Progress Worldwide in Energy and Manufacturing
全球能源及制造业工业互联网进展

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Company and Market Trends
公司与市场趋势

Company level
公司层面

- IoT is a business opportunity, not just a tech opportunity
  物联网代表着一个商业机会，而非仅仅是技术机会
- Disciplined execution across multiple use cases is the path to value
  多个用例的严格执行是实现价值的途径
- IoT is gradually enabling more subscription business models, but consumers are resistant
  物联网正逐步驱动更多的订阅业务模式，但消费者有抵触情绪

Market level
市场层面

- Favorable winds are blowing in heavy industrial sectors
  重工业部门正刮起有利之风
- Chinese IoT firms are winning locally and starting to gain ground globally
  中国的物联网公司在当地取得了胜利并开始进军全球市场

McKinsey & Company (abridged)麦肯锡公司（有删减）

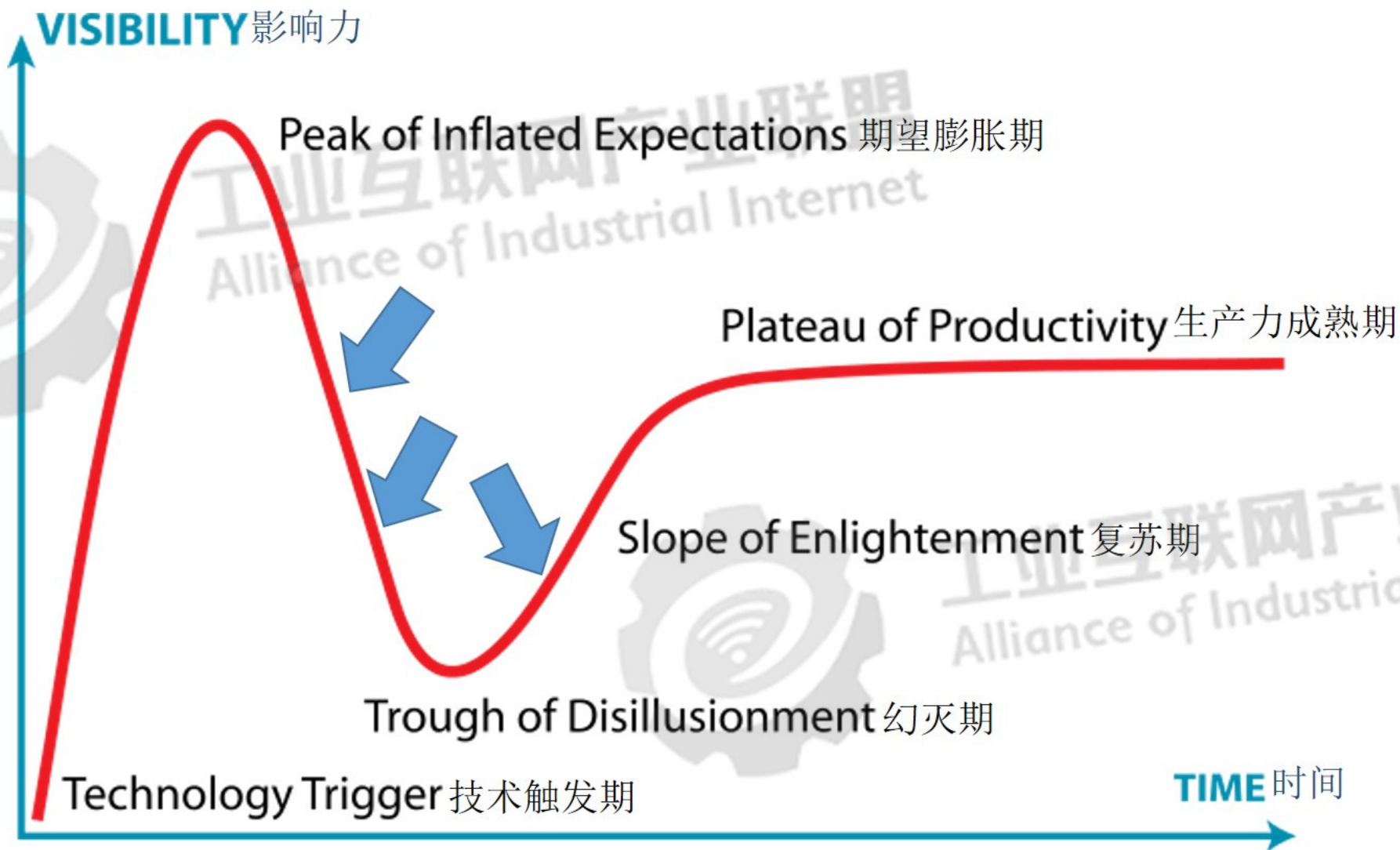# Technology and Data Trends
技术和数据趋势

- Conflicts over data access are delaying business impact
数据访问方面的冲突正延迟业务影响

- Cost pressures are determining whether the cloud or the 'edge' environment wins out as the IoT host environment
成本压力将决定云或"边缘"环境能否成为物联网主机环境

- Cyberattacks are not noticeably derailing existing IoT efforts
网络攻击并没有显著破坏现有的物联网工作

- Artificial intelligence (AI) has caught on in IoT in the past two years
过去两年间，人工智能（AI）开始在物联网中流行起来

Every Industry and Company is at a Different Stage
不同的行业和公司所处阶段不同

VISIBILITY 影响力

Peak of Inflated Expectations 期望膨胀期

Plateau of Productivity 生产力成熟期

Slope of Enlightenment 复苏期

Trough of Disillusionment 幻灭期

Technology Trigger 技术触发期

TIME 时间

Proving Ground for the IIoT Market
物联网市场的试验场

26 Testbeds* proving:

26个试验床，检验：

✓ Interoperability

  互操作性

✓ manufacturing quality improvements

  制造质量改进

✓ real-time control and synchronization of high performance machines

  高性能机器的实时控制和同步

✓ equipment failure predictions

  设备故障预测

✓ efficient utilization of renewable energy resources

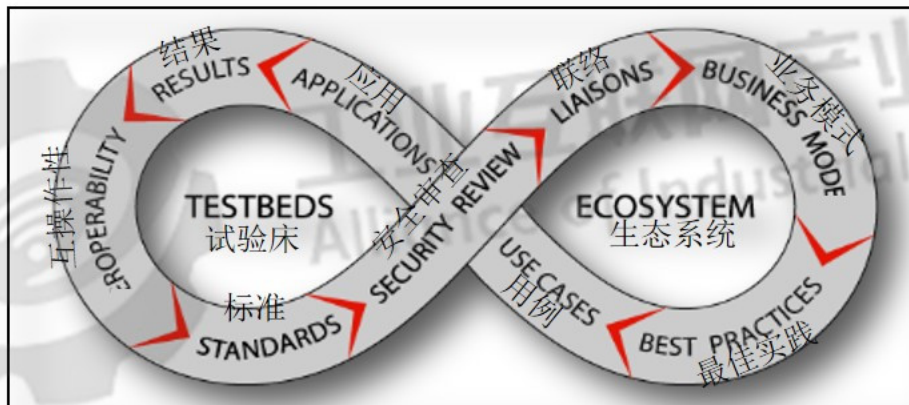 可再生能源的高效利用

✓ public safety improvements

  公共安全改善

✓ and more

  等等

*as of April 2019/ 截至2019年4月

Related activity:

相关活动：

· 40 liaisons fostering collaboration and influencing standards development

  40个联络人，促进合作并影响标准制定

· Testbed feedback is driving standards and open source

  试验床反馈推动标准和开源

IIC Ecosystem at Work
IIC生态系统

Go-to-Market Examples
商业化示例

Participants 参与者	IIC Testbed 试验床	Commercialization 商业化
Bosch 博世	*Track & Trace* *追踪与追溯*	• Commercial deployment in aircraft manufacturing facility 在飞机制造厂中进行商业化部署 • Early results from the testbed are already finding their way into all 255 Bosch manufacturing sites worldwide and in some clients' factories 试验床的早期成果已经进入全球255个博世制造场址以及一些客户的工厂
Huawei/Haier 华为/海尔	*MQM*	• Decrease the false detection rate by 95% 将错误检测率降低95％ • Monitor the physical factory while experimenting with improvements to the production processes without interrupting existing practices 监控实体工厂，同时尝试在不中断现有实践的前提下改进生产工艺
Fraunhofer IOSB/KETI	*Smart Factory Web* *智能工厂网络*	• A German-Korean collaborative web of integrated factories providing adaptation of production capabilities and resources • 德国-韩国综合工厂协作网络，适应生产能力和资源

Influencing Standards
有影响力的标准

Testbeds generate requirements and priorities for standards organizations, solve interoperability issues and culminate in new products/services and improved processes.

试验床将对标准组织提出要求和优先事项，解决互操作性问题，并创造新的产品/服务和改良工艺。

*Track & Trace Testbed*追踪与追溯试验床

- Deployed for commercial use in an aircraft manufacturer facility and some OEM customers for use in car production

  在飞机制造厂和一些汽车OEM客户中进行商业化部署

- Submitted RFP to OMG September 2018 for a new standard "Simple Electronic Notion for Sensor Reporting" (SENSR) for describing data streams emitted by sensors and how that data should be interpreted

  2018年9月向OMG提交新标准"传感器报告的简单电子概念"（SENSR）征求建议书（RFP），其中描述了传感器发出的数据流以及如何解释数据

- Contributing software developed for the testbed to an Eclipse open-source project (the Vorto project)

  将为试验床开发的软件用于Eclipse开源项目（Vorto项目）

Track and Trace Testbed
追踪与追溯试验床

*Distributed Energy Resources Testbed*分布式能源资源试验床

- Influenced the Open Field Message Bus (OFMB) standard

  影响了开放字段讯息总线（OFMB）标准

- Uses OMG's DDS and now employs TSN to synchronize Microgrid renewable energy sources with each other and the power grid

  使用OMG的DDS，现在使用TSN，使得微电网可再生能源相互及与电网同步

- Demonstrated techniques for a 100% renewable power generation-based microgrid.

  基于100％可再生能源发电的微电网示范技术

*Smart Factory Web Testbed*智能工厂网络试验床 contributes to standards including:促进相关标准制定，包括：

- OPC-UA (IEC 62541), AutomationML (IEC 62714), OGC and IETF Geospatial Standards and DIN SPEC 16592

  OPC-UA（IEC 62541）、AutomationML（IEC 62714）、OGC和IETF地理空间标准和DIN SPEC 16592

Other Outcomes from Sample Testbeds
样本试验床的其他成果

Manufacturing Quality Management Testbed
制造质量管理试验床

*Manufacturing Quality Management*制造质量管理:

- Deployed across 2 factory lines in China, improved accuracy of positively identifying passed equipment from 95% to 99% accurate and identification of false positives from 50% to 95%

  在中国的2条工厂生产线上进行了部署，将识别通过设备的准确率从95％提高到99％，并将误报识别准确率从50％提高到95％

Smart Manufacturing Connectivity
智能制造连接

*Smart Manufacturing Connectivity for Brownfield Sensors Testbed*棕地传感器试验床智能制造连接

- Contributes to IO-Link OPC UA Companion Standard

  推动IO-Link OPC UA Companion标准

- Uses: IO-Link IEC 61131-9, IO-Link IO Device Description (IODD), OPC UA

  用例：IO-Link IEC 61131-9、IO-Link IO设备描述（IODD）、OPC UA

Thank you谢谢

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**Things are coming together
一切都步入正轨**

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