionally been presented in three demonstration cases regarding the Industry 4.0 factory automation platform. They were also presented during the CIRP Design conference 2019 in Portugal.

Project Framework
for I4TP:

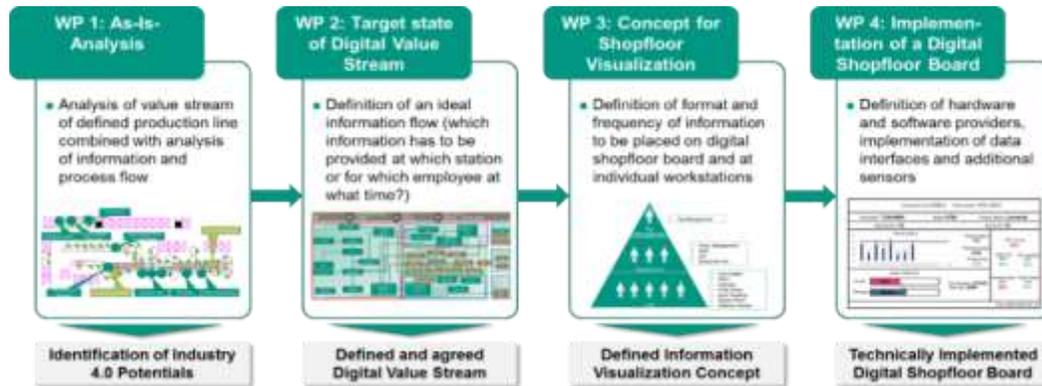


In the framework of the demonstration cases, GAMI improved the simulation model of the production system and optimized the utilization of equipment and resources as well as provided a data driven recommendation algorithm of scheduling rules. Additionally, GAMI developed a systematic approach for configuring and evaluating different digital business models (DBM) for I4TP, which can optimally address the market and customer requirements.

As a next step, GAMI will improve the implementation of the configuration and evaluation of DBM on the I4TP platform. Moreover, GAMI will further develop the methodology for deriving the implementation strategy of smart automation technologies within the I4.0 Factory Automation Platform. The next milestone meeting of I4TP will be held at Tongji University in Shanghai on November 4th 2019. It will continuously obtaining fruitful results and promote progress in I4.0 Factory Automation.

Background Information: The I4TP project, which is funded by BMBF and Ministry of Science and Technology of the People's Republic of China (MOST), is the first science and technology cooperation project between China and Germany in the framework of Made in China 2025 and German industry 4.0. The goal is to build a "reconfigurable intelligent production system construction, reference implementation and verification platform", in parallel to establish a software support and model-driven plant automation platform, integrated customer consultancy services and for the rapid generation of key manufacturing links in the production system program and commissioning verification. The main parts of I4TP project are i4.Turnkey, i4.Design, i4.Business, i4.Collaboration and i4.Demo-Validation-Center. The duration of project is 3 years from year 2018 to 2020.

Industry 4.0 Project on Digital Shopfloor Management



In Q1 2019, GAMI successfully closed an industry 4.0 project in the home appliance industry. After four months of cooperation, a big change can be seen at the assembly line, which was in scope of this project. Necessary equipment to collect important data was installed, a digital shop-floor management board was introduced to show the real time KPIs of the assembly line and different interfaces for different user groups were clearly defined and implemented in the existing Manufacturing Execution System. In this way, important production data as well as quality data are collected and shown in real time, so that engineers and managers could check the production status anytime and anywhere. Based on the real time data, it is now possible to react to unplanned events very fast. Besides, more visualized support was provided to the operators at the individual stations, so that they could stick to the individual requirements of different customers and maintain a high-level product quality.

Operational Excellence Project in the Construction Industry

The cooperation partner in this operational excellence project is one of the world's leading providers of pipe line systems for trenchless pipe rehabilitation. In 2017, it established a production location in Taicang. In order to meet the Chinese market demand and business expansion, the project partner wanted to improve the operation standards to increase productivity of its production process. With our expertise, GAMI supported to identify the wastes in the production process, established an improved Standard Operation Procedure and conducted mind-setting trainings in lean management for the production operators.

Project Outline

Improvement for Standard Working Process

WP1: Analysis of current working process	• Current working processes of production are recorded and analysed
WP2: Comparison of current working process with Standard Working Instructions	• Current working processes of production are compared with Standard Working Instructions and improvement potentials are identified.
WP3: Establishment of Standard Working Process	• Standard working processes are established based on Lean Philosophy
WP4: Definition & Conduction of trainings	• Trainings are conducted in Chinese on the newly established production processes

Education Program for Local Talents

Today's leading companies in the manufacturing industry are globally positioned. Worldwide closely linked networks from procurement, production and distribution sites offer huge amounts of optimization potential. Especially when it comes down to efficiency increase and cost reduction on the shop floor, it is no longer enough for companies to only optimize their internal processes based on local interests. In fact, top companies increase their own performance by further developing their suppliers. In order to support German companies in improving their Chinese supply chain, the so-called ProTalent project has been launched.

To give an example, a leading German company of the home appliance industry has selected one of its important Chinese suppliers to get developed. The project scope was defined after thorough on-site observation and discussion.

One aim of this project is to improve the packaging situation in order to lower shipment costs. Before the project started, the utilization of one container to be shipped to Germany was only about 80%. To increase the container's capacity, a new stacking method in the container was introduced, so that the Chinese supplier could increase the utilization to nearly 90% without any further costs. Additional considerations suggested a redesigning of the packaging size, what could further increase the capacity of a container.

The current factory layout is another project scope. In a first step, the status quo has been analyzed and the raw material supply as well as the material flow between the production lines were detected as critical. Therefore, GAMI worked out a new layout that stabilizes the material supply and enables a more concise material flow. A SWOT analysis of the suggestion has already been conducted and during the following plant visits, the proposal is going to be further specified and validated.

To further reduce waste and increase efficiency, the optimization of the production lines was included in the project scope as well. This supplier development project is ongoing and will last until the end of 2019. For further questions regarding our project approach and success please contact Mr. Zhang Renjie (zhang.renjie@silu.asia) or visit our website www.silu.asia.



Open course training program of 2019, 2nd round

GAMI launched its latest open course training program for 2019. All training sessions will take place at GAMI's Smart Manufacturing Labs. A unique learning environment by combining theory and practice as well as a platform to exchange knowledge and ideas with experts is offered. Moreover, our coaches' know-how and their industry expertise ensure the most efficient knowledge transformation. The training program consists of ten training sessions related to topics such as production management, quality management, lean logistics and Industry 4.0 application solutions. Please refer to the table below for details:

[<2019 GAMI Training Course>](#)

Round No (轮次)	No. (序号)	Training Topics (培训课题)	Duration (days) (培训时间)	Time Schedule (培训日期)
Round 2 (第二轮)	1	Design your production line lean & intelligent (让您的生产线精益化和智能化)	1	2019.06.14
	2	Preventive Quality Assurance - Design and Process FMEA (预防性质量保证 - 设计和过程失效模式及后果分析)	1	2019.06.21
	3	7 steps to effective problem solving for a high-performance team (高效团队解决问题的七步法)	1	2019.06.28
	4	Flexible production planning - The key to competitive edge (弹性生产计划 - 开启竞争优势的钥匙)	1	2019.07.05
	5	Lean & smart internal logistics management (精益化和智能化内部物流管理)	2	2019.07.11-12
	6	Industry 4.0: From Roadmap to Realization (企业工业4.0: 从实施蓝图到全面落实)	2	2019.07.18-19
	7	Digital Shopfloor Management (数字化车间管理)	1	2019.07.26
	8	Changeable Manufacturing: Enabler for Meeting New Challenges (可变更制造: 新制造形态下的制胜的赋能者)	1	2019.08.09
	9	Business models in the era of intelligent manufacturing (智能制造时代的商业模式)	1	2019.08.16
	10	Data Analysis in Production (生产系统数据分析)	1	2019.08.23

Open course training program of 2019, 2nd round

In April 2019, GAMI conducted trainings for a long term cooperation partner, who is the leading provider for industrial safety equipment. The three topics under the annual cooperation framework include trainings on implementing a Continuous Improvement Process, Problem Solving Techniques as well as Digital Quality Management. Clear focus of the trainings was creating a mindset and showing possibilities for solving challenges in a highly customized and volatile production environment.

By expert sharing, workshop discussion and practical simulation an efficient delivery of the valuable contents for a better understanding and direct impact on the problem solving skills of the participants could be ensured.

GAMI is an experienced training and consulting institute especially for the topics of Lean and Quality Management. We have cooperated with this partner for almost 6 years and gained lots of value from each other during these time.



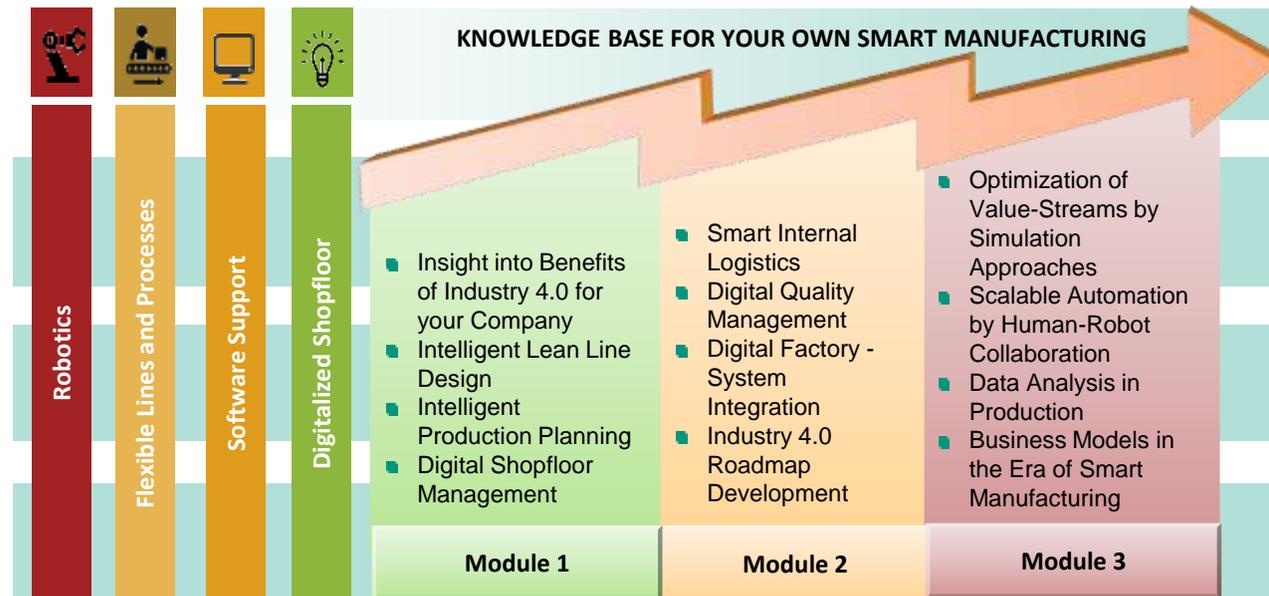
“Insight into Industry 4.0” customized Trainings

With the rise of the fourth industrial revolution, both academia and industry are engaged in the transformation and upgrading from traditional production to smart manufacturing. With GAMI's academic strength and years of consulting experience in the manufacturing field, we provide one of the leading trainings and workshops regarding Industry 4.0. The courses include content of Industry 4.0 conception and features, application approaches and use cases on e.g. how Industry 4.0 effects enterprise business models. Through such trainings and workshops, participants will not only get theoretical knowledge of Industry 4.0, but are also enabled to use practical application methods. Additionally, the trainer will guide participants during discussions to reconsider their perception of manufacturing to encourage new business models and to enhance their competitive strength. During the last quarter, GAMI has conducted customized workshops for several customers based on their actual demands. Here, the training contents were adjusted to guarantee a combination of theory with hands-on experience within the workshop.



Smart Manufacturing Training Topics

To educate talents in the topic of smart manufacturing, GAMI developed a training concept with 12 topics divided into 3 modules.



Besides the developed courses, we offer various smart manufacturing workshops at our facilities. The contents can be adapted according to your individual needs.

GAMI item joint training – “Design your production line lean and intelligent”

Together with its industry partner item, GAMI held two rounds of the jointly developed training on lean line design in March and April. 31 industrial participants from 13 companies joined the training.

Focus of the training are methods on how to systematically streamline a process in order to remove waste. The aim is to design assembly and logistic processes to maximize productivity and flexibility, as well as to minimize space requirements and throughput time. Workstation design and lean factory tools for line design as well as concepts for an optimized material delivery are provided. Finally, the connection of lean line design to Industry 4.0 is introduced, as well as methods how to automatically gather data and to use digital tools for a further optimization.

Conducted by GAMI, this topic is very suitable for industrial engineers, production planning engineers and managers, as well as for everyone who is interested in working in the fields of production or supplier improvement.

GAMI and item already advanced the contents into a 2 days training on June 20-21, which will cover more use cases and advanced knowledge for experienced engineers. Welcome to join us!

GAMI Smart Manufacturing Lab OPEN DAY

GAMI held 2 rounds (one in English, one in Chinese language) of our regular Open Day event in January and March 2019. Around 50 attendees from companies participated in the deep knowledge sharing regarding Smart Manufacturing solutions to get inspiration for the improvement of their own production processes. Due to the manufacturing transformation requests in china, industry companies have been paying more attention on how to find solutions from smart manufacturing to achieve their short or long terms goals. We have organized this event quarterly since the setting up of our Smart Manufacturing Labs, which include the Industry 4.0 Demonstration and Innovation Center and the Artificial Intelligence Innovation Factory.

Our Smart Manufacturing Labs serve as a platform for advanced training sessions for Sino-German enterprises in the field of production, quality and supply chain management enabled by Industry 4.0. Industry 4.0 solutions are also part of our consulting services to upgrade your production system to a cyber-physical production with guaranteed tangible benefits. We will continue the events. If you are interested in participating, please contact us via info@silu.asia.



Lean Logistics Management Round Table Event



On March 28th 2019, GAMI held a round table event on the topic of lean logistics management. Around 20 participants from industrial companies joined the event. GAMI and our partners Würth and Sximrobot shared their opinions and use cases in this topic with the participants.

Focus topics were possibilities to eliminate waste in logistics operation processes and to ensure traceability over the whole supply chain, especially to ensure just in time deliveries. At present, many companies still face problems on designing a fully traceable material replenishment concept from the supplier to the customer, resulting in a low supply chain efficiency.

During the round table insights on common problems were shared and inspiration brought by rich industry cases, techniques and methods for our partners to gain new ideas to improve their logistics management.

Utilizing Data to improve QCD and Operational Efficiency

In the era of increasing data availability in production, methods on how to use data efficiently and to transfer to information is a crucial topic for the development of a company. Traditional management approaches are more and more relying on data. Therefore, the availability and analyses of data generated in the production processes are the key for successful operational strategies.

In order to share methods on how to gain information out of production data and to use it for making effective decisions, GAMI held a round table event on the topic Utilizing Data to improve QCD and Operational Efficiency on May 10th, 2019. During the talks from Microsoft, Baidu Cloud, Siger Data as well as GAMI industry cases were shared to help companies to use data analysis for in quality as well as operations management.



Contact:

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- Events: [Ms. Wang Pei](#)

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To unsubscribe from this newsletter, please send an email to: info@silu.asia. For further questions, please do not hesitate to contact us.

The brochure features a green and white color scheme. At the top left, it says 'GAMI Introduction' and 'GAMI 简介'. Below this is a circular collage of photos showing people in a meeting. The main text is split into two columns. The left column describes GAMI's establishment in 2008 by wvk and KIT, its focus on technical education and research, and its goal to provide advanced methods and concepts to industry partners. The right column describes the production line, the Institute's role as a knowledge leader in smart and global manufacturing, and its training services. The bottom right of the brochure features the KIT logo (Karlsruhe Institute of Technology) and the GAMI logo (Global Advanced Manufacturing Institute). There are also images of the KIT building and a banner for 'Industry 4.0 Demonstration Center'.

GAMI Introduction
GAMI 简介

GAMI - the Global Advanced Manufacturing Institute was established in China in 2008 by wvk Institute of Production Science of the Karlsruhe Institute of Technology (KIT). KIT is based on one of the first technical universities in Germany and has since become a high-quality education and research institute. It is especially strong in natural sciences and engineering – even on an international scale. With our university background, we can provide our partners in industry and research projects with advanced methods and concepts to reach operational excellence. Our goal is to deliver individual strategies and smart solutions in production and supply chain management in order to create a long-term and sustainable benefit. Our unique Industry 4.0 Demonstration and Innovation Center serves as a high-level training facility, as well as incubator for Sino-German innovation programs related to Smart Manufacturing. The Industry 4.0 Center serves as well as a platform to facilitate joint research and innovation programs for Sino-German enterprises. It is the first center in China which can demonstrate German Industry 4.0 application solutions using a real production line. The most existing assembly technology used here to create a production system that is powered by Industry 4.0 and can be configured according to the customer requirements, to demonstrate the advantages of modern assembly technology.

GAMI – 全球先进制造研究所，是由早年在德国实施工业管理项目的德国卡尔斯鲁厄理工学院 (KIT) - wvk 生产技术研究所以 2008 年设立。KIT 是德国最大的理工大学之一，将信息科学与自然科学和工程学科相结合。基于院校背景，GAMI 致力于为国内客户提供扎实的供应链管理、质量控制、生产管理及物流管理方面的专业策略和管理解决方案，确保客户利益的持久及可持续性。同时，中德工业 4.0 技术展示创新中心作为一个高水平的教育训练平台及中德智能制造创新中心孵化地，服务于国内合作伙伴。

中德工业 4.0 技术展示创新中心作为一个专业技术平台，还可以促进中德企业联合研究和创新项目的建立实施。它是中国首家应用实际生产线来展示德国工业 4.0 应用方案落地实施的创新中心。该中心配备了世界上海岸最好的德国工业 4.0 智能技术和生产系统，可以帮组客户实现制造不同生产模式，充分发挥现代制造业的驱动力。

Research 研究领域
Being a knowledge leader in smart and global manufacturing 智能制造及全球先进生产中的知识领先地位

Engineering Services 工业服务领域
Enhancing the level of smart and global manufacturing capabilities 增强及全球化制造能力的提升

Training 培训领域
Developing high quality people and organizations 帮助提高员工素质和组织竞争力

KIT
Karlsruhe Institute of Technology

GAMI
Global Advanced Manufacturing Institute

中德工业 4.0 技术展示创新中心
Industry 4.0 Demonstration Center