ECON MANAGEMENT VISION

经管视野

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同济大学发布全球首个「三创指数」助力创新型国家建设

TONGJI UNIVERSITY RELEASES THE WORLD'S FIRST INDEX OF INNOVATION, ENTREPRENEURSHIP AND VENTURE CAPITAL IN ORDER TO HELP BUILDING AN INNOVATION-ORIENTED COUNTRY

经管视野
ECON MANAGEMENT VISION

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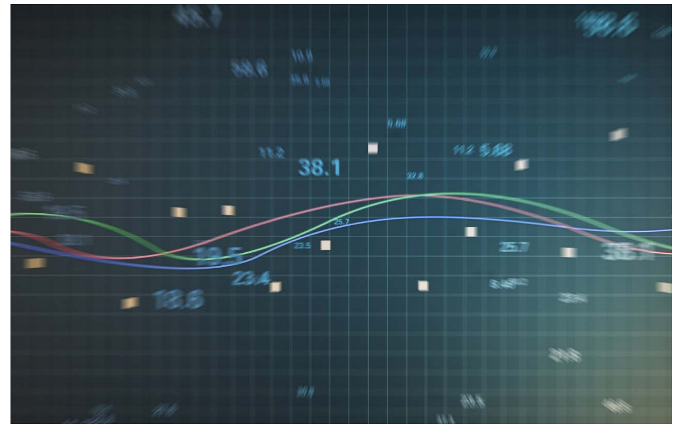


享 SHARING

品 LIFESTYLE

同济经管
TONGJI SEM

In the fourth round of national discipline evaluation,
the first-level discipline of Management Science of Engineering was rated A+,
the highest in China (top 2%).

教 育 部 第 四 轮 学 科 评 估 结 果

同济经管
管理科学与工程一级学科

A+档

全 国 并 列 第 一

评估结果	学校
A+	清华大学
	同济大学
	国防科技大学
A	北京航空航天大学
	天津大学
	哈尔滨工业大学
	上海交通大学
	浙江大学
	合肥工业大学

同济大学发布全球首个“三创指数”助力创新型国家建设

李春燕博士发布全球首个“三创”指数

5 月 20 日上午，全球首个“三创指数”发布会在同济大学嘉定校区举行。该指数由同济大学经济与管理学院、管理高等研究院以及创东方投资有限公司共同发起设立的“同济大学创新创业创投（三创）研究中心”创立。发布会上，同济大学经济与管理学院副教授李春燕博士详细地阐述了“三创指数”指标体系建立的理论基础及指标选取的基本原则，介绍了指标建立的方法过程和各个指标的具体内涵，依据“三创指数”的结果，着重分析了我国部分区域的三创综合情况。

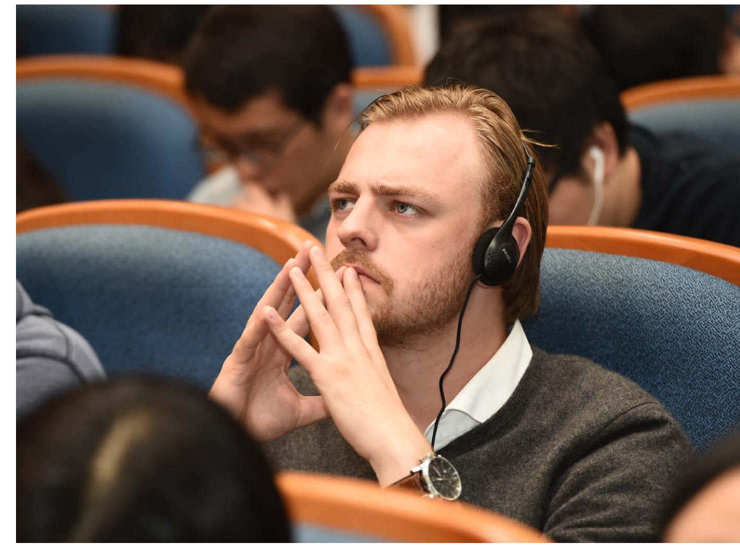
本次“三创指数”的指标体系构建，围绕外部环境、资源投入、主体能力和综合效益 4 个维度（一级指标）开展，针对 17 个方面（二级指标）、选取了 93 项具体内容（三级指标）综合进行评价。重点对政策制度环境、政府效率、区域经济基础、当地市场环境、创新创业创投主体的产出能力、经济增长和企业成长发展等方面做出相关分析。本次“三创指数”所有数据的获得，不仅来源于权威性的数据库以及各类年鉴，还运用数据挖掘、人工智能等信息技术进行广泛搜集及深度推衍。

三创指数

4 个维度

17 个方面

93 项具体内容



报告分析显示，在三创综合指数排行榜中，传统的经济强省（市）占据了榜单的前排位置。其中，北京、广东、上海分别位列前三名，江苏、浙江和山东紧随其后；长江流域地区整体水平接近全国平均值，排名位于中上游；东北和华北地区处于中下游水平；西部（西南）地区除陕西省外，整体分数较低，处在榜单的最后。

依据地理区域的划分，可以看到三个重要的经济增长极，北京和天津为第一个强有力的增长极，其次是江浙沪地区的长江带增长极，接着是广东地区的增长极。以上结果表明，在经济发达地区，教育科研水平雄厚，创新研发投入高，产业发展成熟，综合基础条件好，尤其是高新技术产业密集的地区是创新创业的沃土，其广阔的经济效益前景也吸引着各类资本的投入。经济欠发达和偏远地区，工业规模、教育科技水平落后，市场环境综合指数低，对各类人才、企业、资本吸引力不足，导致了三创指数以及三创综合能力的低下。

值得一提的是，从三创指数的外部环境指数来看，上海拔得头筹，其次是北京、广东和江苏。各地区间差异逐渐减小，这也表明政府在制定政策时，一方面要发挥原来增长极自身的作用，拉动区域经济的增长，同时还要鼓励创新，帮助其打造成为在某一产业较为领先的地区。针对梯度比较低的产业分布地区，政策制定方需鼓励其进行模仿性创新，协调整个区域创新发展和经济发展。因此，对政府来说，企业才是真正的创新主体。政府如果要提升企业的创新能力，首先需要提供宽松透明的政策制度，制定合理的产业政策，提高业务办理效率，规范技术标准，保护产业发展和企业为主体的市场经济发展良性环境；其次是产业升级转型，尤其是传统工业，要与“互联网＋”、人工智能等新兴技术相结合；第三是注重产业整体布局，根据地域特色引进和重点发展相应的高新技术产业，避免大而全，注重“特”和“精”。

据李春燕博士介绍，同济大学创新创业创投指数将打造一个全新的“三创”生态系统。在该系统中，研究人员通过多维度数据源和算法模型，全面系统评估全国多个省市区关于创新创业创投本质的多维特征。后续“三创”研究中心会依据不同行业、不同地区、不同指标进行深入细化的调研，动态调整指数结构。具体的调研结果及信息将形成《2018 中国创新创业创投指数报告》，并在 2018 年 10 月第十四届中国科技政策与管理学术年会上向社会正式发布。

TONGJI UNIVERSITY RELEASES THE WORLD'S FIRST INDEX OF INNOVATION, ENTREPRENEURSHIP AND VENTURE CAPITAL IN ORDER TO HELP BUILDING AN INNOVATION-ORIENTED COUNTRY

FIRST INDEX OF INNOVATION

4 Dimensions

17 Fields

93 Specific Items

Dr. Li Chunyan introducing the Index on the conference

On the morning of May 20, a press conference was held at the Jiading Campus of Tongji University to launch the world's first index of Innovation, Entrepreneurship and Venture Capital (IEVC). The Index was released by the Research Center for Innovation, Entrepreneurship and Venture Capital of Tongji University which was co-sponsored and founded by Tongji SEM, AIBR as well as CDF-Capital. On the conference, Dr. Li Chunyan, an associate professor of Tongji SEM, elaborated on the theoretical basis for the establishment of the Index's indicator system, basic principles for selecting the indicators, the method and process of the establishment and specific meanings of indicators. She also detailed on the comprehensive situation of IEVC in certain regions in China based on the results of the Index.

The indicator system of the Index is constructed in four dimensions (primary indicators) including external environment, resource input, subjective capabilities and comprehensive benefits. 93 specific items (tertiary indicators) are chosen in 17 fields (secondary indicators) in order to form a comprehensive evaluation. The system highlights the policy and institutional environment, efficiency of the government, regional economic foundation, local market environment and the productivity, economic growth and corporate development of IEVC subjects when making analysis. The Index solicits its data not only by searching in authoritative databases and various types of yearbooks, but also by employing information technologies, such as data mining and AI, for extensive collection and in-depth deduction.

As is shown in the report, traditional economically strong provinces (and cities) occupy the top slots on the ranking list of comprehensive index, with Beijing, Guangdong and Shanghai forming the top three, closely followed by Jiangsu, Zhejiang and Shandong. Moreover, the overall level of the Yangtze River basin region is close to the national average and is thus in the mid-upper level; Northeast China and North China are at the mid-lower reaches; Western (Southwest) regions have lower overall scores, except Shanxi Province, and are consequently lowest-ranked.

By geographic regions, there are three significant economic growth poles, the first being Beijing and Tianjing, followed by the Yangtze River Belt in Jiangsu, Zhejiang and Shanghai regions and then Guangdong region. The above results indicate that: developed economic regions where educational research is well-established, innovative R&D investment is high, industry is mature, comprehensive basic conditions are satisfactory, especially those high-tech industries concentrated regions, are considered as fertile grounds for innovation and entrepreneurship, thus attracting various investments by their prospective economic effects. As for underdeveloped and remote areas where the industrial scale, level of education and technology are lagging behind, the comprehensive index of market environment is low and the attraction to all various kinds of talents, corporates and capitals is insufficient, their Index and comprehensive ability of IEVC are unsatisfactory.

Another thing that's worth mentioning is the external environment indicator of the Index. Shanghai won the first place, followed by Beijing, Guangdong and Jiangsu. Regional differences gradually decrease, indicating that, when formulating policies for better-developed regions, the government should not only stimulate their economic growth, but also encourage innovation and help them become leaders in certain industries. For those lower-ranked regions, the government is advised to encourage imitative innovation and coordinate the development of innovation and economy in the regions. For the government, enterprises are real subjects of innovation. If the government wants to improve their innovation ability, the first thing to do is to provide a transparent and favorable policy environment which requires reasonable industrial policy, efficient operation and uniform technical standards to preserve a benign environment for the development of industries and the market economy with enterprises as the main body. The second measure to take is the upgrading and transformation of industries. The traditional ones, in particular, need to be combined with Internet+, AI and other emerging technologies. The third is to emphasize on the overall industrial layout specific. High-tech industries should be introduced and focused on according to regional characteristics. Big and all-inclusive industries should be avoided while characteristic and specialized industries are encouraged.

According to Dr. Li, Tongji University's Index of IEVC is to help build a brand-new IEVC ecosystem where researchers use multi-dimensional data source and algorithm model to comprehensively and systematically evaluate multi-dimensional characteristics of IEVC in various regions in China. In the near future, the research center will conduct in-depth and detailed researches according to different industries, regions and indicators and will dynamically adjust the index system. The full research results and other relevant information will be included in the 2018 Report of Index of Innovation, Entrepreneurship and Venture Capital in China which will be released in October, 2018 on the 14th Chinese Annual Academic Conference on Policy and Management of Science and Technology.

eduniversal MASTERS RANKING 2018

同济经管 TONGJI SEM

Eduniversal
2018 年度最佳硕士项目

房地产硕士专业
全球第 9

供应链与物流硕士专业
全球第 20

同济经管硕士专业跃居亚洲第1

近日，Eduniversal 发布 2017-2018 全球最佳硕士项目排名，我院房地产硕士专业（Master Programme for Real Estate）跻身全球前十，相比去年上升 11 位，跃居全球第九名；供应链与物流硕士专业（Master Programme for Supply Chain and Logistics）上升 3 位，位居全球第二十名，两个专业均位列亚洲第一。

此次排名表明，我院房地产及供应链与物流硕士项目的质量已具备较强的国际竞争力和品牌知名度，其培养质量已得到国际认可。

Eduniversal 成立于 1994 年，是知名的全球商学院排名及服务机构，总部设在法国巴黎，其全球最佳硕士专业排名根据项目师资构成、雇主网络以及毕业生薪资水平、就业状况和满意度调查等指标评价得出。目前，Eduniversal 已成为法国乃至全球最受认可的高等教育排名机构之一。

领导要伪装还是率真？

魏峰
同济大学经济与管理学院教授、
博士生导师

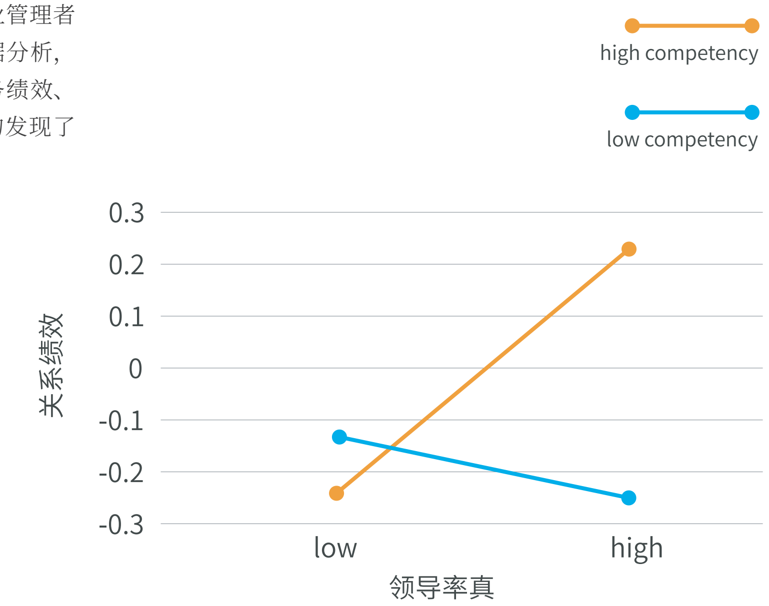
近些年，领导学研究中有一个概念很流行，authenticity，哈佛商业评论将其翻译为“率真”，我觉得比较接地气。它说的是一个领导者很真实，言行都是自己内心真实的流露，与下属保持透明直率的关系。一系列学术研究显示：率真的领导者能提升下属的满意度、敬业度、对领导的信任、对组织的承诺和工作绩效等，可谓有百利而无一弊。

然而，我们身边的现实却演绎着相反的故事。一方面，现实中率真的领导者很少见，领导“摆谱”、“装腔作势”等现象反而司空见惯；另一方面，不少古籍经典提醒我们，城府是做领导的一项必要修炼。“情不立威，善不居官”、“逢人只说三分话，未可全抛一片心”、“祸从口出”等也被不少人奉为至理，就连哈佛商业评论这种国际商业智慧的窗口都说“领导不必要十分诚实，要适度伪装”。于是，我们不禁要问：作为领导者，到底该伪装起来还是保持率真？

率真的领导者有自知之明，清楚地知道自己的信念和价值观，并能遵照自己的价值观与下属保持坦诚的交流，不伪装，不扭曲自己本来的面目。在领导下属时，他们不会使用强制手段，而更多的是以身作则，榜样示范。一般认为，这样侧重正面引导的领导方式，有助于形成良好的上下级关系，但是否会有高的产出却观点不一。正如埃米尼亚 · 伊巴拉在《本真性悖论》中的例子，当信奉透明、协作的管理者向下属坦诚透露自己对管理工作的害怕和不自信而需要他们的帮助时，却失去了在下属心中的威信。

从理论上讲，领导学研究一直沿着两条路径发展，一条是领导风格或行为研究，另一条是领导才能研究（competency，或称胜任力）。前者产生了很多知名的领导理论，如魅力型领导、交易型领导、参与型领导、伦理型领导等等；后者的理论则相对简单，实践却非常丰富。众多大型企业都在卓有成效地推进领导胜任力模型设计、领导才能评价和领导力开发等工作，并籍此有效地优化了团队能力，改进了组织绩效。这两股研究势力好像两条平行线，各自运行，却又从不交叉。我认为这种支持性的率真领导方式，唯有在领导者才能出众时，才能起到“重关系又重任务”的双重效果，单纯的率真可能难以树立领导的权威。基于这种考虑，我们做了一项研究来探测领导率真对领导才能的依赖现象。即：率真的领导是否唯有在领导才能出色时，才能表现出优异的领导效果。

通过对来自上海的248组企业管理者及其下属的配对调查问卷进行数据分析，证实了以上假设。我们分别用任务绩效、关系绩效和敬业度作为因变量，均发现了类似结果，研究结果如下图所示。



本研究得到以下启示：

1、领导者应该表里如一，坚持信仰，而不必委屈甚至扭曲自我。

本研究发现，领导者率真有助于提升下属绩效和敬业度。因为率真的领导者对待下属时，不会以一个“完美领导者”的形象出现，不懂装懂，有意隐藏自己的弱点和不足，反而常以开诚布公的坦诚方式与他人进行认知和情感交流。这些不仅可以增强下属的自尊心，有效减少跟领导相处时不必要的心理负担而以平常心做事，也会引导他们承认自我的局限，以本真的状态与他人交流，降低了人际间的沟通成本。同时，率真的领导者还通过传递明确的期望、有效的激励，并创造发展机会促使下属更快成长。以上这些做法也与习近平主席强调的“干部要勤政务实，不能‘假大空’”相吻合。

2、领导者应着力注重个人才能、胜任力的提升。

这里的才能是指将对组织效能产生积极或消极影响的一系列可识别的个人工作行为，常以技能、能力等形式呈现。常见的才能如目标设定、问题意识、做决策、做计划、工作指导、授权、协调、监督、激励和团队管理等。这些才能无论对自我还是下属的工作绩效都产生积极影响。本研究发现，领导者才能同样有助于提升下属绩效和敬业度。

3、领导者不需伪装，但才能卓越是前提。

本研究发现，虽然领导者才能与率真在理论上都有助于提升领导效能，但综合起来却又发现，率真的效果要依赖于领导才能。才能卓越时，率真会降低交易成本，起到积极效果；但是才能欠佳时，领导者率真于事无补，甚至可能降低权威性，帮倒忙。这也印证了心理学上的出丑效应：偶尔犯错会增强一个人的受欢迎程度，但只有当别人认为这个人近乎完美时，该效应才会凑效。

康奈尔大学的经济学家罗伯特 · 弗兰克写道：“担心被别人利用的恐惧如此普遍，以至于我们常以最大的恶意揣测别人，结果带出了我们自身最丑恶的东西——为了不当傻瓜，我们会不情愿地忽略自己更高尚的本能。”事实上，人本来都不想伪装自己，因为伪装会消耗一个人的能量，但由于对自己才能、对他人善意的不信任，或受外界环境的影响，人常常不自然地寻求这种不恰当的印象管理策略，并可能在一定时间和范围内取得不错的效果。但要对有才者说：“放下伪装，保持本真，你会更优秀。”

Leaders: TO BE DISGUISED OR AUTHENTIC?

WEI Feng
Professor of Tongji SEM, Doctoral Supervisor

The reality, however, is totally different. On the one hand, authentic leaders are rarely seen while pretending and high-handed leaders are quite common in the workplace. On the other, many Chinese classics underlined the necessity of shrewdness in leaders. Sayings like "compassion does not help in enhancing authority and kindness does not make a good leader", "one should only tell 30% of his real thoughts and can never speak from the bottom of his or her heart", and "out of the mouth comes disaster" remain the bible for many people. For this reason, we cannot help but wondering: Which exactly should a leader choose, disguise or authenticity?

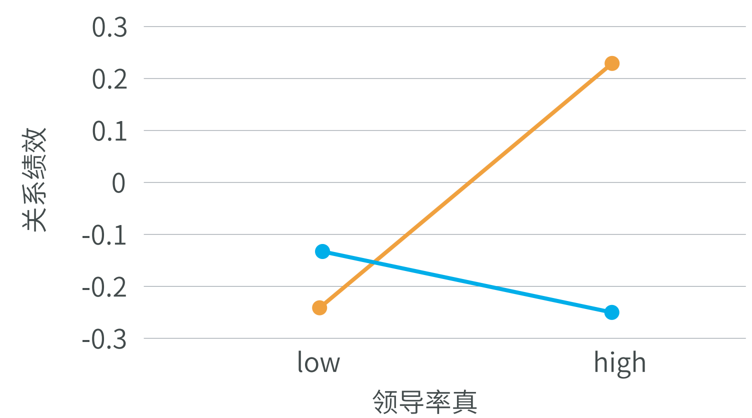
Authentic leaders have a clear idea about what their beliefs and values are, thus act accordingly by carrying out open communication with their subordinates without pretending to be someone else. When leading the subordinates, they often set themselves as examples and role models instead of using forceful coercion. It is believed that such leading pattern with positive guidance helps form a healthy leader-member relation but its impact on productivity remains unclear. As is shown by the example that Herminia Ibarra put forward in her The Authenticity Paradox, leaders' authority immediately fades away when they believe in transparency and collaboration and tell the subordinates about their fear and unsureness in management and ask for help.

Theories of Leadership Studies has been following two routes, one being studies of leadership style or behavior, the other being studies of leaders' competency. The former has produced may well-known theories like Charismatic Leadership, Transactional Leadership, Participative Leadership and Ethical Leadership. The latter has been relatively simple in theory but quite productive in practice as a number of large companies are promoting leadership competency model design, leadership competency evaluation and leadership development, and have thus effectively optimized their team abilities and improved their organizational performance. Overall, the two studies are developing in parallel with each other.

In my view, the supportive authentic leadership only works as a boost for both relationship and task performance when the leader is exceptionally competent. Otherwise, simple authenticity could harm a leader's authority and turn the leader-subordinate relationship into a harmonious but unproductive one. Based on this, we carried out a research to study authentic leadership's dependence on competency, that is, whether or not authentic leadership takes effect only when a leader's competency is high.

Recently, the concept of authenticity has been popular in Leadership Studies, which was translated into Chinese as "forthrightness and sincerity (率真)" by Harvard Business Review. In my opinion, the down-to-earth Chinese translation vividly depicts a good leader whose words and deeds fully align with his heart, and who keeps a sincere and transparent relationship with his or her subordinates. A series of researches have shown that: authentic leadership is profoundly beneficial as it effectively improves subordinates' satisfaction, engagement, trust in the leader, commitment to the organization, task performance and so on.

We distributed questionnaires to 320 pairs of subordinates and their supervisors in Shanghai. After analyzing the data from a total of 248 supervisor-subordinate valid dyads, we found that our prediction was right. We used task performance, relationship performance and work engagement as dependent variables, and similar results appeared. The results of our study are shown in the following picture.



The implications are:

1.Leaders should act as what they think and stick to their beliefs without any disguise.

Our study found that leader's authenticity may improve subordinates' performance and engagement. Since an authentic leader does not act as a "perfect leader" by pretending to know everything or hiding his or her weaknesses, he or she often chooses to speak frankly and sincerely in order to carry out cognitive and emotional communication with others. In this way, the subordinates, as their sense of self-esteem are enhanced, tend to put down unnecessary burdens when working with their leader and do their work with usual mind. It also helps to guide leaders to recognize their vulnerabilities and communicate with other in their true-self state, thus reducing the cost of communication. In the meanwhile, authentic leaders are also inclined to help their subordinates grow faster by delivering clear expectations, effective encouragement and creating development opportunities. These practices are also in line with President Xi's emphasis on the diligence and pragmatism of cadres.

2.Leaders should focus on improving their competency, that is, recognizable individual working behaviors that affect the organizational effectiveness.

Usually taking the form of skills and abilities, competency is often shown in a leader's goal setting, problem awareness, decision making, planning, work instruction, authorization, coordination, supervision, motivation and team management. The above have a positive and significant influence on the work performance of both the leader him or herself and the subordinates. As is proved by this study, just like their authenticity, leaders' competency also helps improve subordinates' work performance and engagement.

3.Under the premise of remarkable competency, leaders do not have to disguise.

Our study found that, theoretically, authenticity and competency both contribute to the promotion of leading effectiveness. However, comprehensively speaking, authenticity relies on a leader's competency to take effect. When a leader's competency is remarkable, authenticity reduces transaction cost, thus playing an active role; Otherwise, authenticity does not help the situation at all and could even do some harms including lowering the leader's authority. This implication happens to confirm the theory of Pratfall Effect in Psychology, which says that a person who accidentally makes a mistake tend to be more popular under the premise that he or she is perceived as nearly perfect.

An Economist at Cornell University named Robert Frank wrote that, the fear of being manipulated is so common that we often speculate on others with the worst malevolence, which in turn brings out the ugliest part of us. That is, in order not to be fooled, we reluctantly ignore the fact that we are actually nobler. In reality, nobody wants to disguise, because such behavior consumes a lot of energy. However, due to the lack of trust in our own ability and goodwill of others, we usually unnaturally seek this improper impression management strategy, which might take effect within a certain time and range. Nonetheless, I have to tell those competent leaders that "you will sure become even better when you put down your disguise and stay true to yourself".

石建勋：深刻理解现代化经济体系的科学内涵

建设现代化经济体系是一篇大文章，既是一个重大理论命题，更是一个重大实践课题。现代化经济体系，是由社会经济活动各个环节、各个层面、各个领域的相互关系和内在联系构成的一个有机整体。习近平总书记从七个方面全面论述了建设什么样的现代化经济体系。这些论述提出了现代化经济体系的建设目标和任务，也是对现代化经济体系丰富内涵的科学概括。

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建设创新引领、协同发展的产业体系

产业体系是经济体系生产环节中的重要内容。现代化产业体系应该是由处于全球价值链中高端、高附加值、技术和知识密集型的产业组成，具备国际市场竞争力，代表着未来产业升级和消费结构转变的方向。虽然目前我国已经建立了比较完备的产业体系，但产业体系中的人力资源、资本和技术要素有机组合的质量效益都亟待提高，人才和资本脱实向虚的趋势还没有根本逆转，技术创新和科技成果转化为生产力的周期过长、转化率还不高。解决这些问题，需要加快建设现代化产业体系，需要将实体经济作为经济建设和产业协同发展的主体，以科技创新带动产业升级，通过金融体系源源不断地为现代化经济体系供血。不断提升人力资源的素质，充分提高劳动、资本、技术三要素协同投入的质量和效率。努力实现实体经济、科技创新、现代金融、人力资源协同发展，使科技创新在实体经济发展中的贡献份额不断提高，现代金融服务实体经济的能力不断增强，人力资源支撑实体经济发展的作用不断优化。

建设统一开放、竞争有序的市场体系

现代化经济体系的核心机制是现代化的市场体系，市场体系是包含要素市场以及由要素市场衍生而来的各类市场的有机统一体。当前，我国还存在诸如市场秩序不规范、生产要素市场发展滞后、市场规则不统一、市场竞争不充分等问题。解决这些问题，必须加快建设统一开放、竞争有序的市场体系，使市场在资源配置中起决定性作用。要全面实施市场准入负面清单制度，清理废除妨碍统一市场和公平竞争的各种规定和做法。加快要素价格市场化改革，清除市场壁垒，提高资源配置效率和公平性，实现市场准入畅通、市场开放有序、市场竞争充分、市场秩序规范。加快形成企业自主经营公平竞争、消费者自由选择自主消费、商品和要素自由流动平等交换的现代市场体系。

建设体现效率、促进公平的收入分配体系

收入分配制度和体系是经济社会发展中一项带有根本性、基础性的制度安排，是建设现代化经济体系的重要基石。实现收入分配合理、社会公平正义、全体人民共同富裕是现代化经济体系对分配环节的内在要求。因此，要坚持和完善社会主义基本分配制度，初次分配和再分配都要重视效率与公平。坚持按劳分配为主体、多种分配方式并存的分配体系，更好地把按劳分配和按生产要素分配结合起来，处理好政府、企业、居民三者分配关系。要增加和保障城乡居民的财产性收入，加强对非公有制经济产权保护，加强知识产权保护，增强人民群众财产安全感。要加大政府的民生支出，推进基本公共服务均等化。要大力弘扬勤劳致富精神，激励人们通过劳动创造美好生活，推动居民收入增长和经济增长同步、劳动报酬提高和劳动生产率提高同步。要不断健全体制机制和具体政策，调整国民收入分配格局。在发展中持续增加城乡居民收入，不断扩大中等收入群体，逐步缩小收入分配差距，努力实现收入分配合理、社会公平正义、全体人民共同富裕。

建设彰显优势、协调联动的城乡区域发展体系

区域差异大、发展不平衡是我国的基本国情。1999 年以来，我国逐步形成西部开发、东北振兴、中部崛起、东部率先的区域发展总体战略。党的十八大以来，以习近平同志为核心的党中央统筹内外、着眼全局，提出建设“一带一路”倡议和京津冀协同发展、长江经济带发展战略，推动形成东西南北纵横联动发展新格局。但由于中国幅员辽阔，长期高速非均衡发展积累的各地区发展不平衡、不协调、不可持续的问题仍然比较突出。因此，必须坚持协调发展理念，实施城乡区域协调发展战略，建立更加有效的城乡区域协调发展新机制。加快实施乡村振兴战略，加大力度支持革命老区、民族地区、边疆地区、贫困地区加快发展，努力实现区域良性互动、城乡融合发展、陆海统筹整体优化。培育和发挥区域比较优势，加强区域优势互补，塑造区域协调发展新格局。

建设资源节约、环境友好的绿色发展体系

党的十八大把生态文明建设纳入“五位一体”总体布局，提出建设美丽中国的目标，并分别部署生态文明体制改革、生态文明法律制度、绿色发展的目标任务。党的十八大以来，以习近平同志为核心的党中央高度重视并大力推进生态文明建设，全党全国贯彻绿色发展理念的自觉性和主动性显著增强，生态文明建设取得显著成就。在新时代推动高质量发展，重点是遵循自然规律的可持续发展。这意味着，现代化经济体系必须是资源节约、环境友好的绿色发展体系。发展不仅要讲速度讲效益，要告别粗放型经济，走与自然和谐共处之路，更要在发展与保护、局部与整体、当前和长远之间，找到最佳平衡点。必须坚决摒弃损害甚至破坏生态环境的发展模式和做法，形成绿色发展方式和生活方式。要牢固树立绿色发展理念，坚持节约优先、保护优先、自然恢复为主的方针，形成节约资源和保护环境的空间格局、产业结构、生产方式、生活方式，还自然以宁静、和谐、美丽。努力实现绿色循环低碳发展、人与自然和谐共生，牢固树立和践行绿水青山就是金山银山理念，形成人与自然和谐发展现代化建设新格局。

建设多元平衡、安全高效的全面开放体系

开放带来进步，封闭导致落后。开放发展是国家繁荣发展的必由之路。今天的中国，已经深深地与世界紧密融合在一起，中国的发展和世界的发展互为机遇、互为条件、互相促进。

建设现代化经济体系，要牢牢把握中国经济与世界经济深度融合的趋势，贯彻落实开放发展理念，统筹国内国际两个大局，主动适应国际形势新变化，准确把握国内改革发展新要求。以“一带一路”建设为重点，坚持引进来和走出去并重，遵循共商共建共享原则，奉行互利共赢的开放战略。加快培育国际经济合作和竞争新优势，提高现代化经济体系的国际竞争力，努力发展更高层次开放型经济，推动开放朝着优化结构、拓展深度、提高效益方向转变。

建设充分发挥市场作用、更好发挥政府作用的经济体制

经济体制现代化是建设现代化经济体系的制度保障。党的十九大报告提出，着力构建市场机制有效、微观主体有活力、宏观调控有度的经济体制。这既是现代化经济体系宏观层面的建设目标，也是经济体制现代化丰富内涵的科学概括。近年来，“放管服”改革向纵深推进，有力激发和释放了市场活力。同时，宏观调控方式不断创新，实施正确的宏观经济政策，采取区间调控、定向调控、相机调控、精准调控等措施，经济运行保持在合理区间。但是，我们还要清醒地认识到，当前我国微观和宏观经济体制还有许多亟待完善和解决的问题，与建设现代化强国和现代化经济体系的要求还有不小差距。因此，必须加快建立与现代化经济体系相匹配的经济体制，对于不适应生产力发展要求的体制和机制大胆革新。要坚持社会主义市场经济的改革方向，发挥市场对资源配置的决定性作用，更好地发挥政府作用，充分激发出市场微观主体的活力，搭建好现代化经济体系的制度框架，努力实现市场机制有效、微观主体有活力、宏观调控有度。

SHI JIANXUN:

UNDERSTANDING THE PROFOUND SCIENTIFIC CONTENT OF THE MODERNECONOMIC SYSTEM

Building a modern economic system is a complicated project both theoretically and practically. A modern economic system is an organic whole composed of the relationships and interrelationships of all aspects, levels and fields in social and economic activities. General Secretary XI Jinping elaborated on the ideal modern economic system from seven perspectives. His words included the goal and task for the construction of this system as well as a scientific summary of the richness of the system.

To build an innovative, leading, coordinated industrial system

The industrial system is a significant part in the production link of an economic system. A modern industrial system should be composed of high-end, high-value-added, technology and knowledge-intensive industries in the global value chain. It is competent in the international market and represents the direction of industrial upgrading and changes in the consumption structure. Although China has already established a relatively complete industrial system, the quality and efficiency of the organic combination of human resources, capital and technical elements in the system still need to be improved, and the virtualization of talents and capital has not yet been fundamentally reversed. The transformation of technical innovation and scientific achievements into productivity still takes too long and the conversion rate is relatively low. In order to solve these problems, a few measures need to be taken into consideration. We need to speed up the construction of a modern industrial system, to take the real economy as the main body for the development of economy and coordinated industries, to promote technological upgrading through scientific and technological innovation, to continuously gather strength from the financial system, to keep improving the quality of human resources, to fully develop the quality and efficiency of the collaborative input of labor, capital, technology, to strive for a coordinated development of the real economy, technological innovation, modern finance and talent resources. With the above measures taken, we can manage to continuously increase the contribution of science and technology innovation to the development of the real economy, to improve the ability of modern finance to serve the real economy and to optimize the support of human resources to the real economy.

To build a uniform, open, competitive and orderly market system

The core mechanism of a modern economic system is the modern market system, which is an organic unity of factor markets and all other kinds of markets derived accordingly. At present, China still faces problems such as irregular market order, laggard development of factor markets, inconsistent market rules and insufficient market competition. In order to cope with these problems, we must speed up the construction of a uniform, open, competitive and orderly market system so that the market can play a decisive role in the resource allocation. We must draw up a negative list for market access, clear up and abandon various regulations and practices that hinder the unification of markets and fair competition. We must also accelerate the market-oriented reform of factor prices, remove market barriers, improve the efficiency and fairness of resource allocation, and achieve a smooth market access, an open and orderly market, sufficient market competition, uniform market order. With the above measure, we can accelerate the formation of a modern market system in which enterprises operate independently and compete fairly, customers choose freely and consume independently, commodities flow freely and exchange equally.

To build an income distribution system that reflects efficiency and promotes fairness

The system of income distribution is a fundamental and basic institutional arrangement in economic and social development and a significant cornerstone for the construction of a modern economic system. It is an inherent requirement of the modern economic system for its distribution link to realize rational distribution of income, social fairness and justice and the common prosperity of all the people. Therefore, in order to uphold and improve the basic socialist distribution system, we must attach importance to the efficiency and fairness in both primary and secondary distribution. We must also insist on the distribution system where distribution according to work is the main form and multiple forms of distribution coexist, and better integrate the distribution according to work and the distribution according to factors, and handle properly the distribution relationship between the government, enterprises and residents. We must increase and protect the property income of urban and rural residents, strengthen the protection of the property rights of non-public economy as well as property rights and increase the people's sense of property security. We have to increase our expenditure on people's livelihood and promote the equalization of basic public services. Moreover, we must strongly promote the spirit of creating wealth by diligence, and inspire people to live a better life with their own hands in order to promote the synchronization of income growth and economic growth as well as labor remuneration growth and labor productivity. We must consistently improve relevant institutional mechanisms and policies, adjust the distribution of national income, continue to increase the income of urban and rural residents in the process of development, continue to expand the middle-income groups, gradually narrow the gap of income distribution and strive to achieve a reasonable income distribution, a fair and just society and a common prosperity of all the people.

SHI Jianxun

Professor of Tongji SEM,
Doctoral Supervisor

To build an advantageous and coordinated urban-rural integrated development system

Large regional differences and unbalanced development are two of China's basic problems. Since 1999, China has gradually formed an overall regional development strategy to develop the western region, revitalize northeast China, build up the central region and give priority to the development of the eastern region. Since the Party the 18th National Congress, the Party Central Committee with Comrade XI Jinping as its core has coordinated the development of both inside and outside China with a view to the overall situation. It has proposed "The Belt and Road Initiative" and the development strategy to coordinate the development of Beijing, Tianjin and Hebei and to develop the Yangtze River Economic Belt, in order to promote the formation of a new coordinated development pattern. However, due to China's vast territory and its long-term high-speed but disproportionate development, some regions still have an unbalanced, uncoordinated and unsustainable development pattern. Therefore, we must adhere to the concept of coordinated development, implement a development strategy for the coordination of urban and rural areas, establish a more effective mechanism for the coordinated development of urban and rural areas, accelerate the pursuit of a rural vitalization strategy, make greater efforts to support the development of old revolutionary base areas, areas with concentrations of ethnic minorities, border areas, and poor areas. We must also strive to achieve a positive interaction between regions, an integrated rural-urban development, an overall optimization of land and sea resources. Moreover, we need to cultivate and bring into play the comparative advantages of different regions, to reinforce complementary advantages of regions and to shape a new development pattern of coordinated regional development.

To build a resource-saving and environment-friendly green development system

The 18th National Congress of the CPC incorporated the ecological civilization construction in to the five-in-one overall layout, proposed a goal of building a beautiful China, and went on to deploy separate objectives and tasks for the reform of ecological civilization system, ecological civilization legal system and green development. Since then, the Party Central Committee with Comrade XI Jinping as its core has given high priority to and has strongly promoted the development of ecological civilization. The whole party and the country have significantly increased their awareness and initiative in implementing the concept of green development, and thus have made remarkable achievements in the construction of it. In the new era, in order to promote high-quality development, the key point is the sustainable development following the natural laws, which means the modern economic system must be a green and resource-friendly one. Development should not only focus on speed and efficiency, but also on abandoning the extensive economy and following the path of coexistence with nature and find the balance between development and protection, the part and the whole, the near term and the long term. We must resolutely abandon the development model and practices that damage or even destroy our ecological environment and form an eco-friendly development method and lifestyle. We must firmly establish the concept of green development and adhere to the principle that lays emphasis on concertation, protection and natural restoration. We should preserve our geographical space and improve our industrial structure, way of production and way of life in the interest of conserving resources and protecting the environment. With these efforts, we can restore the serenity, harmony and beauty of nature. We must make efforts to achieve a green, circular and low-carbon growth, in order to reach a harmonious coexistence between man and nature. We must firmly establish and practice the idea that lush mountains and lucid waters are as valuable as gold and silver, in order to build a new model of modernization with humans developing in harmony with nature.

To build a comprehensively open system that is balanced, safe and efficient

Openness leads to progress, and closure backwardness. Opening up is the only way towards a prosperous and developed China. We have been deeply integrated with the world. When it comes to development, China and the world provide opportunities, conditions and promotions for each other.

To build a modern economic system, we must grasp the trend of deep integration of China's the world's economy, implement the concept of open development and make overall plans for both domestic and international situations, take the initiative to adapt to new international changes, and accurately grasp the new requirements for domestic reforms and development. With the construction of "The Belt and Road Initiative" being the key point, we must encourage both inbound and outbound investment, follow the principle of achieving shared growth through discussion and collaboration, pursue the win-win strategy of opening-up, build up our strengths for international economic cooperation and competition, and increase the international competitiveness of the modern economic system. Moreover, we must develop a higher- standard open economy, and make China's open economy become better structured, expand in scope and yield greater return.

To build an economic system that gives full play to the role of market and gives better play to the role of the government

The modernization of the economic system is a guarantee for the construction of a modern economy system. The report of the 19th National Congress stated that we should endeavor to develop an economy with more effective market mechanisms, dynamic micro-entities, and sound macro-regulation. This is not only the goal of the construction of the modern economic system, but also a scientific summary of the rich content of the modernization of the economic system. In recent years, the reforms to streamline administration, delegate more powers, improve regulation, and provide better services have been deepened, stimulating the market vitality. At the same time, new ways have been created to carry out regulations at the macro level; proper macro-economic policies have been implemented; range-based, targeted, well-timed and precise regulation have been adopted to keep the economy performing within an appropriate range. However, we must realize that there are still many problems to solve in China's micro and macroeconomic systems. There is still a long way to go before we become a modern and powerful country and establish a modern economic system. Therefore, we must speed up the establishment of a matching economic structure and bravely reform the systems and mechanisms that fail to meet the requirements for the development of productivity. We should follow the orientation of reform toward a socialist market economy and make sure that the market forces play an essential role in the allocation of resources. We must also ensure that the government plays a better role in the market. Moreover, we need to fully stimulate the vitality of the market micro mechanism, to establish an institutional framework for a modern economic system and to strive for an economy with more effective market mechanisms, dynamic micro-entities, and sound macro-regulation.

建筑行业的创新与变革

急速变革的商业社会

“一方面，在未来的商业模式当中，需求者和供给者之间密切相关，信息不对称将消失；另一方面，在生产过程和商业链条中，越不具备重要性和价值的部分越会被替代。”

IBM 每隔两年有一个针对全球 5000 多位 CEO 和一些公共部门领导者的调查，提问主要针对未来整个经济发展变化的趋势以及具有卓越竞争力的组织应具备的基本特征。有个问题是让调查者对“影响组织的外部关键因素排序”，在 2004、2006、2008 年的调查中，市场和客户都被排在前列。但在 2014 年的调查中，技术因素超越了客户和市场，排在了影响组织发展的外部因素中第一位。事实上，技术因素对所有的行业都在产生着天翻地覆的改变，它超越了客户，甚至超越了市场，成为影响企业是否发展、是否能够保持现状，甚至是否“死亡”当中的第一因素。

那么，以信息和通信技术为代表的各种技术引起的一系列变革，其发展方向会在哪里？

IBM 的调查发现，未来业绩出众的组织会出现三个特征。**一是精心打造互动客户体验**。能让客户体验式地参与到整个产品或服务的研发过程之中，也就是我们所谓的“体验经济”和个性化。在建筑业，过去之所以很难做到“客户体验式参与”，主要是每个专业技术工种都有自己的一套“专业语言”，客户根本就不懂。建筑师用的是一种表达方式，结构或机电工程师用的又是另外一种，每个“专业语言”对客户来讲看不懂，都是“对牛弹琴”。今天，信息和通信技术的发展加 BIM 技术、虚拟现实技术等都可以让客户不受专业限制。**二是产业链的各个环节进行开放性的合作**。过去的产业链上，你可以看到上游和下游之间并不互相了解，彼此就如同“黑箱子”，不能照顾到整条产业链的共同发展。而在未来，产业链的各个环节会进行开放性的合作。客户要直接参与产品的设计和研发，那么面对客户的影响，整个产业链就要求更开放、更紧密的合作。**三是在产品 / 服务的设计和生产过程中逐步走向数字化，并与实体产品和过程紧密融合**。过去造一间房子，只要把房子本身造出来就行了。现在除了交予客户物质的属性之外，还必须交给客户数字化的产品，就像一个数字档案。所有生产的过程、产品、组织、对象等等全部是数字的模拟、分析，都是数字和实体的紧密融合创新。所谓的信息化就是指产品 / 服务本身和生产过程中，信息化、数字化的含量越来越重，信息和数字所占价值也越来越大。对建筑业而言，长远来看，未来有形的实体建筑的价值是会降低的，而数据和信息的价值则会增加。如果用几个 key words 简单概括一下如今的技术突破的话，第一是技术，第二是客户，第三是合作；如果说有第四，那就是数字化。

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BIM 技术颠覆被上帝遗忘的建筑行业

“我们这个行业是一个被上帝遗忘的行业，这个行业仍然是按照 13 世纪的工作方式在从事着生产……现在由于信息和通信技术的发展，BIM 等突破性技术的出现，会让整个行业发生彻底的变革。但除了技术本身外，还需要行业环境、组织流程以及人员教育等多方面协同提升来共同推动。”

建筑行业不同于生产批量产品的制造业，每个建设项目都是独一无二的。一个建筑物通常会有二十几个工种参与其中，涉及到几百万，甚至几千万个零部件 / 构件。如果参与工程建设的各工种没有很好的信息共享和协作，就会出现误工、浪费和低效情况，同时还会产生很多的建筑垃圾和污染。很多的研究表明，建筑业是劳动生产率和效果最差的行业之一。行业落后有很多原因，但其中一个很大的原因是对技术研发的投入不够，信息化和工业化程度非常低。由于信息和通信技术的发展，尤其是 BIM 等突破性技术的出现，有可能对建筑业产生颠覆性的变革。

BIM 技术怎么会起这么大的作用？BIM 技术是用计算机语言描述，“所看即所得”使产品的每一个构件突破专业限制所有的人都看得懂，并且有数字性的参数和属性定义，可以进行优化比较分析。在整个生产过程当中，这个数字化的模型不断地被完善，不断地被充实和应用。生产结束以后，它就变成一个关于这个产品的数据库，一个知识库。BIM 的核心价值和意义，在于它能够把整个建筑产品和生产过程变成数字和实体的紧密融合，使客户广泛参与产品的设计和生产，生成的对象和过程可以实现数字化，上下游、总包和分包的合作更加紧密和透明。这就可以在建筑业逐步实现前面所说的三个变革趋势，使建筑业彻底变革成为可能。

“用过去的方法与经验来迎接未来的挑战是不可能的，唯有建立一个新的范式，才有可能发生创新与变革。”

在未来整个商业环境过程当中采用数字化信息技术控制下的智能建造系统是以满足个性化要求的信息化与工业化深度融合的过程。未来整个建筑行业大范式的变革，核心点会体现在技术因素、组织流程因素、行业环境及商业模式。如果一个行业在变革过程当中会引起技术、组织流程、整个行业政策标准以及商业模式的创新，这可能是未来整个建筑业变革过程当中需要思考的。

CREATION AND INNOVATION IN THE CONSTRUCTION INDUSTRY

WANG Guangbin
Professor of Tongji SEM, Doctoral Supervisor

A rapidly changing commercial society

"On the one hand, in the future business model, there will be a close relationship between demanders and suppliers and their information asymmetry will disappear. On the other hand, in the production process and commercial chain, those parts of less importance and value will be replaced."

Every two years, IBM conducts a survey targeting more than 5,000 CEOs and leaders of public sectors, mainly asking about their opinions on the trend of future economic development and the basic qualities of a highly competitive organization. During the survey, the respondents are asked to sort the "important external factors that influence the organization". According to the results of 2004, 2006 and 2008, the market and customers were the top two choices. However, in the survey of 2014, technical factors surpassed the market and customers, becoming the most important external factor that affect the development of an organization. In fact, technical factors are transforming every industry. It has surpassed customers and even the market, becoming the first factor that concerns whether a company is about to develop, maintain the status quo or even "die".

Then, what is the future direction of a series of changes brought about by various technologies with information and communication technologies as representatives?

IBM's survey has found that an organization with outstanding future performance often shows three characteristics. **The first is that it carefully creates an interactive customer experience.** It allows customers to participate in the R&D of the product or service, which is what we call an "experience economy" or personalization. In the construction industry, the reason why "experiential participation" was difficult to implement is that each professional and technical type of work has its own set of "professional language" which makes no sense to customers. But today, with new information and communication technologies such as BIM and VR, customers will no longer be restricted by the "language" barrier. **The second is that it cooperates openly with others in all links of its industrial chain.** In the past, the up and downstream of the industrial chain are like "black boxes" to each other which is why they are unable to help the development of the whole chain. In the future, there will be open cooperation in all aspects of the industry chain. With customers' direct participation in the process of design and R&D, a more open and close cooperation is needed in the whole industry chain. **The third is that the design and production of products/services are gradually digitalized, and closely integrated with physical products and processes.** In the past, construction is just about building a house, literally. Now, apart from the physical product, customers are given another digitalized product, just like a digital file. The whole production process, products, organizations and objects must all be digital simulations and analyses which is an integration and innovation of both physical and digital technologies. The so-called informatization means that, in the products/services themselves and their production process, the content of informatization and digitization becomes increasingly important and the value of information and data also increases. In future construction industry, the value of physical buildings will decrease and that of data and information will increase. I would like to use a few key words to briefly summarize the technological breakthrough of today: the first is technology, then customers, followed by cooperation. And if there has to be a fourth one, it would be digitization.

BIM Technology Redefines the God-forgotten Construction Industry

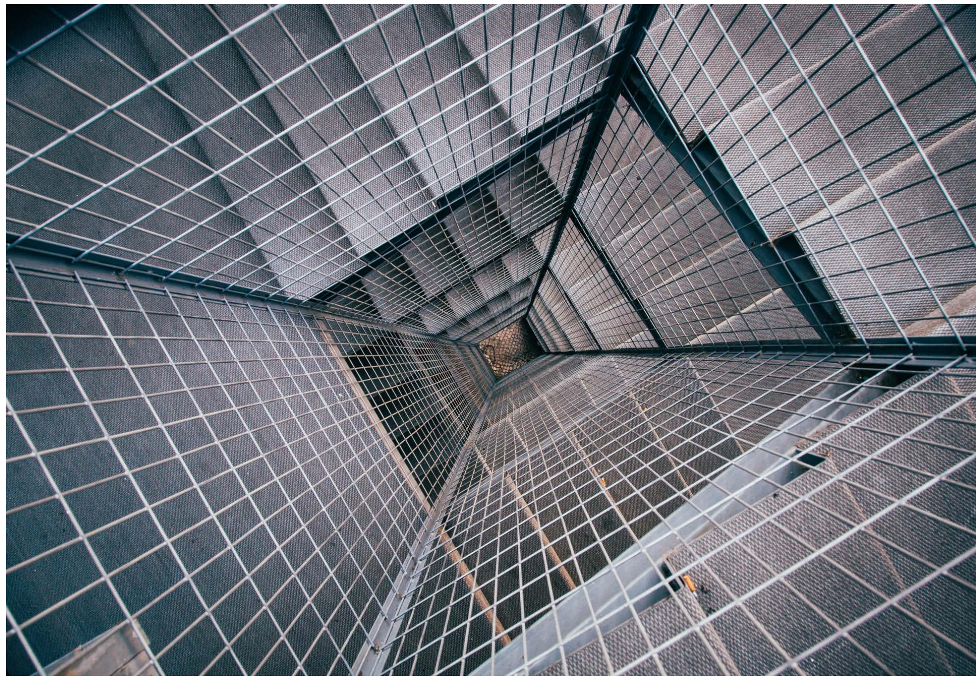
"Our industry is forgotten by God because we still follow the work pattern of the 13th century… Now, with the development of information and communication technologies, the emergence of breakthrough technologies such as BIM will revolutionize the entire industry. However, apart from technologies, it also requires the cooperation of industry environment, organizational processes and workforce education to promote the revolution."

Different from the manufacturing industry that produces products in batches, every project in the construction industry is unique. The construction of a building usually involves more than 20 types of work and millions or even tens of millions of parts/components. Without efficient information sharing and cooperation between various types of work involved, problems will emerge such as delay, waste and inefficiency. A lot of construction waste and pollution will be generated, too. It has been proved by many researches that the construction industry is one of the industries with the worst productivity and efficiency. Among various reasons for its backwardness, a major one is its insufficient investment in R&D of technologies, which has led to a very low-level industrialization and informatization. Due to the development of information and communication technologies, especially the emergence of breakthrough technologies such as BIM, the entire industry might be revolutionized.

How effective is the BIM technology? BIM, or Building Information Modeling, is to use computer language to describe every part of the product, achieving the goal of "what you see is what you get". It is understandable by everyone, even those with zero architecture-related backgrounds. Moreover, it has digital parameters and attributes, thus can be optimized, compared and analyzed. During the process of production, this digital model can be refined, enriched and applied continuously. After production, it becomes a database or a knowledge base of this product. The core value and significance of BIM is shown in its ability to turn the construction product and production process into a close integration of data and physical products. In this way, customers are enabled to participate in the design and production of products, which can be digitized, and the cooperation of upstream and downstream, contracting and subcontracting subjects can be more close and transparent. This proves BIM's ability to gradually realize the three transformation trends mentioned above, making it possible to implement a revolution in the construction industry.

It is impossible to cope with future challenges with old methods or experiences. Only by establishing a new paradigm can innovation and creation become a possibility.

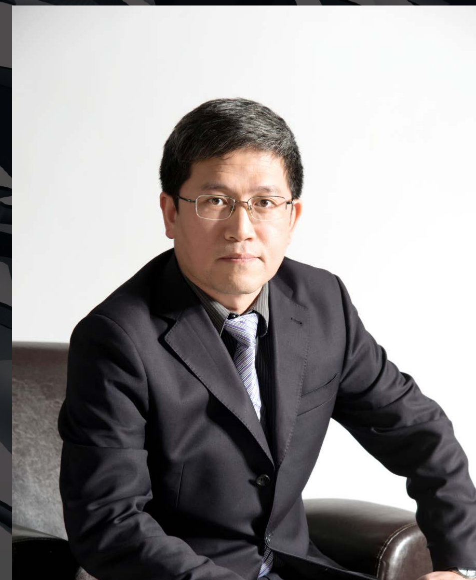
In the future commercial environment, the intelligent building system, under the control of digital information technologies, is a process of deep integration of informatization and industrialization that meets the requirement of personalization. Such revolution of the entire paradigm will focus on technology, organizational process, industry environment and business model. If a revolution of an industry will lead to innovations in its technologies, organizational process, policies and standards of the whole industry as well as its business models, serious thinking is in need when the revolution actually happens.



少即是多

减少过度耗费 提高设备效率

作者：苏强 等



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设备综合效率（OEE）是生产制造企业运营效率的关键指标，其计算方式为三个 OEE 因子相乘，即：可用率、效率和质量水平。可用率反映设备的停机时间，效率体现未达到最大速度的生产时间，质量水平反映没有满足质量要求的产品。具体计算方式如下：

可用率 =（计划生产时间 – 停机时间）/ 计划生产时间
效率 =（生产标准时间 x 生产数量）/ 开动时间
质量水平 = 合格品数量 / 生产数量

1982 年，Seiichi Nakajima 首次将 OEE 作为其全员生产维护（TPM）的重要组成部分。作为一个关键指标，OEE 不仅能够帮助组织关注 TPM 流程中的薄弱环节，并且能综合显示所有的相关操作因素。影响 OEE 的因素包括人员、机器、材料、方法、测量和环境。

Christopher J 和他的研究伙伴曾表示，只有在适当的生产测量系统下，比如日本丰田首先采用的精益生产管理，才能实现生产效率的提高，而 OEE 恰好是精益生产管理中的一项精益指标。

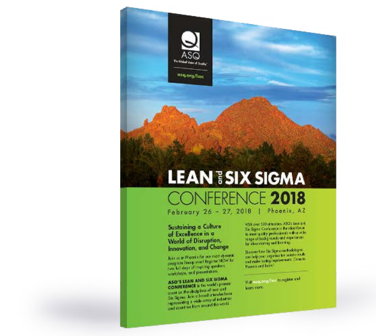
传统意义上来看，如果某一组织遇到了产能上的瓶颈，为了提高生产力，它的第一反应势必是增加更多的生产班次，鼓励在岗员工加班，并购买新的生产设备。而现在，越来越多的组织正在关注其现有生产系统的使用效率以及该如何提高效率。因此，OEE 被普遍作为生产的关键指标来评估各个企业的运营系统效率和提高 OEE 水平。

汽车行业的全球 OEE 基准为 85%。为了达到这个数值，行业内各组织都在努力提高其 OEE 水平。例如，上海高齐汽车配件有限公司（简称“上海高齐”）就使用了帕累托图、鱼骨图、快速换模技术（SMED）和人机分析等分析工具来系统化地研究其 OEE 水平，并因此采取了一系列改进措施，最终使他们的目标机器 OEE 水平从 71.4% 提升至 85.5%。

上海高齐的 OEE 水平

上海高齐是一家私营公司，为通用汽车、大众、日产、马自达、长城和上汽等汽车整车制造商生产注塑件、换挡器球头和仪表盘面板。该公司超过 50% 的利润都来自于其换挡器球头产品，因此，改进换挡器球头生产的 OEE 水平势在必行。

换挡器球头有金属连接器、核心支架、球头支架、皮革和其他外饰件组成，其工艺流程中的三个步骤和 OEE 水平密切相关——铸造核心支架、铸造球形支架以及切割皮革。另外，在测量每个步骤的生产标准时间后，该公司发现，铸造球形支架的时间最长，为 25.3 秒，这一步骤显然是整个生产过程的瓶颈。为了从根本上解决这一问题，我们详细研究了生产球形支架的 A012 注塑机的生产过程。机器 A012 的 OEE 水平及其 6 个月内的可用率、效率和质量水平情况见下图。



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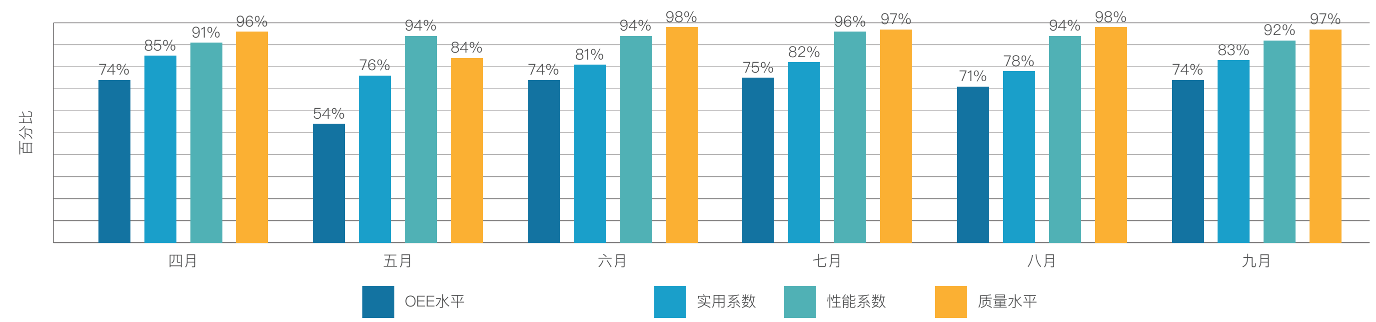
A012 注塑机半年内的设备综合效率 (OEE)



OEE 的影响因素

基于可用率、效率和质量水平，我们可以总结出 OEE 中的新旧六大损失（见下表）。我们还对 A012 注塑机的 OEE 水平进行了相应的分析，以期进一步提高 OEE 水平。

设备综合效率 (OEE)	推荐的新六大损失	传统六大损失
可 用 率 损 失	意外停机	设备故障
	计划停机	换装和调试
效 率 损 失	短暂停顿	空闲和瞬停
	生产周期缓慢	速度降低
质 量 损 失	生产过程不良	工艺缺陷
	开机不良	降低的合格率
O E E	总生产运行时间	有效操作时间

可用率损失：根据操作记录绘制的 A012 注塑机停机时间的帕累托图，停机时间的主要损失有——加热和冷却、换型、模具维护以及设备维护和调试工作等。为了找到这些损失的根本原因，我们绘制了三幅石川图。

效率损失：6 个月内，A012 注塑机的性能水平在 91% 到 96% 之间浮动。

质量损失：通过统计每月的质量记录，我们构建了一张帕累托图，描述了具体的失效模式，

通过石川鱼骨图的分析，最终找到了 6 个常见的失效原因：

+ 计划方法不当。
+ 转换方法不精益。
+ 流程和布局不利于操作。
+ 设置和调整工作出现错误或不标准。
+ 操作、规划或技术人员缺乏培训。
+ 生产过程不稳定。

在制定生产计划时考虑温度因素

注塑机工艺的一个典型特征就是温度变化频繁。在过去 6 个月累计 122 小时的停机时间中，加热和冷却过程产生的可用率损失占总损失的 21%。6 个月内，用于 A012 注塑机生产的材料有 51 种，模具 88 种。这些材料需要在 34 个不同的温度下工作才能达到最佳效果，但 A012 的生产计划并未考虑温度因素，因此产生了温度转换时间过长的问题。历史数据显示，有两次换型之间的最大温差达到了 300°，其中，第一次换型时温度上升 150°，第二次换型时温度下降 150°。

通过重新调整生产计划，加热和冷却的停机时间显著缩短，总温差从 2919° C 降至 1598° C。由于冷却时间包含在换型时间内，所以无法在此阶段节省时间。但不论如何，该公司仅仅通过缩短加热时间就节省了 36.1 小时，即：用于加热的时间减少了 29.6%（或总停机时间减少了 6.2%）。

因此，只要根据不同材料的加热时间重新安排生产顺序，就能有效减少加热和冷却所消耗的停机时间。这一措施既不会增加生产成本，也不会消耗更多资源，是提高 OEE 水平的良好办法。

在转换管理中运用 SMED 技术

我们通过仔细的现场考察和分析，发现上海高齐尽管有换型操作的指导书，但它并未区分内部和外部换型，这在换型过程中造成了大量不必要的停机时间。

于是，我们应用了 SMED 技术来改进该公司的换型过程并节约成本。具体改进步骤如下：

+ 改进前：**内外部换型没有区分。**
+ 阶段一：**区分内外部换型工作。**
+ 阶段二：**错开内外部换型工作。**
+ 阶段三：**改进所有基本换型操作。**

根据 Shigeo Shingo 的研究，换型工作有内外部之分。在情况允许时，应尽量将内部换型操作转化为外部换型操作，因为这样就可以提前进行准备工作。同时，为了进一步缩短换型时间，应尽可能将内外部操作同时进行。

根据上述 SMED 原则，我们重新整理了上海高齐换型过程中的工作分解结构。经调整，换型过程消耗的停机时间由最初的 861 秒减少到了 498 秒。也就是说，换型时间减少了 42%，A012 注塑机的总停机时间节省了 8%。

重新设计流程和布局

上海高齐用于生产核心支架和球形支架的注塑机分别为 A011 和 A012，每台机器由一名操作员负责。为了进一步研究此环节的性能表现，我们在两台机器上都进行了人机分析。

经分析，两名操作员对 A011、A012 的使用率分别为 32% 和 33%，造成如此低的使用率的原因在于模制过程中的等待时间过长。

A011 注塑机用于模制的生产周期为 75 秒，操作员的等待时间为 50 秒（包括机器注塑和冷却过程）。

A012注塑机的总生产周期为95秒，操作员的等待时间为65秒（包括机器注塑、冷却和另外 15 秒的半成品预热时间）。

在 15 秒的半成品预热过程中，操作员和机器都处于空闲状态，这显然是浪费。

为了提高机器和操作员的工作效率，我们将三对机器面对面放置，让一名操作员同时操作两台机器。在这种改进下，我们重新计算了包括生产两种适配器在内的整个过程的生产标准时间。

这种全新的布局使核心支架的注塑过程提前了 20 秒，先于球形支架。如此一来，只需要一名操作员，就可以将等待时间从 115 秒（布局未调整时，A011 的等待时间为 50 秒，A012 的等待时间为 65 秒）缩短至 25 秒。操作员的工作效率从 32% 提升至 75%。另外，由于减少了等待半成品预热的时间，A012 注塑机的使用效率从 63% 上升到 75%。

此外，两种适配器的生产周期从 170 秒（布局未调整时，A011 的生产周期为 75 秒，A012 的生产周期为 95 秒）减少至 80 秒。

整体改进

综上所述，A012 注塑机的可用率由 80.8% 提升至 83.5%，效率由 93% 提高到 107.7%。即便质量水平保持不变，A012 注塑机的 OEE 总水平也能从 71.4% 上升至 85.5%。本次工作虽然针对 A012 注塑机，但以上改进措施和测量方法，可轻松运用于其他生产线的不同机器。

A012 注塑机的可用率

80.8% ↗ 83.5%

A012 注塑机的效率

93% ↗ 107.7%

A012 注塑机的 OEE 总水平

71.4% ↗ 85.5%

LESS IS MORE

SU Qiang
Professor of Tongji SEM, Doctoral Supervisor

ENHANCE EQUIPMENT EFFECTIVENESS BY CUTTING EXCESS WASTE

Author: SU Qiang etc.

Overall equipment effectiveness (OEE) is a key indicator of a manufacturing organization's operating efficiency. It is calculated by multiplying the three OEE factors: availability, performance and quality. Availability accounts for the time during which process isn't running. Performance accounts for the time during which the process is running slower than its top speed. Quality accounts for manufactured parts that don't meet quality standards. They are calculated as:

Availability = (Planned production time – stop time) / planned production time.

Performance = (Ideal cycle time x total count) / run time.

Quality = Good count / total count.

The term OEE was first used by Seiichi Nakajima in 1982 as a key component of his total productive maintenance (TPM) system. As a key metric, OEE can help an organization maintain focus on the weak points of its TPM process and is a comprehensive indicator that shows all related factors of an operation. Factors influenced by OEE include man, machine, material, method, measurement and environment.

Christopher J et al. claimed that successful manufacturing improvement can happen only if an appropriate production measurement system is implemented, such as lean production management, which originated at Toyota in Japan. OEE is one of the lean indicators in lean production management.

Traditionally, if an organization encounters capacity constraints, its first counteraction is to add more manpower for new shifts, allow overtime for existing workers and invest in new production facilities to boost its production capacity. Today, however, an increasing number of organizations are paying attention to the use rate of their existing production systems and how to enhance their efficiency. Thus, more and more organizations are using OEE as an essential key performance indicator to evaluate the efficiency of their operation systems and enhance their OEE level.

In the automotive industry, the worldwide OEE benchmark is 85%. Many organizations strive to improve their OEE performance to reach this target. One such organization—Shanghai Gaoqi Automotive Components Co. Ltd. ("Shanghai Gaoqi")—used analysis tools such as Pareto charts, fishbone diagrams, single-minute exchange of die (SMED) and man-machine analysis to systematically study its OEE performance. A series of improvement measurements were derived and the OEE level of Shanghai Gaoqi's target machine was enhanced from 71.4% to 85.5%.

Original published on Quality Progress, February 26-27 2018, originally titled 'less is more'

Shanghai Gaoqi's OEE performance

Shanghai Gaoqi is a private organization that produces injection molding parts and makes gear shifter knob systems and dashboard panels for original equipment manufacturers such as General Motors, Volkswagen, Nissan, Mazda, Great Wall and SAIC. Because more than 50% of Shanghai Gaoqi's profits come from its knob systems, the OEE improvement of the knob system's production was imperative.

The knob system is comprised of a metal connector, core adaptor, ball adaptor, and leather and other exterior trims. In the process flow of knob system production, three steps—core adapter molding, ball adapter molding and leather cutting—relate to OEE performance. Furthermore, the cycle times of each step were measured, and it was determined that the cycle time of the ball adapter molding step was the longest at 25.3 seconds, indicating this step was the bottleneck of the knob system production process. To get to the root of the problem, the machine dedicated to ball adaptor injection molding—machine A012—was explored in detail. Figure 1 illustrates machine A012's OEE levels and the corresponding availability, performance and quality levels during the six months it was observed.

Influence factors of OEE

Based on availability, performance and quality those three factors, six OEE losses (Table 1) can be summarized to facilitate the root cause analysis and enhancement of OEE. The six OEE losses were analyzed systematically for machine A012.

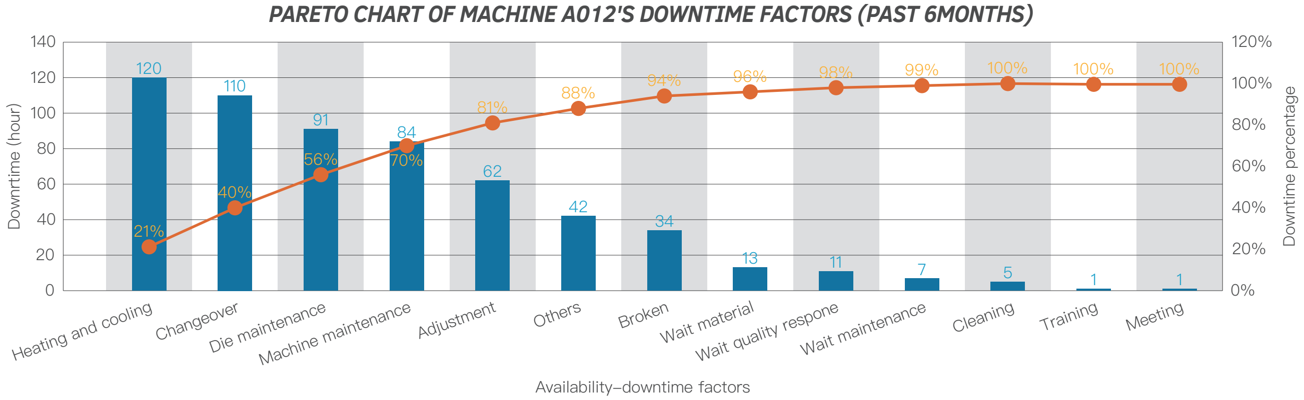
Availability loss. Based on the operations records, a Pareto chart of machine A012's downtime was created (Figure 2). The major losses of downtime were heating and cooling, changeover, die maintenance, machine maintenance and adjustment. To find the root causes of these losses, three Ishikawa diagrams were created.

Performance loss. The performance level of machine A012 ranged from 91% to 96% during the six months it was observed.

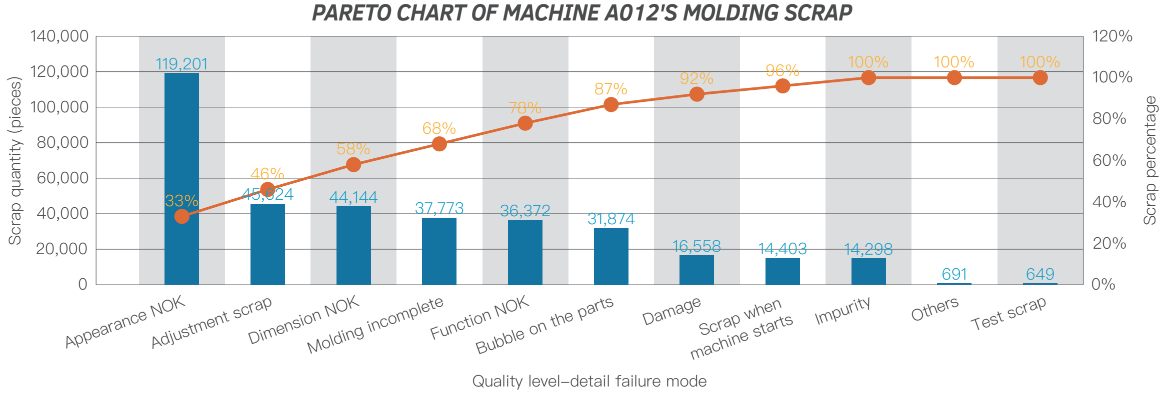
Quality loss. With the statistics of the monthly quality records, a Pareto chart of the detailed failure modes was constructed (Figure 3). Six common root causes appeared:

+ Planning method is improper.
+ Changeover method is not lean.
+ Process and layout are not good for operation.
+ Setup and adjustment work instructions are wrong or not standard.
+ Operator, planner or technician lack training.
+ Process not stable

PARETO CHART OF MACHINE A012'S DOWNTIME FACTORS (PAST 6MONTHS)



PARETO CHART OF MACHINE A012'S MOLDING SCRAP



Considering temperature during the planning process

Increasing and decreasing temperature is a typical characteristic of an injection molding process. In Figure 2, a cumulative 122 hours of downtime is attributed to the heating and cooling process, which accounts for 21% of the total availability loss. In the six months recorded, 51 different materials and 88 different dies were used in machine A012. These materials must be processed at 34 different temperatures, but the production plan did not consider temperature. As a result, long changeover times were required for heating or cooling to a different temperature. The historical data showed that the biggest temperature gap reached 300° between two changeovers. The temperature increased 150° during the first changeover and decreased 150° to the original temperature during the second changeover.

By rearranging the production plan, the heating and cooling downtime was shortened considerably, and the total temperature gap decreased from 3,919°C to 1,598°C. Because cooling time was included in changeover time, it doesn't contribute to the time savings. Regardless, the organization still achieved a 36.1-hour time savings by taking just the heating time into consideration, which is equivalent to a 29.6% savings of heating time (or a 6.2% decrease of total downtime).

Thus, reordering closing temperature material was a good way to cut the downtime for heating and cooling processes without adding to production costs or resources, and it's an efficient approach to improving OEE.

Applying SMED on changeover management

Through careful on-site analysis, it was discovered that although Shanghai Gaoqi had work instructions to guide changeover operations, the instructions did not differentiate between internal and external setups, which caused a lot of unnecessary downtime during changeovers.

The SMED approach was applied to improve the changeover process and save costs. The SMED improvement steps are:

+ Preliminary: Internal and external setups not differentiated.
+ Stage one: Separate internal and external setups.
+ Stage two: Stagger internal and external setups.
+ Stage three: Improve all elemental operations.

According to Shigeo Shingo, operations should be separated into internal and external operations. If possible, internal operations should be transferred to external operations, which can be prepared in advance. Meanwhile, to further cut down changeover time, as many internal operations should be conducted simultaneously as possible.

Using the above SMED principles, the work breakdown structure of the changeover process at Shanghai Gaoqi was rearranged. Compared with the original 861 seconds of downtime, the improved changeover process needed only 498 seconds of downtime. In other words, the changeover time decreased 42%. This time savings contributed 8% to the total downtime savings of machine A012.

Redesigning the process and layout

At Shanghai Gaoqi, core adaptor molding and ball adaptor molding are machines A011 and A012, respectively. Each machine is operated by one operator. To further study the performance of this process, the man-machine analysis was conducted on both machines.

Through the man-machine analysis, the operators' use of machines A011 and A012 were identified to be 32% and 33%, respectively. These low use levels were caused by long wait times during the molding process while the machine was running.

+ For machine A011, the total cycle time of the molding process was 75 seconds and the operator's wait time was 50 seconds (during the machine injection process and cooldown process).

+ For machine A012, total cycle time was 95 seconds and the operator's wait time was 65 seconds (during the machine injection process, cooldown process and an additional 15 seconds for warming up the semi-finished product manufactured in machine A011).

During the 15 seconds of semi-finished product warmup, man and machine were idle—an obvious waste.

To increase operator and machine use, three pairs of machines were arranged face to face so only one operator was needed to operate two of the machines. The standard cycle time of the entire process, including core adaptor molding and ball adaptor molding, was recalculated considering the improved cooperation between man and machine.

This new layout allowed the core adaptor molding process to start 20 seconds sooner, followed by the ball adaptor molding process. This reduced the wait time from 115 seconds (the 50-second wait time for machine A011 and the 65-second wait time for machine A012 in the original layout) to only 25 seconds with a single operator. The operator use increased from 32% to 75%. Moreover, the use of machine A012 also increased from 63% to 75%, which attributed to the reduction of idle time waiting for the semi-finished product to warm up.

In addition, the cycle times to produce the core adaptor and ball adaptor were reduced from 170 seconds (the 75-second cycle time of machine A011 and the 95-second wait time for machine A012 in the original layout) to 100 seconds. The cycle time of machine A012 was reduced from 95 seconds to 80 seconds.

Overall improvement

Integrating the above measurements, machine A012's availability increased from 80.8% to 83.5% and its performance increased from 93% to 107.7%. As a result, even if the level of quality is kept the same, the total OEE of machine A012 increased from 71.4% to 85.5%. Although the work is dedicated to the OEE of machine A012, these approaches and measurements can be easily applied to other machines or different production lines.

Machine A012'S Availability

80.8% ↗ 83.5%

Machine A012'S Performance

93% ↗ 107.7%

Total Oee Of Machine A012

71.4% ↗ 85.5%

“组织越敏捷，越人性化，
我们就必须像人类学家一样了解更多。”

Christiane Prange
同济大学经济与管理学院教授

中国的敏捷管理 ——
游走于传统文化和全球竞争之间

当前经济环境日趋复杂，时刻面临行为技能提升挑战的组织及个人都必须变得更加敏捷。敏捷并非没有目的自组织和自由，相反，它是基于一定的准则和框架，这些准则和框架提供了必要的稳定性，从而保证组织探索更多可能并为未来变革做好准备。

组织的敏捷能力是对难以预测到的市场需求变化快速做出有效反应的能力。在高度复杂的环境背景下，管理者也要意识到将变革融入组织的重要性。

敏捷管理是应对当保守策略未能达到预期结果的一种解决方式。由于不同文化间的意识形态存在差异，个体在社会中的作用、等级关系及沟通过程等也就不尽相同。中国就是一个典型例子，其文化价值和变革路径的突破性变化存在着割裂之痛。通常，敏捷立在自组织、经验、对失败的容忍和个人责任感之上，而这似乎与等级分明的集体主义社会是矛盾的。因此，敏捷管理在中国能否发挥以及如何发挥作用是一个问题。

中国广告业与敏捷性需求

敏捷意味着更高速地适应变化，但这种变化不是变革，而是一种渐进的变化。这就要求公司对自我核心（即公司的 DNA）充满信心。遗憾的是，广告行业中的许多公司没有这种自信。一方面，广告公司需要有方向感，需要有对好主题的敏感性；另一方面，公司还需要有良好的财务机制，一个能激励敏捷的框架。如果公司对自我内核没有自信，就会在行业中失去一席之地。

实现敏捷和公司结构也是相关的。关键的工作环节需要有相互协作，比如在创作广告概念及后续执行的特定阶段中，员工聚在一起会掌握和收集到更多信息，这是需要结构来支持的。在高度结构化的环境中，敏捷领导有两方面内容，一是如何实现西方文化向东方文化的调整并搭建起沟通的桥梁。这是一种软的、高度个性化的元素。同时还存在另一个高度个性化但更加基础的元素——产业重心，我们如何适应它？

结构化组织与领导效能能否匹配，取决于对消费者而言该品牌扮演什么角色。品牌的生命力是持续创新的根本源泉。为了提升品牌形象、提高顾客忠诚度，公司需要有力的领导和沟通，需要有适度的复杂性。

中国的敏捷领导者—框架中的自由

广告行业中敏捷领导者需要三样东西。一是横向思维。横向思维不仅仅是创造理念和品牌策略，还涉及观察到各部分之间的内在联系。二是这些领导者必须是天生的领导者。也就是那些有自信去说服别人，同时也能鼓励和推动自己的人。三是这些领导者周围的人要多样，领导者需要接受并欢迎这种不同。

和传统领导者相同，敏捷领导者也需要一个自上而下定义规则的结构框架，以免陷入混乱。但框架之下还需要给员工赋权，让员工迎接挑战和表现自我。在亚洲，员工厌恶风险且不愿意丢面子，所以更加需要对组织及工作的信念和领导积极的认可。

长期以来，整个亚洲都存在着等级制度，中国社会拥有等级观念的同时还野心勃勃。领导者必须展示自己未来的工作方向，但他们对未知也有恐惧。这就是亚洲几乎没有创新的原因，也是惊人价格战存在的原因。

中国人的思维模式及敏捷的内涵

中国人的思维模式在传统与现代的价值观之间不断变化，这种现象在不同行业之间会有所不同。广告业作为一个创造性的产业，人们通常认为它更有激情，然而，人们不愿意去挑战固有惯例，这限制了创造力。战略产业则不同，他们会加强中央机构家长式领导的权力和责任。像微信这样的门户网站以及通常的广告业，一定意义上说是非战略性的，员工有更多的自由进行尝试。

中国公司必须变得更为敏捷。市场竞争环境变化剧烈，商业模式越发新颖，甚至某些受政策保护的传统工业也面临变革的需求。如何判断公司是否具有敏捷性？通常会判断其是否具有远见。谷歌是敏捷的，它的交互性让世界变得更近；苹果也是敏捷的，它用技术让世界更加人性化。那么，中国公司在哪方面可以实现敏捷？“中国制造”向“中国创造”的转变势在必行。

速度，变化和对创新的追求

如果缺乏指导、目的和方向，实现敏捷的路途将变得迷茫。敏捷是“框架之内的演变”。为了变得敏捷，中国领导者需要依靠稳定的框架和一套不变的核心要素，以维护公司在社会中的地位。在稳定框架的保障下，领导者可以进行尝试和调整来适应变化的环境。管理者所要面对的挑战就是平衡灵活性与稳定性，这种平衡通常通过品牌来传播。

在中国，变革也要面临文化观念的挑战。尽管机械化的组织结构对敏捷的实现有所限制，但废除这种结构并非解决方法。仅仅是结构的改变并不会自动地获得敏捷的工作流程，还需要领导和思维方式的相应转变。不同的领导会诱发敏捷，从组织内部的控制到组织变革的催化。敏捷的思维方式主要关注合作和互动，比如：人文因素。

敏捷组织的实现需要成功的行为准则以及员工工作中的团结。在中国，行为准则受传统意识形态、文化和个人社会地位的影响。中国文化导致了一些等级制度下的意识，包括失败规避，这会给应用敏捷思维造成障碍。然而，并不是说中国公司不是敏捷的。敏捷在不同背景下有着不同的基本面。带着毫不妥协的思维去进行敏捷化只能是徒劳，将敏捷定义为秩序内的演化则更为人性化，也更行得通，至少在儒家社会是如此。

AGILE MANAGEMENT IN CHINA—

Wandering Between Traditional Chinese Culture and the Global Competition

"The more agile and humane an organization is, the more we need to study it like anthropologists".

Christiane Prange
Professor of Tongji SEM

In an increasingly complex economic environment, any organization or individual who constantly faces the challenge to improve its skills and behaviors must become more agile. Agility is not without purpose and absolutely free. It is based on certain criteria and frameworks, which increase a company's stability to be able to explore more possibilities while being well-prepared for future changes.

An agile organization is one that is capable of responding rapidly to unpredictable changes in market demand. Even in a highly complex environment, its manager is still able to realize the importance of integrate reforms into his or her organization.

Agile management is a solution to the problem where a conservative strategy fails to achieve its expected result. Due to the diversity in ideologies of different cultures, the roles, hierarchies, the processes of communication of social beings are bound to differ. China, as an example, has been suffering from its lack of breakthrough in reforming the development of its cultural value. Usually, agility is based on self-organization, experience, tolerance for failure and personal responsibility, which seem to be in conflict with a hierarchical and collectivistic society. Therefore, it remains unclear if agile management is going to work in China.

Demand for agility in China's advertising industry

Being agile means a faster adaptation to gradual changes, not radical ones. This requires the company to be confident in its core self (or the company's DNA). Unfortunately, it is something many companies in the advertising industry do not have. On the one hand, advertising companies must have a sense of direction and the sensitivity to good topics. On the other hand, they also need a good financial mechanism to act as a framework that can stimulate agility. If failing to do so, the company will lose its place in the industry.

A company's structure has to do with its agility, too. Cooperation must be included in those key links of work. For example, during the creation of an advertising concept and its subsequent execution, employees need to rely on a good structure to work together and gather more information. In a highly structured environment, an agile leader has two tasks. One task is to adjust Western culture in an Eastern culture and to build a bridge between them, which is both soft and highly personalized. The other is the adaptation to the changes of industry gravity center, which is still highly personalized but more basic.

Whether or not a structured organization can match its leadership effectiveness is dependent on what role the brand plays in its customers' eyes. The vitality of a brand is the fundamental engine for continuous innovation. In order to enhance its image and improve its customers' loyalty, a company needs a strong leadership and an effective communication which require moderate complexity.

China's agile leaders—freedom within the framework

Three conditions are necessary for an agile leader in the advertising industry. The first one is lateral thinking, which is not just about creating ideas and brand strategies, but also about observing the intrinsic links in between. The second is that they must be natural leaders, that is, those who have the confidence to convince others are able to encourage and push themselves. The last one is that these leaders must be surrounded by different types of people and they must accept and welcome such diversity.

Like those traditional leaders, agile leaders also need a top-down structural framework to define rules in order to avoid disorder. However, within this framework, the leaders have to empower their employees to deal with challenges and express themselves. In Asia where employees are often risk-averse and face-saving, leaders should give them more recognition as well as more confidence in both their organization and work.

For a long period of time, there has been a hierarchical system throughout Asia. China is both hierarchical and ambitious. In such a context, leaders must demonstrate the direction of their future work, even if they have fear for the unknown. This is actually why innovation is almost inexistent in Asia but the terrible price war is not.

The Chinese thinking model and the implication of agility

The Chinese thinking model constantly changes between traditional and modern values, but this phenomenon may differ from industry to industry. The advertising industry, as a creative one, is often considered as very passionate. However, its creativity is limited when people are reluctant to challenge its inherent practices. The case is different with strategic industries where the power and responsibility of paternalistic leadership in the central office are strengthened. However, the general advertising industry and web portals like Wechat are, in a sense, non-strategic, so their employees have more freedom to take their chances.

Chinese companies have to be more agile. The competitive environment in the market has been changing dramatically, business models more novel. Moreover, even some traditional industries protected by policies have also started to change. How do we tell if a company is agile or not? The answer is its foresight. Google is agile since its interactivity makes the world smaller; Apple is agile as it uses technology to make the world more humane. Then, how can Chinese companies achieve agility? It has to be the transformation of "made in China" to "created in China"

Speed, changes and the pursuit of innovation

Without guidance, purpose and direction, the path to agility will be both vast and hazy. Agility is "the evolution within the framework". In order to become agile, Chinese leaders need to rely on a stable framework and a set of fixed core elements to maintain the company's position in the society. With the guarantee of a stable framework, leaders can try and adjust to the changing environment. The challenge for managers is to keep a balance between flexibility and stability, which is usually spread through brands.

In China, changes will collide with the challenges of people's traditional cultural concepts. Although the mechanized organizational structure limits the implementation of agility, abolishing such structure is by no means an appropriate solution. The structural change by itself do not automatically result in an agile work flow, which is why a corresponding shift in leadership and thinking patterns is needed. Different leaders will induce agility in different links, from the control within the organization to the stimulation of organizational reform. An agile thinking mainly focuses on cooperation and interaction, such as human factors.

The construction of an agile organization needs help from a successful code of conduct as well as cooperation of the employees in their work. In China, the code of personal conduct is influenced by traditional ideology, culture and personal social status. The Chinese culture has produced some thinking bred by its hierarchical system, including avoidance of failures which impedes the application of agile thinking. However, that is not to say that Chinese companies are not agile, since agility has different fundamentals in different contexts. While pursuing agility with an uncompromising thinking can only be in vain, defining agility as the evolution within the framework is much more humane and workable, at least in this Confucian society.

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霍佳震出任实验室主任

搭建行业标准及技术评估系统 实行动态监测

“智能投顾”是最近两年才兴起的金融服务新业态，其核心是智能化的投资决策和资产配置。智能投顾的诞生，使得被传统金融机构忽视的“大众客群”也有机会享受到个性化的资产配置服务，让投资简单，快乐，普及。这是一个前景广阔的“长尾市场”。

2018 年是智能投顾在我国金融业的普及年，逐步成为金融机构提供个性化金融服务的主流功能。然而，智能投顾在我国仍处于发展初期阶段，受到很多现实因素的掣肘。同济大学智能投顾实验室应运而生，对规范市场行为、深化行业布局发挥着巨大作用，有利于推动科技金融的前沿性创新与发展。

同济大学智能投顾实验室依托于同济大学中国科技管理研究院的研究与学术支持，加之羽时金融的技术成果，为行业提供了行业标准及技术评估系统和动态监测体系。

作为第三方智库平台，同济大学智能投顾实验室会对行业进行评估监测，对智能投顾技术服务商进行评估和动态监测，面向全社会定期发布智能投顾行业白皮书和评估监测报告等。同时，也为金融机构定制化智能投顾系统提供整体解决方案和系统集成服务方案设计，开展智能投顾领域的职业和技术培训等。

汇聚行业顶尖人才 搭建智库平台

同济大学智能投顾实验室汇聚了行业内权威专家：中国工程院院士、同济大学副校长、国务院政府特殊津贴专家、德国工程院院士、瑞典皇家工程科学院院士吴志强出任实验室总顾问；同济大学中国科技管理研究院常务副院长、德国 BOSCH 公司教席教授、国务院特殊津贴专家霍佳震出任实验室主任；国内首位人工智能投资决策系统的奠基者、将量化投资理念和投资方法引入中国市场第一位投资总监、被中证报誉为“中国量化投资领域的领军者”、羽时金融董事长李延刚出任实验室副主任。

同济大学智能投顾实验室主任霍佳震在成立仪式上表示：实验室今后将从事智能投顾领域的产学研合作。智能投顾实验室的专家委员会将汇聚政府、高校、金融机构以及科技企业的高级科研人员、专家学者、高管，集国内智能投顾领域各个方面的顶级科技人才，成为国内该领域首屈一指的智库平台。

目前，同济大学经济与管理学院顺利通过 AACSB、EQUIS、AMBA 和 CAMEA 等权威认证。羽时金融团队专注于金融科技领域的人工智能投资技术和应用技术开发，是国内首屈一指的人工智能投资决策系统和智能投顾服务平台解决方案的金融科技公司。二者携手合作，我国的智能投顾领域或将迎来崭新的发展格局。

TONGJI UNIVERSITY AND YUSHI FINANCING

CO-FOUNDED THE FIRST NATIONAL INTELLIGENT INVESTMENT ADVICE LABORATORY

On May 23, Tongji Intelligent Investment Advice Laboratory (TJIIAL) was co-founded by Chinese Academy of Science & Technology Management of Tongji University and Shanghai Yushi Internet Financing Information Service Co., Ltd. (herein referred to as Yushi Financing).

To Form an Industry Standard and a Technology Evaluation System and to Implement Dynamic Monitoring

"Intelligent Investment Advice (IIA)" is a new type of financial service emerged only two years ago, with its core value being providing intelligent investment decisions and asset allocation. Since the advent of IIA, "public customers" which have been overlooked by traditional financial institutions are given access to personalized asset allocation services and easy, happy and popular investment activities. This is indeed a promising "Long Tail Market".

The year of 2018 witnesses the popularization of IIA in China's financial industry. In this year, IIA has become a mainstream personalized financial service provided by financial institutions. However, it is still in its primary stage of development and is thus constrained by many practical factors. In such a context, TJIIAL was established to play its important role in regulating market behaviors, deepening industrial layout, and also push forward the frontier innovation and development of scientific and technological finance.

TJIIAL relies on the research and academic support of Chinese Academy of Science & Technology Management of Tongji University as well as the technical achievements of Yushi Financing, and provides an industry standard, a technological evaluation system and dynamic monitoring services for the industry.

As a third-party think-tank platform, TJIIAL will assess and dynamically monitor the industry as well as IIA technology providers before it regularly releases IIA industry white papers and assessment & monitoring reports. It will also provide integrated solutions and designs of system integration services to customized IIA systems of financial institutions, and carry out vocational and technical training in the field of IIA.

Accumulating Top Talents in the Industry to Build a Think-Tank Platform

TJIIAL boasts its authoritative experts in the industry:

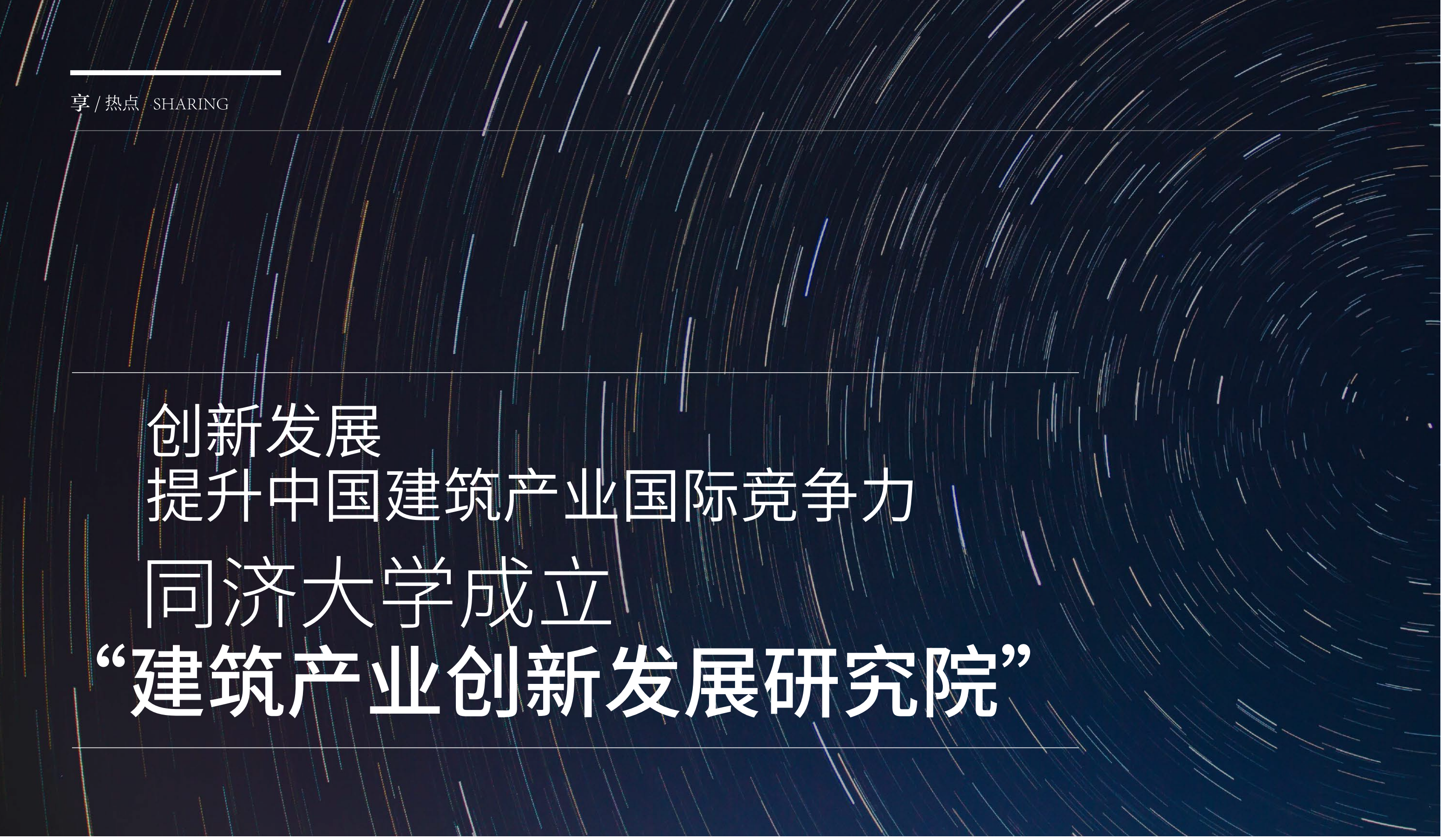
WU Zhiqiang, General Counsel of TJIIAL, Academician of Chinese Academy of Engineering, Vice President of Tongji University, State Council Expert with Special Allowance, Academician of Germany Academy of Engineering, Academician of Royal Swedish Academy of Engineering Sciences.

HUO Jiazhen, Director of TJIIAL, Executive Vice-President of Chinese Academy of Science & Technology Management of Tongji University, Chair Professor of BOSCH, State Council Expert with Special Allowance.

LI Yangang, Associate Director of TJIIAL, the first founder of AI investment decision system in China, the first investment director introducing the concept and method of quantitative investment to the Chinese market and described by China Securities Journal as "a leader in China's quantitative investment", Chairman of Yushi Financing.

As the Director of TJIIAL, HUO Jiazhen stated on the ceremony that the Lab will engage in cooperation between enterprises, universities and research institutions in the field of IIA. The Expert Committee will bring together not only senior scientific researchers, experts, scholars and senior executives from government, universities, financial institutions and technology companies, but also top-level scientific and technological talents of various aspects so as to become the leading think-tank platform in domestic IIA field.

Tongji SEM has already been accredited by AACSB, EQUIS, AMBA and CAMEA. The team of Yushi Financing is a leading financial technology firm providing AI investment decision systems and IIA service platform solutions in China, and has been focusing on the development of AI-related investment and application technologies in the field of financial technology. The cooperation between the two is going to boost new developments in the field of IIA in China.



创新发展 提升中国建筑产业国际竞争力

同济大学成立“建筑产业创新发展研究院”

3 月 16 日，同济大学建筑产业创新发展研究院成立。将立足于当前建筑产业转型升级的背景，基于同济大学土木、建筑、经济、管理、计算机等多学科资源，联合政府部门、行业协会、建筑产业企业及其他研究机构合作共建。开展建筑产业管理创新的理论研究、学术交流、行业合作与人才培养，力争建设成为中国建筑产业创新发展顶尖智库之一。

同济大学党委书记方守恩，中国工程院院士、同济大学副校长吴志强，中国建筑业协会会长、住建部原总工程师、研究院荣誉院长王铁宏，浙江省住建厅原厅长谈月明，上海市住建委副主任裴晓，上海市建筑施工行业协会副会长兼秘书长康春江，同济大学工程管理研究所创始人、研究院理事长丁士昭，同济大学经管学院院长李垣，同济大学经管学院党委书记金福安，研究院院长、同济大学经管学院副院长王广斌，研究院首批捐赠发起单位上海鲁班软件股份有限公司董事长杨宝明、杭州新中大科技股份有限公司总裁韩爱生、上海鲁班金融信息服务有限公司常务副总裁颜强、远大住宅工业集团股份有限公司总裁唐芬，以及中国中铁四局集团有限公司、中国交通建设股份有限公司港航疏浚事业部、中国建筑第八工程局有限公司、上海建工集团股份有限公司、浙江省建工集团有限责任公司、中天发展控股集团有限公司、山西建设投资集团有限公司、龙信建设集团有限公司等 22 家理事单位的代表出席成立大会。

与会专家表示，作为我国国民经济的支柱产业，建筑产业在改善人民生产生活水平、推动经济社会可持续发展方面发挥着重要作用，但亦长期面临技术进步缓慢、生产方式落后、资源耗费严重等诸多问题的困扰。当前，建筑信息模型、人工智能、云计算、机器人等新兴技术为改造建筑产业传统生产、管理方式提供了重要机遇，建筑产业亟需向智能建造、工业化建造、绿色建造方向转型升级。

王广斌
研究院院长

同济大学党委书记方守恩在致辞中表示，为更好地满足老百姓对“住得好”这一美好生活的期待，传统建筑行业面临着转型升级，对于同济大学相关学科来说，这是挑战更是机遇。希望研究院整合同济大学土木、建筑及经济、管理、计算机等多学科优质资源，结合政府需求，融合高校资源与优秀企业先进技术，通过大量实用管理理论、管理技术的创新及应用，帮助中国建筑业实现转型升级，为推动我国建筑产业创新发展作出应有的贡献。

吴志强院士在致辞中指出，建筑产业各类生产活动的人力成本、材料成本高企，在工业建造 1.0、2.0 向工业建造 4.0 转型的过程中，智能化技术发挥着关键作用。研究院在后期发展过程中，可紧扣行业创新发展脉搏，重点围绕建筑业企业智能化水平评价体系构建及行业报告发布等工作开展相关研究，并加强与行业企业的合作，催生建筑产业的原始创新。

研究院理事长丁士昭教授表示，建筑产业的创新发展涉及组织、管理、经济、技术等多方面的研究问题。研究院将积极探索自身组织创新，努力构建开放性、协同性的运行机制。在课题选择、研究开展、成果应用等领域，加强与政府部门、行业企业及其他行业机构的密切合作，为建筑产业的转型升级提供具有重要价值的管理思想、方法和工具。

研究院荣誉院长王铁宏在致辞中表示，2017 年，国务院发布《关于促进建筑业持续健康发展的意见》，旨在加快产业升级，促进建筑业持续健康发展。在此背景下，研究院的成立具有重大意义。希望

方守恩
同济大学党委书记

吴志强
同济大学院士

研究院紧扣建筑产业深化改革、绿色发展、科技跨越等主线，以大格局、大思维、大战略研究建筑产业的创新发展问题。围绕新时代主题进行深入研究，通过系统的学术研究与密切的行业合作，形成对国家、行业、企业具有深刻影响的重要研究成果，推动中国建筑产业引领世界创新发展。

研究院院长王广斌教授向参会嘉宾介绍了研究院的发展愿景、组织结构以及工作规划。研究院将下设建筑产业政策研究中心、建筑产业现代化研究中心、建筑产业数字技术研究中心、建筑企业管理创新研究中心、智能建造研究中心。围绕建筑产业发展创新战略与政策、建筑企业管理模式创新、建设项目管理模式创新、智能及绿色建造技术等方向，加强政产学研合作。

丁士昭
研究院理事长

王铁宏
研究院荣誉院长

成立大会上，中国工程院院士、同济大学副校长吴志强，中国工程院院士、中国建筑股份有限公司首席专家肖绪文，同济大学土木工程学院教授李国强，浙江省住建厅原厅长谈月明，上海市住建委副主任裴晓，江苏省住建厅原副巡视员纪迅，上海市建筑施工行业协会副会长康春江等七位专家受聘为研究院顾问委员。

The date of March 16th saw the establishment of the Institute for Innovation and Development of Construction Industry of Tongji University (herein referred to as the Institute). Within the current context of the transformation and upgrading in the construction industry, the Institute aims to fully utilize multi-disciplinary resources in Tongji University (herein referred to as the University) including Civil Engineering, Architecture, Economics, Management and Computer Science, to cooperate with government, industry associations, enterprises of construction industry as well as other research institutes and to carry out theoretical researches, academic exchanges, industry collaboration and talent cultivation concerning the managerial innovation in the construction industry. The Institute strives to rank among the top think tanks in the field of innovation and development of China's construction industry.

Innovation and Development, Enhancing the Competitiveness of China's Construction Industry——

Tongji University Established the Institute for Innovation and Development of Construction Industry

The inaugural meeting of the Institute for Innovation and Development of Construction Industry of Tongji University was a success.

Present at the inaugural meeting were representatives of the University, including:

FANG Shou'en, Party Secretary of Tongji University

WU Zhiqiang, Vice President of Tongji University and Academician of the Chinese Academy of Engineering

WANG Tiehong, Chairman of China Construction Industry Association, Former Chief Engineer of MOHURD and Honorary Dean of the Institute

TAN Yueming, Former Director of Zhejiang Provincial Department of Housing and Urban-Rural Development

PEI Xiao, Deputy Director of Shanghai Municipal Commission of Housing and Urban-Rural Development

KANG Chunjiang, Vice President and General Secretary of Shanghai Construction Trade Association

DING Shizhao, Founder of Research Institute of Project Administration and Management, President of the Institute

LI Yuan, Dean of Tongji SEM

JIN Fu'an, Party Secretary of Tongji SEM

WANG Guangbin, Dean of the Institute, Deputy Dean of Tongji SEM

Also presented at the meeting were representatives of the first organizations that donated to the Institute, including:

YANG Baoming, Chairman of Shanghai Luban Software Co., Ltd.

HAN Aisheng, President of Hangzhou Newgrand Technology Co., Ltd.

YAN Qiang, Executive Vice President of Shanghai Luban Financial Information Service Co., Ltd.

TANG Fen, President of Broad Homes Industrial International Co., Ltd.

Moreover, representatives of 22 director units of the Institute also attended the meeting, including:

China Tiesiju Civil Engineering Group Co., Ltd.

Port and Waterway Dredging Department, China Communications Construction

China Construction Eighth Engineering Division Co., Ltd.

Shanghai Construction Group Co., Ltd.

Zhejiang Construction Engineering Group Co., Ltd.

Zhongtian Development Holding Group Co., Ltd.

Shanxi Construction Investment Group Co., Ltd.

Longxin Construction Group Co., Ltd.

WANG Guangbin
Dean of the Institute

FANG Shou'en
Party Secretary of Tongji University

Experts present indicated that, the construction industry, as a pillar of China's national economy, has played a significant role in improving people's production and living standard as well as promoting a sustainable social and economic development. However, it has long faced problems such as slow technological progress, backward production methods and heavy resource consumption. A good news for the construction industry is that emerging technologies including BIM, AI, cloud computing and robots provide a crucial opportunity for the reform of conventional production and management, which requires the industry to transform and upgrade in the direction of an intelligent, industrialized and green construction.

WU Zhiqiang
Vice President of Tongji University and Academician of the Chinese Academy of Engineering

In his remark, FANG Shou'en, Party Secretary of Tongji University, said that traditional construction industry is bound to transform and upgrade so as to meet people's expectation of better life with better housing, thus presenting both a challenge and an opportunity for relevant disciplines at Tongji University. The hope is that the Institute, integrates high-quality multi-disciplinary resources of the University, such as Civil Engineering, Architecture, Economics, Management and Computer Science, utilizes academic resources along with advanced technologies from outstanding enterprises, and takes into account the government's needs in order to facilitate the transformation and upgrading of China's construction industry through the innovation and application of a mass of practical managerial theories and technologies. Thus the Institute will be able to make its due contribution to the innovation and development of the construction industry in China.

Academician WU Zhiqiang pointed out in his address that, faced with a high human and material cost in various production activities, it is essential to make good use of intelligent technologies in the transformation of construction industry from 1.0, 2.0 to 4.0. In its later development, the Institute is advised to stick to the innovation and development of the industry and carry out relevant researches focusing on establishing an evaluation system of the intelligence level of construction enterprises as well as releasing industry reports. Moreover, the Institute needs to strengthen its cooperation with enterprises within the industry so as to boost original innovations in the construction industry.

During the inaugural meeting, seven experts were appointed as Advisors of the Institute and they are:

WU Zhiqiang, Vice President of Tongji University and Academician of the Chinese Academy of Engineering

XIAO Xuwen, Academician of the Chinese Academy of Engineering and Chief Expert of China State Construction Co., Ltd.

LI Guoqiang, Professor of College of Civil Engeering of Tongji University

TAN Yueming, Former Director of Zhejiang Provincial Department of Housing and Urban-Rural Construction

PEI Xiao, Deputy director of Shanghai Management Committee of Housing and Urban-Rural Construction

JI Xun, Former Deputy Inspector of Jiangsu Management Committee of Housing and Urban-Rural Construction

KANG Chunjiang, Vice President and General Secretary of Shanghai Construction Trade Association

DING Shizhao
President of the Institute

DING Shizhao, President of the Institute, also noted in the meeting that, the innovation and development of the industry involve many research problems including organization, management, economy and technology. The Institute will actively explore the innovation of its own organization and strive to build an open and collaborative operating system. What's more, it will deepen cooperation with the government, enterprises and organizations inside and outside the industry in the fields of topic selection, research implementation and application of research outcomes. The Institute hopes to provide highly valuable managerial thoughts, measures and tools for the transformation and upgrading of the construction industry.

WANG Tiehong, Honorary Dean of the Institute, stated in his address that, in the year of 2017, "Opinions on Promoting the Sustainable and Healthy Development of Construction Industry" issued by the State Council was a guide aiming to accelerate industrial upgrading and promote the sustainable and healthy development of the construction industry. In this context, the establishment of the Institute is of great significance. He hoped the Institute would engage in deepening reforms, green development and technology breakthrough in the construction industry and study its issue of innovation and development with a large pattern, a broad thinking and a grand strategy. Moreover, the Institute shall carry out researches by sticking to the theme of the new era, and try to achieve significant research results that have profound influences on the country, industry and enterprises through systematic academic researches and close cooperation with the industry, thus boosting the innovation and development of China's construction industry until it achieves a leading position in the world.

Vice President WU Zhiqiang, Professor WANG Tiehong and donors were inaugurating the Institute.

WANG Tiehong
Honorary Dean of the Institute

Finally, WANG Guangbin, Dean of the Institute, introduced to the distinguished guests the development vision, organizational structure and work planning of the Institute. The Institute consists of five research centers -- Center for Construction Industry Policy Studies, Center for Construction Industry Modernization Studies, Center for Construction Industry Digital Technology Studies, Center for Construction Enterprises Management Innovation Studies, and Center for Intelligent Construction Studies. The government-industry-university-institute cooperation will be strengthened centered on the strategies and policies on the innovation and development of construction industry, innovation of the management model of construction enterprises, innovation of the management model of construction projects as well as intelligent and green construction technologies, etc.

白云霞
同济大学经济与管理学院教授、
博士生导师

长期以来，中国经济在长期投资拉动下持续高速增长，投资在 GDP 中的比重逐年上升，2013 年达到 48.59% 的历史最高，这一水平即使从全世界历史上看也是惊人的。这种增长模式超过了自然生态系统的承受和自净能力，导致自然资源枯竭，碧水蓝天不再。因此，与环境相协调的可持续发展理念日益深入人心。然而，人们忽略了这种模式下隐藏的另外一个重要问题，正如大量投资需要消耗自然资源一样，投资也需要输入大量资金。那么，如此大规模投资的融资模式是怎样的，是否存在枯竭断裂的风险？

为什么中国经济在短期资金轮子上滚动？

作者：白云霞　邱穆青　李伟

原文刊发：《中国工业经济》2016 年第 7 期，
原标题为《投融资期限错配及其制度解释——来自中国两国金融市场的证据》

资产期限与融资期限相匹配是公司金融理论的一个基本原则，即：用短期资金为流动资产融资，用期限较长的资金支持长期资产。当融资期限小于投资期限时，投资可能无法产生足够的现金流来偿还到期融资。一旦出现融资困难，极易引发资金链断裂，不但使企业陷入财务困境，而且会通过债务违约传导至整个金融系统。

过去十多年，中国金融市场每年提供的长期债券、权益融资和长期贷款等长期资金总计大约分别为 GDP 和全社会固定资产投资额的 10% 和 20%。形成鲜明对照的是，美国公司债和权益融资达到 GDP 的 35%，更是固定资产投资的 1.5 倍。这意味着从宏观上看，美国的长期融资不仅覆盖了固定资产投资，而且为部分流动资产投资也提供了融资，而中国大约有 80% 的固定资产投资无法从金融系统获得长期融资。

宏观上的数据反映出中国企业在不依靠金融系统提供长期资金的情况下，实现了大规模的投资扩张。由此产生一个问题，即：在投资扩张过程中，中国企业是否遵循期限匹配原则，从而能保持基业常青？

在经济下行和债务风险日益暴露的当前，研究中国企业期限匹配问题具有深刻的现实意义。然而，学者对这一问题的研究很少。一些研究非正规金融的文献，部分地解释了中国企业，特别是民营企业，在不依靠金融系统的情况下，获得快速成长的秘密。虽然这类文献对理解中国经济问题很有启示，但是尚未涉及中国企业在投资过程中的期限匹配问题。同时，考虑到非正规融资的期限往往更短，依靠非正规融资成长的中国企业则更为脆弱。

基于 1998-2013 年中美上市公司的实证比较发现，中国公司长期融资相对长期投资的比率很低，大多数年份超过 30% 的中国公司该比率小于 1，2006-2008 年甚至接近 45%，而美国不到 5% 公司的这一比率小于 1。同时，中国公司投资的增加或减少，往往伴随着流动负债超过其为流动资产融资的大幅增加或减少。相反，美国公司的投资并不引起流动负债相对流动资产比率的变化。由此揭示出中国的微观企业通过不断滚动短期融资来支持长期投资，从而在总量上推动中国经济在短期资金的轮子上高速前行，创造了中国奇迹。

由于长期资金的成本高于短期资金，中国企业是否出于节省融资成本的考虑而“主动”选择期限错配？答案是否定的。当中国企业能够从金融市场上获得长期资金时，并不会选择该策略。更为重要的是，中国企业的这一行为不受长短期资金利差影响。反倒是美国企业在择机采取短贷长投策略来节约融资成本。由此推断，短贷长投是中国企业在面临长期融资约束的情况下，实现投资扩张的权宜之计。

那么，中国金融系统为什么不能供应充足的长期资金？其制度原因主要有三点：

①中国债券和权益融资市场不发达，融资主要依赖银行系统。而相比债权和权益市场，银行信贷在提供长期融资上天然具有局限性。

②中国利率结构不合理，短期利率较高，而长期利率的上浮空间受到限制。较低的期限溢价使长期资金供给得不到有效激励。

③中国货币政策波动较大，资金供需双方难以建立稳定预期，交易呈现短期化。

基于以上制度成因，我们提出以下政策建议，来解决中国经济在短期资金上滚动的困境：

①完善多层次的金融市场结构，使企业能够根据自身需求，选择不同种类和期限的资金，合理安排资产和融资期限。

②提高利率市场化水平，使利率更能反映期限溢价和风险溢价，从定价上改善期限错配状况。

③货币政策从“自由裁量型”向“基于规则型”转变，并采用公开市场操作的形式，为企业的期限匹配提供稳定的外部环境。

Author: Bai Yunxia Qiu Muqing Li Wei

WHY IS CHINA'S ECONOMY ROLLING ON THE WHEEL OF SHORT-TERM FUNDS?

For a long period, China's economy has been obtaining continuous rapid growth driven by long-term investment. The proportion of investments to GDP increased year by year, reaching the peak of 48.59% in 2013, which is amazing even looking back at the global history. This growth model exceeds the endurance and self-purification capacity of natural ecosystems, thus leading to the exhaustion of natural resources and the disappearance of blue sky and clear water. Therefore, the concept of sustainable development in harmony with natural environment has been deeply rooted among the people. However, an important issue hidden behind this mode is ignored, that as investment consumes natural resources, investment requires enormous amount of capital input as well. So what's the financing mode of such a large-scale investment? Is there any risk of capital exhaustion or rupture?

The matching of asset maturity and financing maturity is a basic principle of the theory of corporate finance, with short-term funds supporting current assets financing and long-term funds supporting long-term assets. Under the circumstance that the financing maturity shorter than the investment maturity, the investment may be incapable of bringing enough cash flow to repay matured debts. Once financing difficulty happens, it will easily trigger capital chain rupture, which not only leads enterprises into financial difficulty, but also transmits it to the whole financial system through debt defaults.

Over the past decade, the long-term funds provided by China's financial markets, namely long-term bonds, equity financing and long-term loans etc., account for 10% of GDP and 20% of total investment in fixed assets. By contrast, corporate debt and equity financing account for 35% of US' GDP and 1.5 times that of fixed assets investment. From a macro point of view, this means that America's long-term financing not only covers the investment in fixed assets, but also provides financing for part of the current assets investment, while in China, about 80% of the investment in fixed assets cannot get long-term financing from the financial system.

The macro-level data indicates a massive investment expansion of Chinese companies without long-term fund support from the financial system, thus presenting a question whether Chinese companies will follow the principle of maturity matching in the process of investment expansion, so as to maintain the everlasting goal.

It is of great practical significance to study the maturity matching of Chinese corporations under the situation of economic downturn and increasing exposure of debt risks. However, this issue is rarely studied among scholars. Some informal financial literature partly explained the secret of Chinese companies, especially private enterprises, for achieving rapid growth without support from the financial system. Although this kind of literature is very enlightening to understand China's economy, it does not involve the maturity matching issue in the investment process of Chinese enterprises. Meanwhile, Chinese companies that have grown up on informal financing are more vulnerable given shorter maturities.

Based on the empirical comparison of listed companies in China and the United States from 1998 to 2013, it is found that the long-term financing to long-term investment ratio is very low for Chinese companies, with lower than 1% for over 30% of Chinese companies in most years, and close to 45% from 2006 to 2008; while less than 5% of American companies holding the ratio below 1%. At the same time, the increase or decrease in investment by Chinese companies is often accompanied by a dramatic addition or reduction in the exceeding part of current liabilities over the financing of current assets. In contrast, investment by US companies does not change the ratio of liquid liabilities to liquid assets. Thereout, it reveals that China's micro enterprises rely on continuous short-term financing to support long-term investment, so as to drive China's economy to grow rapidly on the wheel of short-term funds in terms of quantity, thus creating the China miracle.

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Doctoral Supervisor

Do Chinese enterprises proactively choose maturity mismatch for the sake of financing cost saving given the higher cost of long-term funds than short-term funds? The answer is no. Chinese companies will not choose this strategy if they can get long-term capital from financial markets. More importantly, Chinese companies are not affected by the interest rate spread between long-term and short-term funds. Instead, American companies are seeking to use short-term loan for long-term investment in order to save financing costs. Therefore, it is concluded that using short-term loan for long-term investment is a makeshift for Chinese enterprises to achieve investment expansion in the face of long-term financing constraints.

So why can't China's financial system supply enough long-term capital? Here are three institutional reasons:

1. Under an undeveloped bond and equity finance market, financing mainly depends on the banking system that has natural limitation on providing long-term financing compared with the bond and equity markets.

2. An unreasonable interest rate structure with high short-term interest rate and limited rising space for long-term interest rate makes long-term capital supply short of effective stimulation due to low premium.

3. China's fluctuating monetary policy makes it difficult for both capital supply and demand parties to establish stable expectations, thus short-term trading tends to occur.

onsidering the above institutional reasons, we put forward the following policy suggestions to solve the dilemma of China's economy in obtaining short-term capitals:

1. To perfect the multi-layered financial market structure to let enterprises choose capitals of different types and maturities in line with their own needs, achieving reasonable arrangement of assets and financing maturity.

2. To increase the interest rate marketization level, making the interest rate better reflects the maturity and risk premium, thus to improve the situation of maturity mismatch through pricing.

3. To shift monetary policy from "discretionary" to "rule-based", and use open market operations to provide a stable external environment for companies' maturity matching.

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汽车新零售趋势渐起 经销商集团行业谋变

2018 中国汽车经销商集团 **TOP200** 竞争力指数正式发布

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5 月 10 日，同济大学经济与管理学院和海略咨询共同编制的 2018 年度“中国汽车经销商集团 TOP200 竞争力指数”（以下简称“TOP200 竞争力指数”），通过众调科技汽车大数据平台正式发布。2015 年至今，“TOP200 竞争力指数”为我国汽车厂商、汽车经销商集团、行业专家、金融机构、汽车媒体以及消费者提供了极具意义的参考价值和数据支撑。

2018“TOP200 竞争力指数”显示，随着中国汽车市场进入新常态，经销商集团也已经开启全面深化转型。在转型道路上，TOP200 经销商集团不断稳固自身优势，持续深化互联网 + 转型，综合竞争力指数基本保持稳定。与此同时，经销商集团领军企业实力进一步强化，百亿以上集团数与上年持平，为 52 家；两百亿集团数量从 17 家增加到 18 家。

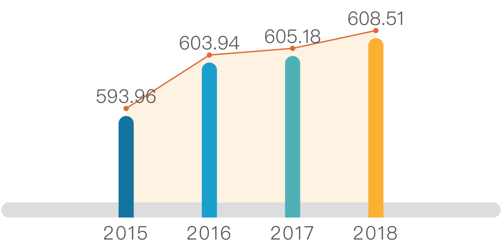
2018 年度中国汽车经销商集团 TOP200 综合竞争力指数为 608.51，比 2017 年度有所微涨。其中：综合竞争力高分区（700 以上）集团有 35 家，较 2017 年增加 3 家；但综合竞争力低分区（500 以下）集团有 6 家，较 2017 年增加 4 家。

2018 中国汽车经销商集团竞争力指数

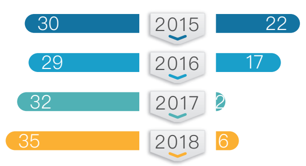
2018 年度中国主流经销商集团 TOP200 综合竞争力指数为 608.51，比 2017 年度有所微涨。

其中：综合竞争力高分区（700 以上）集团有 35 家，较 2017 年增加 3 家；但综合竞争力低分区（500 以下）集团有 6 家，较 2017 年增加 4 家。

Top200竞争力指数



竞争力指数超700集团数 | 竞争力指数低于500集团数



2018“TOP200 竞争力指数”以汽车经销商集团竞争力为研究对象，全面覆盖了经销商集团的销售能力、服务能力、管理能力、网络能力以及创新能力。从海略经销商集团数据库中选取前 200 家代表性经销商集团作为样本，研究他们的乘用车业务单元在 2017 年的业绩表现。

2017 年到 2018 年，中国汽车经销商集团主要表现为以下几大趋势：

第一：汽车新零售启动试水，融资租赁模式开启布局

回顾 2017 年整体汽车流通市场，最大看点在于以轻资产、高效率、线上线下相结合为特性的汽车新零售开始启动试水。特别是以单个车为代表的直租模式，驱动汽车零售新模式转型。2017 年，中国整体汽车融资租赁业务整体渗透率仅为 3.2%，和美国接近 30% 左右的渗透率相比，相差甚远，但也开始从侧面推动中国汽车经销商集团融资租赁业务深化布局。像广汇集团、永达融资租赁也开始持续深化产品创新。

从上市经销商集团的 2017 年业绩预测报告来看，多数经销商集团的盈利均有大幅增长。业绩增长的原因除新车销量增长外，还与汽车增值业务的完善及汽车金融方面的业务布局有关。

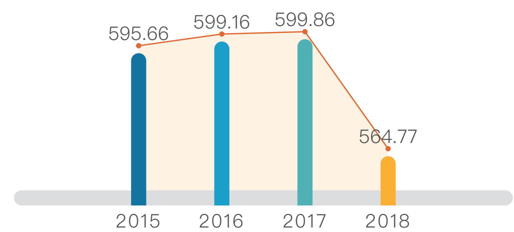
随着汽车市场销量增速的逐步放缓，单纯新车销售的毛利也在逐步下降。在此情况之下，经销商集团顺势抓住“以旧换新”市场，利用汽车金融杠杆，发展二手车业务，这既是传统经销商集团的盈利点，也是其需要迈出的转型一步。与不确定因素较多且回报周期较长的重资产投入相比，以轻资产运营的汽车新零售，自然会更受资本市场的青睐。但在未来的市场竞争中，全生命周期的用户价值挖掘能力，将成为传统经销商集团在竞争中顺利生存发展的关键。

2018 中国汽车经销商集团竞争力指数 销售能力维度

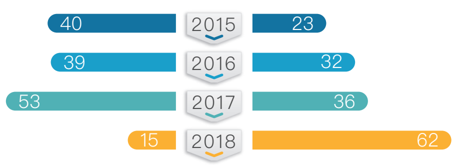
从销售能力维度来看，TOP200 销售能力指数达到 564.77，比 2017 年下降 5.85%。

其中：销售能力高分区（700 以上）集团有 15 家，较 2017 年下降 38 家；销售能力低分区（500 以下）集团有 62 家，较 2017 年增加 26 家。

Top200销售能力指数



销售能力超700集团数 | 销售能力低于500集团数



第二：线上线下融合转型，全面提升用户体验迫在眉睫

汽车产业与互联网、人工智能等技术不断渗透融合，不仅在品牌曝光、线索收集、销售转化得到深度应用，还在保客回厂提升、增值业务销售、服务预约等环节也开启全面应用。线上平台对经销商集团而言，已不仅仅是线上交易平台，还具有强大的营销价值、媒介价值、数据价值和服务价值。经销商集团在打造线下门店的同时，进一步加大与线上平台（APP、微信、专业网站等）的融合，实现全方位服务能力的目标。

近年来，一系列汽车电商平台的受挫，究其原因，主要是盈利模式不清晰。只依靠导流很难真正实现有效盈利，只有涵盖新车销售、保险、金融、售后服务等产业链闭环，才能真正具备盈利能力。以往的打法是低价销售、特卖等，提升品牌知名度。下一步，就是要真正做到线上线下深度融合，才能实现盈利。

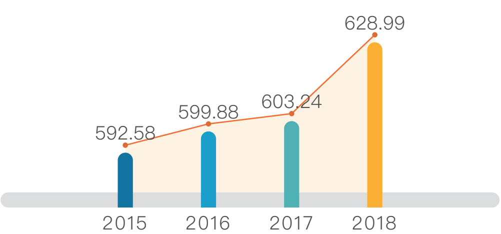
部分汽车经销商集团正在开始进行全方位建立用户触点，开展基于客户全生命周期价值的服务提升。比如：部分 TOP200 经销商集团和众调科技的汽车大数据认知商务驱动的业务战略合作，就是要重点解决这个行业痛点。所以，如何把线上的大数据优势和线下的体验与服务优势相融合，也是现阶段汽车经销商集团关注的重点。

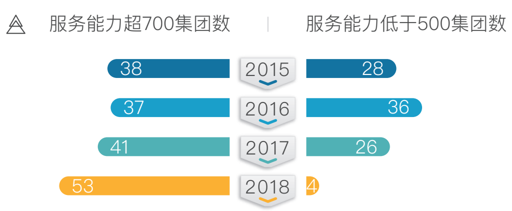
2018 中国汽车经销商集团竞争力指数 服务能力维度

从销服能力维度来看，TOP200 服务能力指数达到 628.99，比 2017 年增加 4.27%。

其中：服务能力高分区（700 以上）集团有 53 家，较 2017 年增加 12 家；销售能力低分区（500 以下）集团有 4 家，较 2017 年减少 22 家。

Top200服务能力指数





第三：衍生业务创新深化，盈利提升推动增长

汽车经销商集团的创新能力大幅提高，主要是为了应对当前的市场环境。面对传统业务的发展瓶颈，积极思考传统业务的突破口时，大力加强衍生业务和渠道模式等的创新发展，从而推动集团实现转型。

不难发现，以金融、保险、延保及二手车等为主的衍生业务，对新车综合毛利率的增长贡献度正在逐年提升。但与美国等成熟汽车市场相比，仍存在差距，衍生业务的后续发展潜力巨大；从毛利结构来看，衍生业务的毛利占比，由 2014 年的 9.1% 提升至 2017 的 21.7%，衍生业务的盈利空间及盈利能力持续提高。

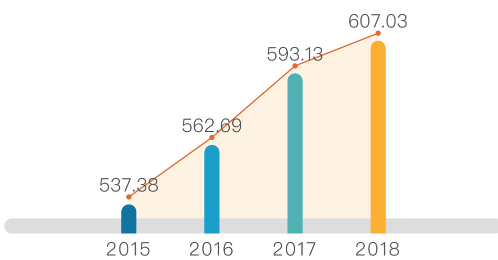
很多经销商集团正在开发推出更加丰富的自主汽车延保产品，并结合保险费率改革，推出玻璃、漆面等保修服务。同时，随着购车群体的年轻化和消费方式的转变，消费者对于贷款购车的刚性需求不断加大，这也刺激汽车厂商更加积极地推动汽车金融衍生业务。由此可见，在这样的大背景下，经销商集团一方面丰富了衍生业务产品种类，另一方面提升了衍生业务渗透率，进一步锁定了客户。

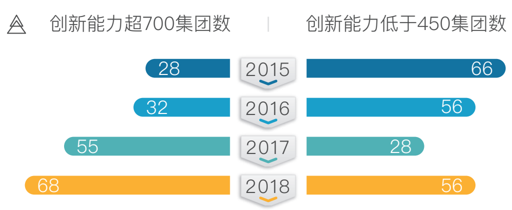
2018 中国汽车经销商集团竞争力指数 创新能力维度

从创新能力维度来看，TOP200 创新能力指数达到 607.03，比 2017 年度提高 2.34%。

其中：创新能力高分区（700 以上）集团有 68 家，较 2017 年增加 13 家；销售能力低分区（450 以下）集团有 56 家，较 2017 年增加 28 家。

Top200创新能力指数





第四：豪华品牌网络规模持续扩大，头部集团深化布局

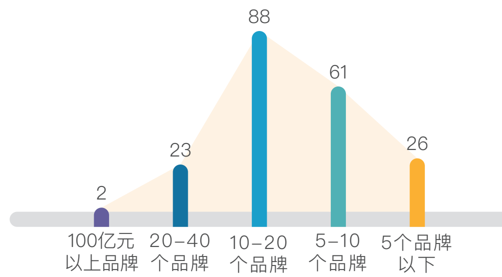
2017 年，经销商集团的网络拓展主要以并购为主，新建网点的步伐有所放缓。经销商的关注度集中于现有网络的能力提升，以及二级网络的覆盖。通过轻投资，降低集团的风险，提升抗风险能力。

2018 中国汽车经销商集团竞争力指数 品牌分布

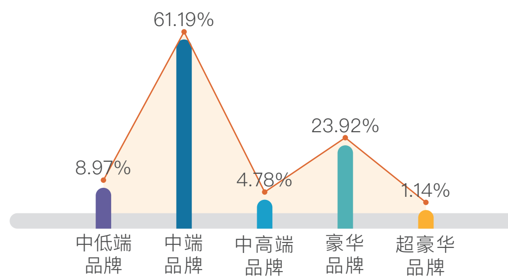
从品牌维度来看，TOP200 集团中，近 90% 的集团品牌少于 20 个，中端品牌和豪华品牌成为主要经营品牌。

经营品牌超过 40 个的集团为广汇和庞大，大部分集团品牌在 10-20 个之间。从 TOP200 经营集中度最高的中端品牌来看，主要集中在南北大众、通用和丰田；从豪华品牌来看，奥迪、奔驰和宝马占据前三列。

Top200品牌覆盖数量



Top200品牌经营类别



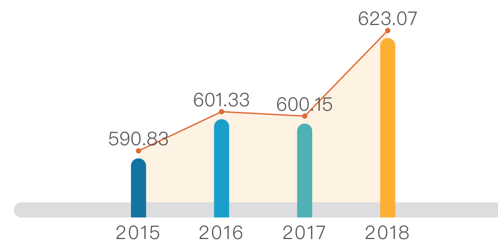
而作为头部的经销商集团，除了延续并购整合的发展战略外，在原有 4S 店基础上，进一步拓展超豪华、豪华及中高端品牌经营网点，并规划在中西部以及二至四线城市的深化布局。同时，重点强化超豪华、豪华车辆的综合服务，强化盈利水平，以此应对个别品牌市场利润下降的冲击。

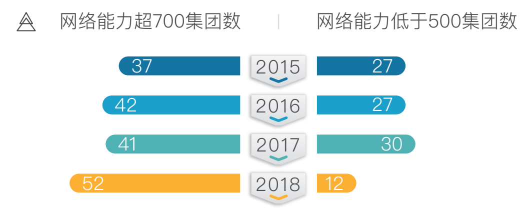
2018 中国汽车经销商集团竞争力指数 网络能力维度

从网络能力维度来看，TOP200 网络能力指数达到 623.07，比 2017 年度增加 3.82%。

其中：网络能力高分区（700 以上）集团有 52 家，较 2017 年增加 11 家；网络能力低分区（500 以下）集团有 12 家，比 2017 年减少 18 家。

Top200网络能力指数





NEW AUTOMOBILE RETAIL TREND GRADUALLY RISES, DEALERSHIP GROUP INDUSTRY SEEKS CHANGES —

The 2018 TOP200 China Automobile Dealership Groups Competitiveness Index Officially Released

On May 10th, the 2018 "TOP 200 China Automobile Dealership Groups Competitiveness Index" (hereinafter referred to as the "TOP 200 Competitiveness Index") jointly compiled by Tongji SEM and Haistand Consulting was officially released through UnicData's automobile big data platform. The "TOP 200 Competitiveness Index" has provided meaningful references and data support for Chinese auto makers, auto dealership groups, industry experts, financial institutions, automobile media and consumers since 2015.

According to the 2018 "TOP 200 Competitiveness Index", with China's automobile market entering a "new normal" situation, dealership groups have also embarked on a comprehensive and deepened transformation. In the process, the TOP 200 dealership groups have been consolidating their own advantages, deepening the Internet+ transformation, and maintaining a stable overall competitiveness index. Meanwhile, the strengths of leading enterprises are further improved with the number of groups valued over 10 billion unchanged from the previous year (i.e. 52), and groups valued over 20 billion increasing from 17 to 18.

ZHENG Xin
Associate Professor of Tongji SEM,
Master Supervisor

The TOP 200 Overall Competitiveness Index of China Automobile Dealership Groups in 2018 is 608.51, slightly higher than that of 2017, with 35 groups in the high score range (above 700), and 6 groups in the low score range (below 500), 3 and 4 more than that of 2017 respectively.

Taking auto dealership groups' competitiveness as the research object, the "TOP 200 Competitiveness Index" in 2018 comprehensively covered dealers' **sales capability, service capability, management capability, network capability and innovation capability.** The top 200 representative dealership groups were selected from the database of Haistand company to study the performance of their passenger car business unit in 2017.

China automobile dealership groups mainly show the following trends from 2017 to 2018:

Looking back on the overall automobile trading market in 2017, the biggest attraction is the launch of new auto retail mode characterized by light assets, high efficiency and combination of online and offline, especially the transformation of new auto retail mode driven by the single car direct renting mode. In 2017, the overall penetration rate of China's auto financing lease business is only 3.2%, far away from nearly 30% penetration in the United States, nevertheless starting to promote deepening layout of China's auto dealership groups' financing lease business. Companies like China Grand Auto Group and Yongda Financing Lease are also starting to continuously deepen their product innovations.

Judging from the performance forecast report of the listed dealership groups in 2017, most of the groups' profit have increased significantly. The growth is not only because of the increase of new car sales, but also related to the improvement of automobile value-added business and the business layout of automobile finance.

With the gradual slowing down of the sales growth in auto market, the gross profit of new car sales is also gradually declining. Under such circumstance, the dealership groups grasp the "old for new" market, and use auto financial leverage to develop used car business, which is not only a profit model for traditional dealership groups, but also an essential step needed toward transformation. Compared with the uncertainties and long return period of heavy asset investment, the new automobile retail operation with light assets will naturally be favored by the capital market. However, the ability of excavating users' value during the whole life cycle will become the key factor for traditional dealership groups' survival in the future market competition.

Second: Urgent to integrate online and offline transformation to comprehensively improve user experience

The constant penetration and mergers between auto industry and technologies like Internet, artificial intelligence etc. not only get in-depth application in brand exposure, clues collection and sales conversion, but also start comprehensive application in customer return rate improvement, value-added business sales, and service reservation. For the dealership groups, online platforms are not only for online trading, but also have strong marketing value, media value, data value and service value. While building offline stores, the dealership groups will further integrate them with online platforms (APP, WeChat, professional websites, etc.) to achieve the goal of all-round service capability.

In recent years, a series of automobile e-business platforms have suffered setbacks mainly due to unclear profit model, thus having difficulty in generating profits simply by attracting flows. A closed industrial cycle covering new car sales, insurance, finance and after-sales service can truly guarantee profitability. In the past, the strategy was low price and special offers so as to improve brand awareness. The next step is to deepen the integration of online and offline means to achieve profitability.

Auto dealership groups are starting to build omnibearing user contact, developing service upgrading based on customers' life cycle value, e.g. the strategic cooperation driven by business cognition between some of the TOP 200 dealership groups and UnicData's auto big data platform is to solve the industry pain point. Thus, how to integrate the online big data advantage and offline experience and service advantage is the key point that auto dealership groups focus on at current stage.

Third: Innovation and deepening of derivative business, profit increase promotes growth

The innovation capability of automobile dealership groups was improved dramatically mainly in response to the current market environment. Facing the bottleneck of traditional business development, they positively think about the breakthrough to the traditional business, intensify derivative business and channel mode innovation, so as to promote group transformation.

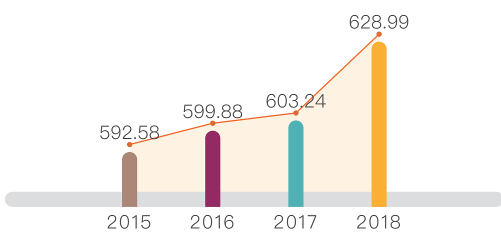
It is not difficult to find that derivative businesses like finance, insurance, extended warranty and used car etc. are contributing an increasingly larger proportion to the comprehensive gross profit growth of new cars. Nevertheless, there is still a gap if compared with mature automobile market such as the US, indicating a huge development potential for derivative business. In terms of gross profit structure, the proportion of gross profit of derivative business increased from 9.1% in 2014 to 21.7% in 2017, presenting a continuous increase in the profit space and profitability.

Many dealership groups are developing and launching a larger variety of auto extended warranty products, and offering after-sales services in glass and painting in combination with the insurance rate reform. At the same time, with younger buyers and changes in consumption pattern, the rigid demand for loan purchase increases, which also stimulates auto makers more actively to promote derivative business like automobile finance. It can be seen that in such a context, dealership groups not only have enriched the types of derivative products, but also have increased the penetration rate of derivative businesses and further locked up customers.

Competitiveness Index of China Auto Dealership Groups in 2018 | Service Capability Dimension

Regarding service capability, Top 200's service capability index reaches 628.99, 4.27% higher than that of 2017, with 53 groups in the high end range (above 700), 12 more than that in 2017; 4 groups in the low end range (below 500), 22 fewer than that in 2017.

Top 200 Service Capability Index

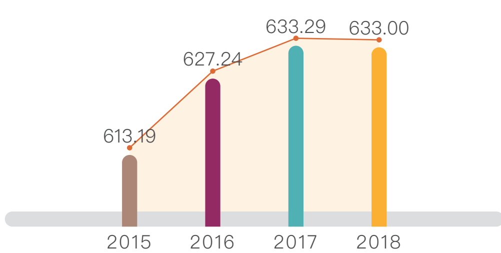


Number of Groups with Index Above 700 | Number of Groups with Index Below 500

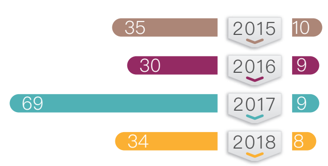
Competitiveness Index of China Auto Dealership Groups in 2018 | Credit Rating Dimension

Regarding credit rating dimension, Top 200's credit rating index reaches 633.00, 0.04% lower than that of 2017, with 34 groups in the high end range (above 700), 35 fewer than that in 2017; 8 groups in the low end range (below 500), 1 fewer than that in 2017.

Top 200 Credit Rating Index



Number of Groups with Index Above 700 | Number of Groups with Index Below 500



Fourth: Luxury brands' network scale continues to expand, leading groups deepening layout

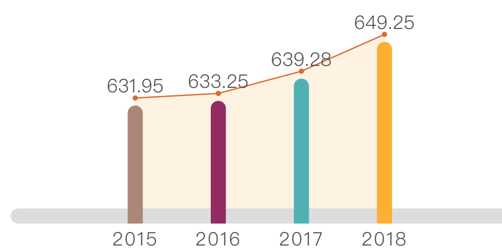
In 2017, the network development of the dealership groups mainly focuses on mergers and acquisitions, slowing down in the building of new branches. The dealers concentrate on the capacity improvement of existing network and the coverage of secondary network to reduce risk and enhance anti-risk capability through light investment.

In addition to the continuation of M&A integration development strategy, dealership groups further expand the super luxury, luxury and high-end brand business outlets based on the original 4S shops, and plan deepened layout in central and western regions as well as tier-2 to tier-4 cities. Meanwhile, they should focus on strengthening comprehensive services for super luxury and luxury cars, enhancing profitability to offset the impact of profit decline in several brand markets.

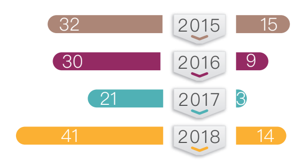
Competitiveness Index of China Auto Dealership Groups in 2018 | Management Capability Dimension

Regarding management capability dimension, Top 200's management capability index reaches 649.25, 1.56% higher than that of 2017, with 41 groups in the high end range (above 700), 20 more than that in 2017; 14 groups in the low end range (below 550), 11 more than that in 2017.

Top200 Management Capability Index



Number of Groups with Index Above 700 | Number of Groups with Index Below 550

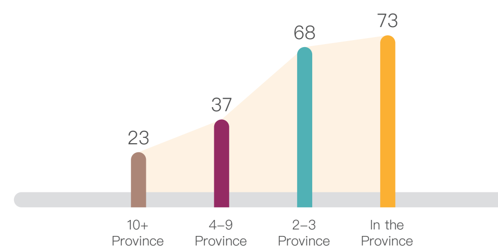


Competitiveness Index of China Auto Franchiser Group in 2018 | Branch Distribution

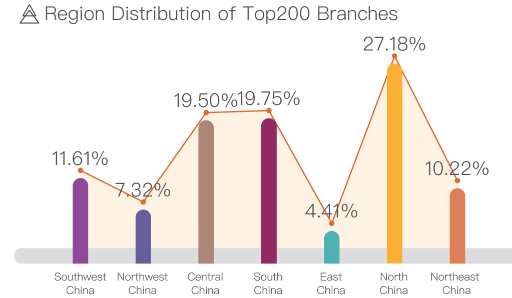
Regarding region dimension, Top 200 mainly concentrate in North china, East China and South China, with 70% of the groups having branches over 3 provinces.

For North China, branches highly concentrate in Shangdong and Hebei Province. From a holistic perspective, branches concentrate in Guangdong, Jiangsu and Shandong Provinces. Groups with branches over 4 provinces are mainly nationwide groups like China Grand Auto Group and Pangda Automobile Group.

Province Distribution of Top 200 Branches



Region Distribution of Top200 Branches



East China: Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi

South China: Guangdong, Fujian, Guangxi, Hainan

North China: Beijing, Tianjin, Hebei, Shandong, Henan, Shanxi, Inner Mongolia

Central China: Hubei, Hunan

Southwest China: Sichuan, Chongqing, Guizhou, Yunnan, Tibet

Northeast China: Liaoning, Jilin, Heilongjiang

Northwest China: Shanxi, Gansu, Ningxia, Qinghai, Xinjiang

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在同济经管教书近 20 年，创造新知不是所长，做着知识传播和提升认知的工作，私下揣度，提升学生认知的工作恐怕更为重要。我自认是一个好为人师且以此为乐的人，从自己的教书经历中，我清晰地感觉自己经历着四种角色的变迁，在此，跟各位同仁分享这种奇妙的感觉。这四种角色分别是演员、导演、指挥家和法官。各位一定会好奇，教书和法官如何关联，容我慢慢道来！

高校教师——未来教育生态世界的法官？

邱灿华
同济大学经济与管理学院副教授

成为一个好演员可以吗？

刚开始教书时，我觉着能成为一个好演员，在讲台上表演成功就行。刚开始，最是惦记着台词能否背下来，要怎么对学生说话。很像一个表演者，表演了很多年，从一个拙笨的演员，到越来越自如的表演家，有时还有些自鸣得意。

小时候的我非常内向，不善言辞，人前讲话经常面红耳赤讲不出，还好我母亲那时是某个犄角旮旯的小学校长，她给我创造了一些人前讲话的机会。我也曾赶上“批林批孔”的尾巴，也被安排在几百号人的大会上读稿子，紧张得腿肚子打哆嗦。次数多了，也就慢慢习惯了，还慢慢养成一种人前表演的成就感和表演欲望。

当了老师之后，这种成就感更来自于对别人产生的影响。当自己的想法和理念能够有效的传达给学生时，我获得了作为教师的快乐，对我来说这尤为荣幸加幸福，既满足了生存需要，也满足了自我成就感。成为一个好演员是我教师生涯的第一个层次，但这足够吗？

还要成为一个好导演！

我发现，在教学的过程中，每一个学生本身就是一个很好的教育资源，无论是本科生还是 MBA 学生。所谓“三人行，必有我师”，在有效的课堂组织之下，人人都可以成为一个教育者。每一个人观察世界的方法和角度都有不同，因此，在某些方面就可能成为别人的老师。来自各行各业的学生发言或分享，给教师带来了认知的提高，教师再反哺给学生，这就是教学相长。

在课堂组织上，如果能够调动同学们参与，把课堂组织成一部有声有色的电影，可以让更多的好演员参与进来，这时，你的身份应该是导演。你想传达的理念和想法，经由这些角色帮你展现出来。

作为导演，想法和理念的高明程度决定着电影的水准。同样类比，以导演角色进行课堂组织会有两个缺陷。其一，作为导演他是偏重某些演员的，如果是课堂，对学生就会厚此薄彼。其二，导演自身的水准也有极大的影响，一个好导演，也不能总导出好片子来。

这是我关于教师身份的第二个层次的进化——做一个好导演。如何把课堂带到更好的方向上去，我按照这个方向又努力了多年。接下来的问题是，如果教师是导演的角色，导演自身的水准和选择演员的偏好，也会产生很多偶然性。那么，如何产生更加有效的课堂组织呢？

指挥家可能更合适？

自然而然，带着更好课堂组织的使命，我想到了第三种教师的角色——乐队的指挥家。教育应该是大家一起向前进步的过程，教室里的每一个角色，都应该有其价值的体现和发挥能量的机会。作为指挥家，他除了对乐谱有自己的理解之外，还需要调动所有可用的乐手资源，让团队来形成一个合力，演奏出优美而富有内涵的曲子。

不论在本科还是 MBA 课程，同学来自于各行各业，有自己的奋斗经历，有各种爱好，他们若能分享自己的故事和见解，就是对课堂的贡献。一个好大学，不仅仅是因为有好老师在传递知识，更重要的是给学生们提供了机会，让学生的思想有相互交流、沟通的机会。如果你是个好的指挥家，就要把这些资源组合在一起，演奏成一首交响乐。

如果你成了教室里的优秀指挥家，是否就已经到了教师的最高境界了呢？当然，还会有无限的进步空间等着你。这时，你的音乐表达仍受到两个层面的限制，其一，你自己的认识境界是否能达到某种高度？其二，你是否在现有的乐队里能找到合适的乐手去表达你的音乐？这两种限制，作为教师也都是自然存在的。作为一个认知学问的人，个人的认知空间受到局限，如何突破自己的认知？同时在一个有限的实体空间里，你可能也缺乏激发你教学所需要的学生资源。作为教师，我们应该如何往下走呢？

试一试成为一个法官吧！

互联网教育环境可能有机会解决上述的两个难题。作为高校教育者，能否借助互联网的外部头脑来提升自己的认知？作为学生，传统的课堂学习无法满足互联网时代的需求，需要不断的去学习新东西，带着问题主动寻找有效的方法和提升认知框架。这就意味着，学生需要一个自主学习空间，这个空间能有效构造教育输出者和学习者之间的互动关系。

如何营造这样的自组织学习空间呢？传统的教学空间，将受到物理空间的局限。现在所谓一个好的大学，不管是哈佛、清华、北大或是同济，都需要有这样的教学实体。在这个实体的空间里面，大家聚在一起，产生学习和沟通，相互良性的冲突，它依托的是一个实体的空间。那我们有没有办法能够挣脱这个实体空间的限制？

如果有一天，无论学生和老师，无论身处何地，人人可以分享知识，人人可以带动他人参与学习，这将是一种多么诱人的场景。随着互联网的发展，教育资源越来越平等而分散，这就由原来教授们所垄断的教育传播过程，变成一个大家都可以平等分享的过程，或者是互相教育的过程。我认为未来的学习将会是互动的、自组织的合作学习过程。

这种互动需要有一种界面或者是一种学习生态，教育者应该设法搭建这样的生态环境，促进这样的教育生态的生发和成长。此时，教育者应该成为一个法官，他不亲力亲为，只是做出冲突的裁决，通过保护公平和效率来维护这个学习系统的运行。这样的努力将会使教育场景更加广阔，更加有生命力，能影响更多的人。这是我期望的角色，愿我有生之年能实现这样的愿景，成为一个维护教育生态世界的法官。

UNIVERSITY TEACHERS— **JUDGES IN FUTURE EDUCATIONAL ECOLOGY?**

Teaching at Tongji SEM for nearly 20 years in disseminating knowledge and promoting cognition, I know creating new knowledge is not my specialty. As far as I'm concerned, promoting students' cognition is more important. I consider myself to have a tendency to lecture people and feel happy for it. Here I would like to share with my colleagues the wonderful feeling of four changing roles during my teaching experience. These four roles are actor, director, conductor and judge. You must be wondering how teaching and being a judge are related. Here is the story.

QIU Canhua
Associate Professor of Tongji SEM

Enough to Be A Good Actor ?

When starting my teaching career, I thought I could be a good actor simply by performing successfully on the stage. At first, the greatest concern is to recite the lines and how to talk to students, much like a performer. Acting for many years, I become a smooth performer from a clumsy actor, with self-satisfaction at times.

Introverted and inarticulate as a child, I seldom spoke out in front of people. Fortunately, my mother created some opportunities for me to talk in front of audience as the principal of an unknown elementary school. I also caught up with the tail of "Criticizing Lin & Kong" movement, during which I was arranged to read articles in the conference of hundreds of people, trembling with nervousness. While after several times, I slowly got accustomed, even developed a sense of achievement and desire to perform in front of people.

After becoming a teacher, the achievement is more from my impact on others. When my ideas and concepts are effectively conveyed to the student, I feel the happiness of being a teacher. For me it is pleasure and happiness that not only satisfy the survival need, but also meet the sense of accomplishment. Being a good actor is the first level of my teaching career, but is that enough?

Be A Good Director!

I find that each student is a good educational resource in the teaching process, either undergraduate or MBA students. Confucius said that there must be a teacher of mine among every three people, indicating that under effective class organization, everyone can become an educator. Everyone has his or her own way and perspective of observing the world, so each of us has the potential to become someone else's teacher. Students from all walks of life make statements or share opinions, bringing cognitive improvement to teachers, and teachers feed back to students, which is so-called teaching others teaches yourself.

In the class organization, if the teacher can mobilize the students to participate in, organizing the class into a vivid film, getting more good actors and actresses involved, his or her identity is supposed to be a director, with ideas and thoughts conveyed through these good characters.

For a director, the quality of ideas and concepts determine the standard of the film. By the same analogy, there are two defects in organizing a class with the role of director. First, as a director, he is partial to certain actors, so is he to some students in the class. Second, the performance of the director also has a great impact. A good director doesn't always direct good films.

This is the second level of my self- identity as a teacher -- to be a good director, conducting the class in a better direction for which I have worked for many more years. The question is, if a teacher plays the role of a director, his or her own qualification and the preference of choosing actors would make occasionality happen. So how can we make more effective class organizations?

A Conductor Might Be Better?

Naturally, with the mission of better class organization, I thought of a third role for a teacher-- the conductor of an orchestra. Education should be a process for everyone to move forward together, thus each role in the classroom should have opportunities to present value and energy. As a conductor, in addition to his own understanding of music, he needs to mobilize all available bandsman resources, helping the team to form a resultant force to conduct a graceful melody full of connotation.

Students in both undergraduate and MBA programs coming from all walks of life have their own experiences and hobbies. It would be a contribution to the class if they can share their stories and opinions. A good university is not only for good teachers to convey knowledge, but also for students to exchange ideas and communicate with one another. A good conductor is to combine these resources to play a symphony.

If you become an excellent conductor in the classroom, have you reached the highest level as a teacher? Certainly, there will be limitless space for improvement. Your musical expression is still subject to two limitations by now. First, whether your musical perception reaches a certain level. Second, whether you can find the right bandsman to express your music in the existing band. Both of these limitations exist for teachers. How to break through for a person specializing in knowledge cognition once the cognitive space is limited? Also, in a limited space, you may lack the student resources to motivate your teaching. How can we go further as teachers?

Try to Be A Judge!

The Internet educational environment may solve both of the above challenges. As college educators, can we improve cognition with the external help of Internet? For student, traditional classroom learning cannot meet the needs of the Internet era, so it is necessary to keep learning new knowledge, actively to seek effective methods and improve the cognitive framework with problems in mind. This means students will need an autonomous learning space that can effectively connect the interaction between educators and learners.

How to create such kind of self-organized learning space? Traditional teaching space will be subject to the limitation of physical space. Nowadays, good universities including Harvard, Tsinghua, Peking and Tongji University all need such teaching space in which everyone get together for learning and communication, generating benign conflicts. But as it relies on a tangible space, is there any way we can be free from the limitation of physical space?

Imagine an attractive scene that everyone can share their knowledge and drive others to study regardless of their location and identification of students or teachers. With the development of Internet, education resources tend to be equal and scattered, transforming the original education propagation monopolized by professors into a process that everyone can equally share and educate one another. I believe the future education will be an interactive and self-organized cooperative learning process.

This interaction needs an interface or a kind of learning ecology that educators should try to build, promoting its birth and growth. Under such circumstance, educators should act as judges, who do not handle affairs by themselves, but make arbitrament for conflicts, keeping the learning system running by protecting fairness and efficiency. These efforts would create a more broad education scene with more vitality and influence on more people. This is my expected role, and I hope I can realize this vision in my lifetime, becoming a judge of educational ecology.

龙凤铭 2013 级 MBA 校友

激活“舒适区”——我们与成功差的也许就是这一步

从同济 MBA 毕业后，我投身于教育培训行业，有机会接触形形色色的企业和个人，了解了他们深受困扰的一些问题。其中最为突出的问题有两个：第一，组织究竟如何去挑选和培养团队是最利于发展的？第二，个人究竟要通过什么样的职业路线来实现自己的价值？

在职场中经常会碰到这样的情况：企业越来越意识到人才的重要性，努力地吸引人才、组建团队，想通过团队的力量来提升组织效率，但是却往往感觉委屈。因为很多时候，花了很大的代价去寻找人、培养人，结果这些人并没有成长到组织期望的样子，没给组织带来价值，甚至可能背道而驰。个人越来越重视自身成长，满腔抱负想在职场中实现自己的价值，很多时候很努力地想做好某件事情，但是结果却往往不尽如人意。当然，我们这里探讨的都是积极主动想改变现状、持续提升的组织和个人。可以看出，即使是积极主动想去改变和提升，但是仍然会有很大一部分组织和个人得不到理想的结果，这都是因为我们没有激活“舒适区”。

舒适区（Comfort zone）指的是一个人所表现的心理状态和习惯性的行为模式，人会在这种状态或模式中感到舒适。一旦走出这个区域，人们就会感到别扭、不舒服，或者不习惯。目前有观点认为，人如果想快速成长，必须走出“舒适区”、打破“舒适区”。组织方也不断地对个人做引导，结果他们都纷纷跑到或被跑到“舒适区”外去奋斗，最后一事无成。甚至许多人将打破“舒适区”更多地看成是跳槽，结果在一个企业或一个岗位没有做多少年就东跳西跳，跳了十多年，最后发现越来越不如从前。这对于组织和个人来说都是不利的。

经过我多年的观察，在某个领域有成就的人，都是热爱自己所从事的事业或职业的。乔布斯就说过这么一句话：“成就一番伟业的唯一途径，就是热爱自己的事业。”所以他为苹果而痴狂，甚至在身体出现重大问题的时候仍旧继续坚持，最后才创造了苹果的神话。如何才能达到热爱的境界？人在“舒适区”觉得舒服、放松、稳定、能够掌控、很有安全感，这样才有热爱的理由。所以，只有激活“舒适区”，才能释放出自身的“超能量”。

我非常幸运地提前找到了自己的“舒适区”。我的“舒适区”里有很多因子：性格外向、亲和力强、喜欢与人打交道、热爱学习、喜欢诚信、助人、喜欢和谐、有目标感、效率高、行动力强、喜欢带领团队、注重团队合作、喜欢正能量 ...... 我一路走来所从事的岗位和职业都与它们有关。在营销岗位工作了 15 年，在教育培训职业上耕耘了 10 年，在创业路途上奋斗了 8 年，每个提起都是“初恋”般热爱，就是因为我激活的都是属于我“舒适区”的因子，所以释放出了自己的“超能量”。包括能够进入同济大学深造，在没有 985、211 第一学历的情况下，同济大学依然以海纳百川的胸怀接纳了我。我想，很大程度上是因为同济大学面试组委会发现了我的“舒适区”，并看到了能成长为工商管理人才的舒适因子。在此，我深深地感激我的母校——同济大学。

如何去寻找到属于自己的“舒适区”呢？优势吗？兴趣吗？这些都不够全面，它与我们的性格特征息息相关。九型人格法是分析性格最为全面和权威的方法。九型人格学 (Enneagram) 按照人们习惯性的思维模式、情绪反应和行为习惯等性格特质，将人分为九种，称为九型人格。九型人格被广泛的应用到个人成长、职业选择、人际关系、婚姻关系、亲子关系、企业管理、团队建设、销售技巧、教育培训、心理辅导等诸多领域。

为了便于大家去辨识自己属于哪种类型以及拥有哪些舒适区的因子，我整理了一张对照表如下：

性格型号	性格特征	行为特质（部分）	舒适区（部分）	适配岗位参考
1 号完美型	偏内向	黑白分明，对是对，错是错，无灰色地带；喜欢责难批评和挑错，做人公正，严于律己，有节制；做事一定要有效率，注重细节，追求完美，系统计划性强；勤劳、讨厌懒惰。	偏内向、公平、公正、讲原则、讲诚信、有秩序、注重细节、精益求精、勤奋、批判思维、计划性强、AQ 高	质检、生产、财务、法务、纪检、监查、EHS、薪资、裁判等
2 号助人型	偏外向	感性、乐于帮助他人，时常感觉自己付出得不够，渴望被爱，易嫉妒；深信助人为快乐之本，甘于牺牲，可是也有强烈的占有欲，要求他在乎的人也在乎他。	偏外向、喜欢帮助人、付出、奉献、有耐心、有亲和力、感性、热情、温和、先人后己、EQ 高。	服务、人事、后勤、文秘、销售、总助、培训、工会、公关等
3 号成就型	偏外向	目标导向，重视名利，是个实用主义者；在意自己在别人面前的表现，竞争心强；让人看到最好的一面，自信，有活力，喜欢出风头。做第一，被认可，成为仰慕与关注的对象。	偏外向、喜欢跟人打交道、目标感强、高效率、争上游、爱学习、口才好、注意形象、有活力、EQ 高。	销售、公关、带团队、开拓、市场开发、谈判、演讲、培训等
4 号浪漫型	偏内向	思想浪漫，幻想力强，对事物有独特的见解，喜欢通过有美感的事物去表达个人感情；内向，情绪化，有艺术气质，经常在思考生命的意义和追求独特，不肯参与不明白或不认同的事情。	偏内向、爱独处、喜神游、追求独特、向往浪漫、艺术鉴赏能力强、较自我、偏忧郁、创作智能高。	设计、创意、文艺、鉴赏、茶艺、艺术、写书、书法、戏剧等
5 号思想型	偏内向	热衷于寻求知识，喜欢分析事物及探讨抽象的观念，从而建立理论架构；喜欢在思维的世界中自给自足，钻牛角尖，但是缺乏行动力；专注于工作事件，内心不喜欢与人打交道。	偏内向、爱独处、爱分析、爱思考、爱研究、爱探索、逻辑思维强、系统思考、人际关系淡漠、IQ 高。	策划、科研、谋略、资料、技术、研发、股市、战略布局等
6 号忠诚型	偏内向	认同及服从权威，有责任感；对待家人、朋友及所属的团体有持久的忠诚及承诺；做事优柔寡断，十分谨慎，容易焦虑；面对异己时容易陷入矛盾，进退维谷，迟迟不回应。	偏内向、服从权威、风险意识强、做事谨慎、思前顾后、居安思危、容易焦虑、决策稳健但偏慢，AQ 高。	总助、财务、外派、法务、运营、审查、EHS、监查、质检等
7 号活跃型	偏外向	外向，非压抑性，习惯我行我素，见闻广博；贪玩，沉迷于物欲，享乐主义者；不在意别人的感受，“语不惊人死不休”；喜欢探索新鲜事物，深谙自我娱乐之道。	偏外向、喜无拘无束、爱刺激、爱快乐、懂幽默、爱探索新鲜事物、贪玩、贪吃、创作智能高。	公关、销售、文艺、创意、设计、策划、小品、活动策划等
8 号领袖型	偏外向	爱操控他人与环境，每件事情上都有抉择权，敢冒险，事业心强，是掌舵人、创业者；任性、有攻击性与扩张性，感觉不到被尊敬或重用时，而会另建王国；果断敢承担，有保护性。	偏外向、爱掌握、爱指挥、喜欢带领团队、有责任心、敢担当、敢冒险、有战略眼光，AQ 超级高。	领导、管控、开拓、带团队、执法、销售、战略、开辟疆土等
9 号和平型	偏内向	甘于现实，相信命运，认为“命中有时终须有，命中无时莫强求”，不求调整，害怕冲突，不愿竞争，人云亦云，没有自己的立场；对生命表现的不甚热衷，有颇强烈的宿命。	偏内向、相信命运、喜和谐、讨厌冲突、善于倾听、善于协调关系、较贪吃、贪睡，EQ 较高。	工会、人事、行政、后勤、仓管、文秘、员工关系、谈判等

每种性格的人“舒适区”不同，舒适感帮助他们在适合的领域内不断成长。

作为组织来说，除了对学历和经验的评估，更重要的是要去发现团队员工的“舒适区”，并激活他们的舒适因子。比如，可以用有外向性格、喜欢与人打交道因子的员工（2、3、7、8 号）去做营销，让他们充分地发挥出自己喜欢跟人打交道的舒适感，这样更容易出成绩；比如，可以用有爱分析、爱研究、逻辑性强因子的员工（5 号）去做研发，他们会乐此不疲、成绩斐然；再比如，可以用有重原则、守诚信、公平公正因子的员工（1 号）去做质检，他们会将此工作做得很棒，而且感觉有价值感。

作为个人来说，更要知道自己的“舒适区”在哪里，知道有哪些舒适因子，有利于开展哪种类型的工作，以此为基调来制定自己的职业路线。如果里面的因子不能支持自己所从事的职业时，就要重新进行审视和思考，要么调整职业路线，要么去跟有理想舒适因子的人群学习，从而扩大自己“舒适区”。第二种方法相对较难。

组织要想释放出团队的“超能量”，一定要激活团队员工的“舒适区”。个人要想让自己在职场中释放出“超能量”，一定要激活自己的“舒适区”。JUST TRY! YOU ARE THE BEST。

LONG Fengming
MBA alumni

TO ACTIVATE THE COMFORT ZONE—— THE LAST STEP TO SUCCESS

I started to engage in educational training industry after graduating from Tongji MBA program, having the opportunity to encounter various enterprises and individuals and understand some of their problems. Two of the most typical problems are: first, what is the most effective way for an organization to choose and cultivate teams for the benefit of its development? Second, which kind of career path should an individual take to realize his or her value?

It is common to see such a situation in the workplace: the enterprises are increasingly aware of the importance of talents, and endeavor to attract talents and build teams, aiming to promote the efficiency of the organization through the power of the team, but often feel wronged for great efforts on hunting and cultivating people with no expected return. The employees neither develop as expected nor bring value to the organization, and may even be the opposite. Another situation is that individuals attach great importance to personal growth, and are ambitious to achieve their own value in the workplace. They try to do something well, but often end up with a dissatisfactory result. Here we're definitely talking about organizations and individuals that actively seek changes to status quo and continuous improvement. Nevertheless, we can see there are still a large part of the organizations or individuals cannot get ideal results though they work actively to change and improve. It is because they have not activated the "comfort zone".

Comfort zone refers to the mental state and habitual behavior pattern that a person presents, in which he or she feels comfortable. Once walking out of the area, people feel uncomfortable, awkward, or unaccustomed. One view is that if people want rapid growth, they have to get out of the "comfort zone", or break the "comfort zone". Organizations also constantly make such kind of instruction, as a result, people run or are pushed outside of the "comfort zone" for striving, with nothing achieved in the end. Many even regard breaking the "comfort zone" more as job-hopping, changing jobs frequently from one enterprise or a position without many years' accumulation, and finally getting a worse ending, which is neither good for organizations nor individuals.

Over the years, I have observed that people who are successful in a particular field love their jobs or careers. Jobs once said, "The only way to achieve great things is to love what you do." So he became obsessed with Apples and continued to persist regardless of physical health, and finally created the Apple myth. How can we reach the state of love? People in the "comfort zone" feel comfortable, relaxed, stable, able to control and safe, so that there is a reason to love. Only by activating the "comfort zone" can we release our "super power".

I am very lucky to find my "comfort zone" in advance, in which there are many factors: outgoing personality, strong affinity, enjoying working with people, love for learning, faith, helping others, preference for harmony, a sense of purpose, high efficiency, strong power for action, preference in leading teams, team work spirit, positive energy... I have been doing jobs and career associated with these factors all the way: 15 years in marketing positions, 10 years in education and training industry, and 8 years in the entrepreneurial journey. I love each of them as "first love", because I have activated factors belonging to my "comfort zone", thus releasing my "super power". It is also the case for my admission to Tongji University. In the absence of a first degree from 985 or 211 universities, Tongji accepted my application with her broad heart. I think it was largely because the interview committee found my "comfort zone", and saw the factors that would make me grow into a talent in business administration. Hereby I am truly grateful to my alma mater, Tongji University.

How to find your own "comfort zone"? Advantage? Interests? These are not comprehensive enough. It's closely related to our personality traits. Enneagram is the most comprehensive and authoritative method to analyze personality. According to people's habitual mindset, emotional reactions and behavioral habits, Enneagram divides people into nine types, which are called nine types of personality. Enneagram has been widely applied to personal growth and career choice, interpersonal relationship, marital relationship, parent-child relationship, enterprise management, team building, sales skills, education and training, psychological counseling, and many other fields.

In order to make it easier for you to identify which type of person you are and what factors you have in your comfort zone, I make a comparison table as follows:

Personality type	Personality traits	Behavioral traits (part)	Comfortable zone (part)	Suitable position reference
No.1 Perfectionist	Introverted	Black or white, no gray zone. Critical, fair, strict and abstemious. Efficient, detail-oriented, pursue perfection and have a strong system plan. Diligence and aversion to laziness.	Introverted, fair, just, principled, honest, orderly, detail-oriented, diligent, critical thinking, planning, high AQ	Quality inspection, production, finance, legal affairs, discipline inspection, supervision, EHS, salary, judge, etc
No.2 Giver	Extroverted	Sensitive, willing to help others, eager to be loved, easy to envy. Convinced that helping others is the root of happiness and willing to sacrifice, but also possessive, requiring same return from people they care about.	Extrovert, like helping others, patient, affinity, sensibility, enthusiasm, gentleness, high EQ.	Services, personnel, logistics, secretarial, sales, general assistant, training, trade unions, public relations, etc
No.3 Achiever	Extroverted	Goal oriented, value fame and fortune, pragmatist. Care about performance in front of others, high competition consciousness. Let others see the best side, confident, energetic, like to show off. Be the first, be recognized, be the object of admiration and attention.	Extroverted, like to deal with people, strong sense of purpose, high efficiency, competition consciousness, love learning, good eloquence, attention on image, vitality, high EQ.	Sales, public relations, team leading, development, marketing development, negotiation, speech, training, etc
No. 4 Romanticist	Introverted	Romantic thoughts, strong imagination, unique views on things, like to express personal feelings through aesthetic things. Introverted, emotional, artistic, often thinking about the meaning of life and pursuit of uniqueness, unwilling to participate in things that they do not understand or agree with.	Introverted, solitary, fond of mental traveling, pursuit of uniqueness, yearning for romance, strong artistic appreciation, self-centred, melancholy, creative intelligence.	Design, creativity, literature and art, appreciation, tea art, art, writing, calligraphy, drama, etc
No.5 Thinker	Introverted	Keen to seek knowledge, like analyzing and discussing abstract concept, so as to establish a theoretical framework, self-sufficiency in the world of thinking, hair-splitter, lack of action, focus on work, don't like dealing with people inside.	Introverted, solitary, analytical, thinking, research, exploration, logical thinking, systematic thinking, indifferent interpersonal relationships and high IQ.	Planning, research, strategy, data, technology, research and development, stock market, strategic layout, etc
No.6 Loyalist	Introverted	Recognition and obedience to authority, responsible. Long lasting loyalty and commitment to family, friends and community. Indecisive, cautious and anxious. In the case of dissent, easy to fall into contradictions and dilemma, and delay in responding.	Introverted, obey to authority, risk conscious, cautious, anxious, steady but slow in decision-making, high AQ.	General assistant, finance, assignment, legal affairs, operations, investigation, EHS, supervision, quality inspection, etc
No.7 Enthusiast	Extroverted	Outgoing, not depressive, persist own way , informative, naughty, material desire, hedonist, don't care about others' feeling, unusual talking, like to explore new things, self entertainment.	Extroverted, fond of freedom, stimulating, happy, humorous, exploring new things, playful, gluttonous, creative intelligence	Public relations, sales, literature and art, creativity, design, planning, event planning, etc
No.8 Leader	Extrovert	love to control others and the environment, decision-making power, risk-taking, entrepreneurship. Self-willed, aggressive and expansive, once not feeling respected or valued, will build another kingdom. Decisive, dare to take responsibility, have protection.	Extrovert, controlling desire, commanding, team leader, responsible, risk taking, strategic, super high AQ.	Leading, controlling, developing, team leader, law enforcement, sales, strategy, territory opening up , etc
No.9 Peacemaker	Introverted	Willing to be realistic and believe in fate, not keen to adjustment, fear of conflict, unwilling to compete, no own standpoint, strong predestination.	Introverted, believe in fate, like harmony, dislike conflict, good at listening, good at coordinating relationships, more greedy to eat and sleep, high EQ.	Labor unions, personnel, administration, logistics, warehouse management, secretarial, staff relations, negotiations, etc

People of each personality have different "comfort zones", and comfortable feeling helps them grow in the right fields.

As an organization, in addition to the assessment of academic qualifications and experience, it is more important to discover the "comfort zone" of its team members and activate their comfort factors. For example, employees with outgoing personality who like working with people (No.2, 3, 7, 8) can be arranged to do marketing, which enables them to fully enjoy the comfort of working with people, and makes it easier for them to make achievements. Similarly, arranging employees with strong analytical, research and logical factors (No.5) to do research and development would make them feel delightful and obtain remarkable achievements. Another example is to arrange employees with a strong sense of principle, integrity and fairness factor (No. 1) to do quality inspection, which would make them do a great job and achieve a sense of fulfillment.

As an individual, it is important to know where is the "comfort zone", what are the comfort factors that help to carry out a specific type of work, and to set it as a fundamental keynote to design your own career path. If the factors inside can't support your career, self-examination and deep thinking are necessary -- to adjust the career path, or to learn from people who have ideal comfort factors so as to expand the "comfort zone", however, the second path is relatively difficult.

Organizations must activate team members' "comfort zone" to release the "super power" of the team, while individuals must activate their "comfort zones" if they want to release their own "super power" in the workplace

.*JUST TRY! YOU ARE THE BEST.*

Warm prompt: Enneagram is an abstruse subject, readers who have interests can subscribe to Helen Palmer's Enneagram, also can contact me (Long Fengming: WeChat & TEL 13915035605) Let's jointly explore its magic charm.

实际上，区块链并不是为了解决技术问题而存在的。我们把时间回溯到 2007 年 4 月，美国第二大次级房贷公司新世纪金融申请破产；7 月，美国政府以可能达 2000 亿美元的代价接盘房地美及房利美。然而，风险依然从房地产领域蔓延到了金融领域，以欺诈博得利益的金融机构，为他们不负责任的低估风险付出了代价。

2008 年 9 月，风雨飘摇中的华尔街，雷曼兄弟破产，抱着纸箱走出第七大道 745 号的金领们，成为当天所有报纸的新闻头条。即便 65% 的民众反对，美国政府依然调拨了 7000 亿美元去纾解金融巨头们的困难。和美国一样，其他西方国家政府也采取各种措施为金融巨头们续命。摩根大通、美国国际集团、美国银行、花旗集团、贝尔斯登、美林证券等等都在这并不光彩的名单上。

在深入了解了区块链技术之后，许多人，尤其是对技术有一定研究的人员表示大失所望。原因无他，不过是区块链所用到的密码学、分布式数据库、点对点网络、共识算法、数字签名、时间戳、去中心化等技术理念都是从业者们耳熟能详甚至沿用多年的。把一些已经应用的技术拼装起来，哪来如此大的吸引力呢？

发明 10 年后 我们应当真正开始关心区块链

张以哲
2014 级 MBA 校友

2008 年 11 月 15 日，G20 声明：“市场参与者一味追求更高的收益而对风险没有足够的认识，未能善尽行使调查之责。与此同时，脆弱的偿付标准、不健全的风险管理实践、日益复杂且不透明的金融产品、和因此产生的财务杠杆过高现象组合在一起，导致了整个金融系统的脆弱性。一些先进国家的决策者、管理者和监管者，未能跟上金融创新的步伐，对潜伏并滋生在金融市场里的风险进行充分理解，及时处理，对国内监管行为产生的系统性影响也考虑不周。”——全球性的经济衰退于斯开始。

11 月 1 日，当时并没有太多人关注的一篇论文——《比特币：一种点对点的电子现金系统》悄然出现在网络上。中本聪描述了一种不需要像次贷危机里穷形尽相的第三方机构，就可以解决互联网上的交易系统，采用区块链技术，人们第一次看到了可以替代“信用”这一基础的密码学方法。运用精妙的代码哲学，中本聪重新定义了人和人的平等交易，从某种意义上革新了生产关系。正如维基解密创始人阿桑奇所声称，匿名的中本聪是一位“赛博朋克”。区块链的诞生，从一开始就是为了解决金融系统已经无法适应新时代的问题的，只不过恰巧采用了技术手段而已。

区块链这一思想诞生至今已经接近十年了。2016 年起，大多数人由于数字货币的暴涨而关注起了区块链，实际上是将一个伟大的思想狭隘化了。在区块链领域，只关注数字货币，恰似忽视了蒸汽机的动能，而去关注冒出来的白色雾气。

实际上，不少区块链从业者在研究过程中认为，以比特币为标志的区块 1.0，主要诞生了数字货币技术；以以太坊为标志的区块链 2.0，主要诞生了可编程区块链技术；关于区块链 3.0，目前还是众说纷纭。但是不少人认为，区块链最终还是要解决现实矛盾，解决目前的金融、互联网等系统存在的客观问题。因此，从思想层面，我们也可以把区块链细分成原教旨主义区块链思想和或称实用主义区块链思想。

所谓原教旨的区块链，主要是指认为虚拟货币就是区块链的唯一价值，抱紧中本聪最原初的论文不放的思想，狭义地认为区块链就是一个去中心化、无法与主流社会妥协的社区共识。代表着未来，而忽略了实际存在的大量问题。所谓实用的区块链，主要是指认为区块链代表了先进生产力的发展方向，可以解决现实社会存在的问题，可以降低企业实践中的种种成本，能够在全球范围内形成新的产业业态。同样代表着未来，但是更关注着发展的根本问题。

量子论的创立者普朗克曾经说：“一个新的科学不能通过说服它的反对者并使其理解而获胜，它的获胜主要由于其反对者终于死去，而熟悉她的新一代成长起来了。”吊诡的是，普朗克后来走向了量子论的反面。和物理学界的量子论一样，技术界的区块链作为有着巨大影响力的新思想，也依赖着我们对它的深入理解和应用，我们的行为决定了区块链的未来。“脱虚向实”是时代的主旋律，互联网的应用最终还是为了改善人们的生活水平，区块链技术也不例外。我们非常高兴看到了大量区块链技术的应用如雨后春笋一般落地，在安防、溯源、确权、金融、游戏等领域的应用，区块链虽然是初生牛犊，却表现出了勃勃生机。虽是初长成，已呈不凡之相。

正如高层所言，区块链和人工智能、量子信息、移动通信、物联网一样，作为新一代信息技术，其应用有着巨大的战略意义。“新一轮科技革命和产业变革正在重构全球创新版图、重塑全球经济结构”。在发明 10 年后，我们应当脱开概念和技术的藩篱，吹散应用与发展的迷雾，远离泡沫与炒作的魔障，真正开始关心区块链的起承转合，真正开始关心区块链将如何改造这个世界。

LIFESTYLE 品 / 生活

DO WE CARE ENOUGH ABOUT BLOCKCHAIN AFTER ITS 10th BIRTHDAY?

ZHANG Yizhe
MBA alumni

Actually, blockchain was never invented to solve technical problems.

Back in April 2007, the second largest U.S. subprime mortgage company New Century Finance filed for bankruptcy. Three months later, the U.S. government took over Freddie MAC and Fannie Mae at a cost of $200 billion. However, risks continued to spread from the real estate industry to the finance industry, and financial institutions profiting from frauds have paid the price for their irresponsible behavior of underestimating risks.

In September 2008, on the tottering Wall Street, Lehman Brothers went broke. Those gold collars leaving 745 Seventh Avenue with packed-up boxes made headlines in almost every newspaper. Despite of the 65% public objection, the U.S. government allocated $700 billion to help the financial giants out. Following the practice of America, other western governments also took measures to save their financial giants. JP Morgan, AIG, Bank of America, Citigroup, Bear Stearns, Merrill Lynch, among others, were all on that ignoble list.

On November 15th 2008, G20 leaders listed some reasons for the previous crisis: "Market participants sought higher yields without an adequate appreciation of the risks and failed to exercise proper due diligence. At the same time, weak underwriting standards, unsound risk management practices, increasingly complex and opaque financial products, and consequent excessive leverage combined to create vulnerabilities in the system. Policy-makers, regulators and supervisors, in some advanced countries, did not adequately appreciate and address the risks building up in financial markets, keep pace with financial innovation, or take into account the systemic ramifications of domestic regulatory actions." Consequently, a global economic recession started.

Many people, especially those who have technology research experience, are disappointed after a thorough understanding of blockchain technology. The reason is that the technical concepts applied in blockchain, including Cryptography, Distributed Database, Peer-to-Peer Networks, Consensus Algorithm, Digital Signature, Timestamp and Decentralization are all concepts that practitioners are quite familiar with and have been using for years. How can it be so attractive since it is merely assembling old technologies?

Two weeks before that statement, Satoshi Nakamoto published a thesis named BitCoin: a point-to-point electronic cash system. In his thesis, Mr. Nakamoto described a system that is able to deal with Internet transactions without greedy third parties like those in the subprime crisis. With the technology of blockchain, people discovered for the first time the method of cryptography that can replace the "credit" foundation. He redefined the equal transaction among people using a sophisticated code philosophy which, in a sense, revolutionized the production relations. As WikiLeaks founder Julian Assange claimed, Satoshi Nakamoto is indeed a "cyberpunk". The concept of blockchain was born to solve the problem where the financial system could no longer adapt to the new era, which just happened to be using old technologies in many other subjects.

It has been nearly a decade since the birth of the idea of blockchain. Most people began to pay attention to it since the explosion of digital currency in 2016, which is why this great notion has been narrowed. In the blockchain industry, only focusing on digital currency is like ignoring the steam engine's kinetic energy but focusing on the steaming white fog.

In fact, after some research, many blockchain practitioners consider that digital currency technology is the main achievement of blockchian 1.0, marked by Bitcoin. In blockchain 2.0 which is marked by Ethereum, programmable blockchain technology is the main creation. Regarding blockchain 3.0, though controversial, many people believe that blockchain is eventually to solve real-life problems in the current financial and Internet systems. Therefore, ideologically, we can go on to subdivide blockchain into fundamentalist blockchain ideology and pragmatism blockchain ideology.

People upholding fundamentalist blockchain ideology believe that virtual currency is the only value of blockchain. They hold high the idea of Satoshi Nakamoto's original paper, restricting in the narrow understanding of blockchain as a decentralized consensus that is unable to compromise with the society. The blockchain in their idea represents the future, which is why they tend to ignore the countless real-life problems. Practical blockchain ideology believers, however, mainly think that blockchain marks the development direction of the advanced productive forces. It can solve the existing problems in the realistic society, thus is able to reduce various costs of enterprise practices, and to form a new global industry format. They also consider blockchain a representative of the future. But it is more focused on the fundamental issues of development.

The founder of the Quantum Theory Planck once said that "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it". However, in a strange twist, Planck eventually went to the reverse side of the theory. Like the Quantum Theory in the field of Physics, blockchain has huge influence as a new idea in the tech world. Also, it depends on our deep understanding and application of it, that is, our behavior decides the future of it. With the practice of "becoming practical" being the theme of our time, the application of the Internet is about improving people's living standard, so is blockchain. It is glad to see a quickly growing number of applications of the blockchain technology in the fields of security, traceability, land approval, finance and game etc. It is new, but full of vitality. At its initial stage, blockchain is already extraordinary.

Just as President Xi said, as a representative of the new generation of information technology, blockchain, together with AI, quantum information, mobile communications and Internet of Things, has a marvelous strategic significance. "A new round of scientific, technological and industrial revolutions are reshaping the world domain of innovation and global economic structure."

On its 10th Anniversary, we really should break the shackles of conceptual and technical barriers, peer thought the mist of its application and development, staty away from the shadow of bubble and speculation, and begin to pay attention to blockchain's development and how it can change the world.

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