

家电&电子行业数字化的挑战，转型与升级之路

技术总监 大中华地区 高科技电子、半导体、医疗行业
陈松盈 Alan Chen

Agenda



电子行业近来的趋势与影响

电子行业转型与升级之路

数字化的核心价值流 NPDI

总结

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总结

Recent Drivers in the Electronics & Semiconductor Market and Ecosystem

驱动电子与半导体市场生态系统的转变因子

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智能接口 和 VR / AR 继续增长

- Augmented Reality to reach \$120B by 2020 (driven by hardware sales).
- Nintendo's market value went up \$9B in 5 days because of AR.



将IoT理念设计运用到新产品中

- Smart TV's include Smart Home hubs for connected products
- Amazon has over 1000 people working on Echo design team to add connected device capabilities



IoT是未来3 - 5年主要驱动市场的发展力量

- 1/6 consumers currently own and use wearable tech.
- IoT: Over 50 billion internet-connected devices will exist worldwide by 2020.



汽车电子和成像电子产品是一个崭新的领域

- Electric vehicles Tesla Model 3 received 400,000 orders in 2 weeks
- US Government opened up \$4.5B in loan guarantees to boost electric vehicle infrastructure

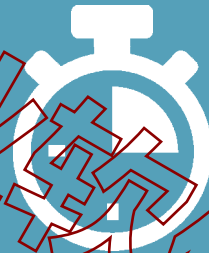


Trends in the Electronics Industry

电子行业的趋势

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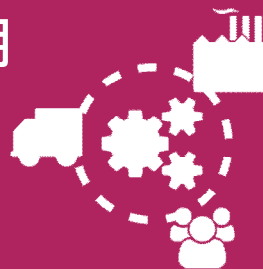
破坏性拉力在这成熟行业
Disruptive pull of
electronics in mature
industries.



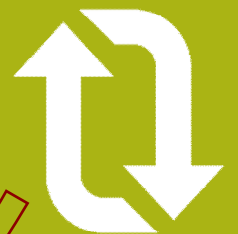
客户多元化正在上升
Customer Diversification
is on the rise.



设备越来越小，越来越聪明
Devices are getting
smaller and smarter.



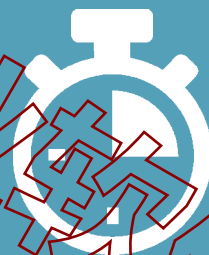
客户体验对成长至关重要
Customer Experience is
essential to growth.



Impacts for the Electronics Industry 对电子行业的影响

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缩短技术创新采用的时间
Shorter technology
Innovation Adoption Time
Becomes Shorter.



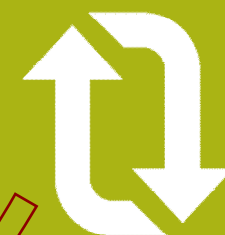
更难实现跨越供应链的协作
同合作
More difficult to enable
collaboration across and
through the Supply Chain.



无法实现零缺陷将导致收入
/市场份额的损失
Inability to achieve zero defect
will cause loss of
revenue/market share.



制造环境需要成为闭环、智
能集成
Manufacturing environment
needs to be closed loop,
intelligent and integrated.



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SIEMENS 愿景:

提供数字化企业整体软件解决方案，使NPDI更加卓越。

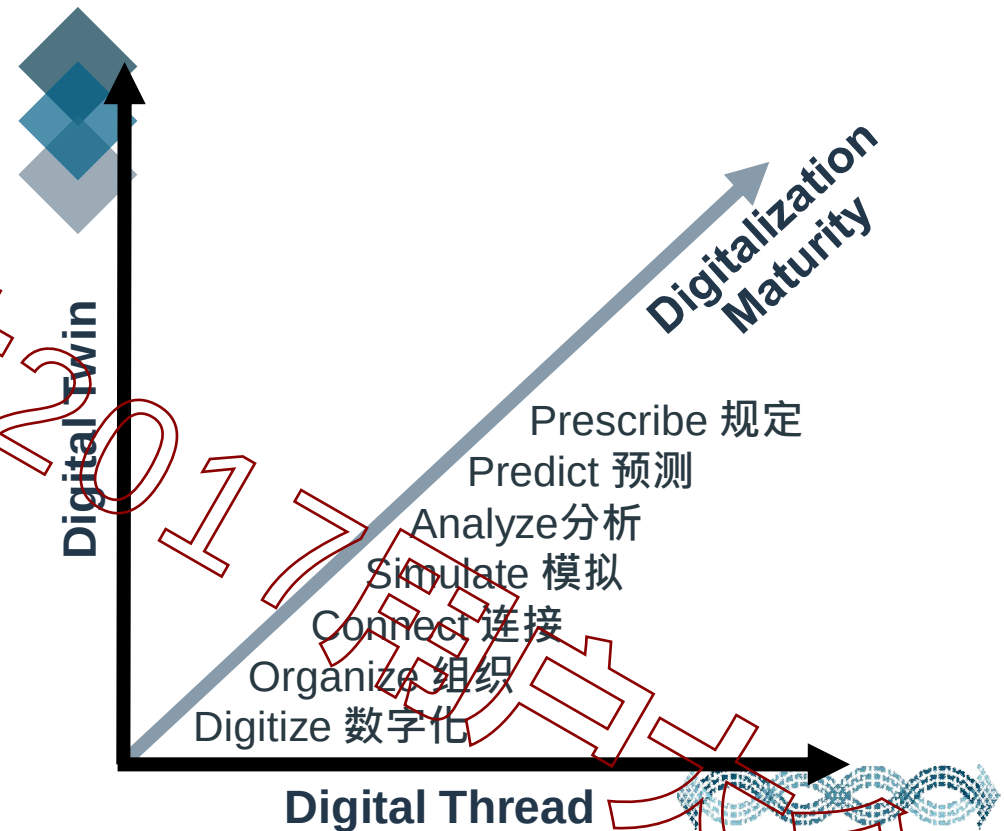
Deliver Holistic Software Solutions to Digitalize the Enterprise, enabling NPDI Excellence.

The Road to Digitalization – Business Process Transformation

数字化、智能化 业务转型与升级之路

SIEMENS

Combining intelligence and connectivity 结合智能 和 连接



Digital Twin of Product 产品数字双胞胎

SIEMENS

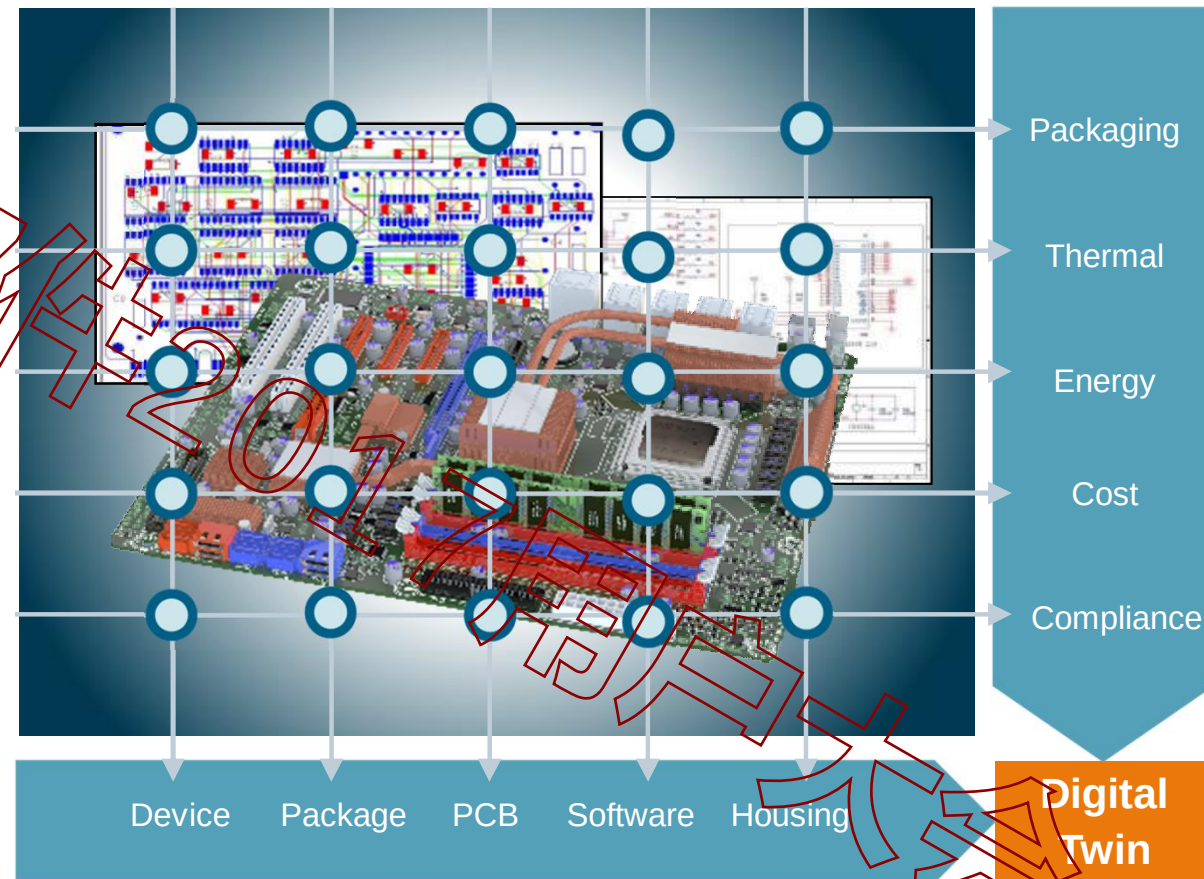
Manage Product Complexity
管理产品复杂性

Optimize competing targets
最佳化竞争目标

Enable modularity and reuse
启用模块化和重用

Balance performance, cost,
compliance
平衡性能·成本·合规性

Integrate disciplines
集成多学科

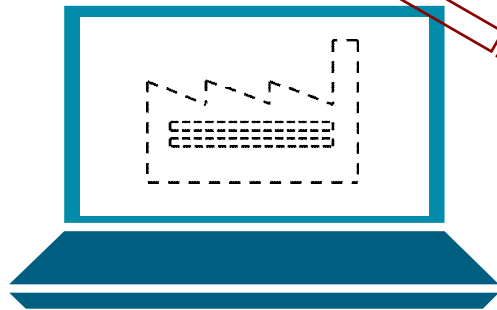


Digital Twin of Production

生产数字双胞胎

SIEMENS

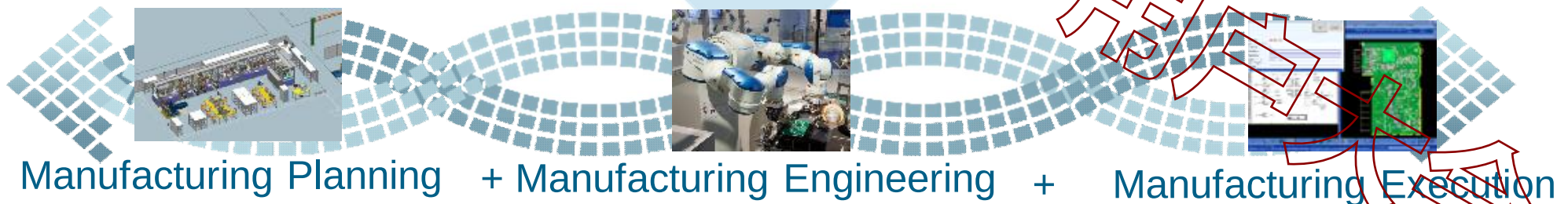
Accurately represent what is real and simulate what is possible
准确地表示什么是真实的，并模拟什么是可能的



Digital Twin



Physical production system



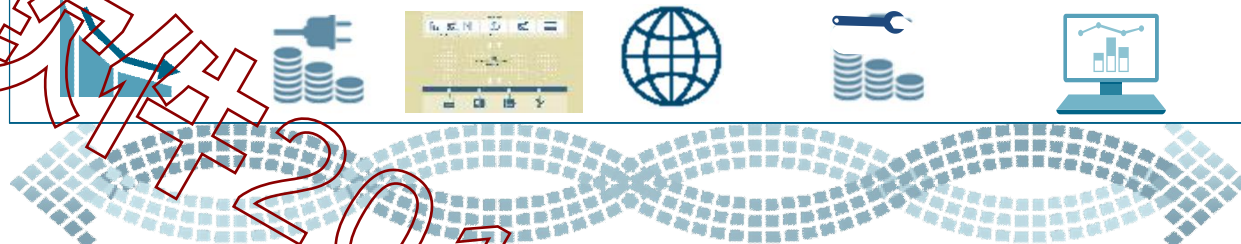
Digital Twin of Performance 性能数字双胞胎

SIEMENS

优化设备性能，能源和资源消耗，维护，服务...

Plant and Machine Analytics 工厂和机器分析

Optimizing asset performance, energy and resource consumption, maintenance, services...



Utilization



Improve customer experience and supplier quality
Contextualize data and discover trends

改善客户体验和发现供应商质量数据的趋势

Product Analytics 产品分析

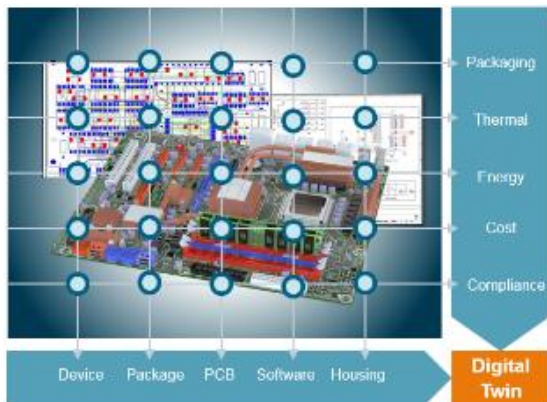
The Siemens Digitalization strategy

西门子数字化战略

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产品数字双胞胎

Digital
Product
Twin



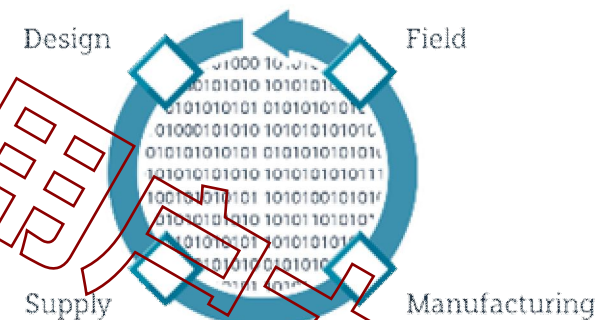
生产数字双胞胎

Digital
Production
Twin



性能数字双胞胎

Digital
Performance
Twin



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Siemens Focus:

Help companies achieve New Product Development & Introduction (NPDI)

西门子聚焦：帮助公司实现卓越的新产品开发与实施（NPDI）

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NPDI Excellence

Provide Solutions to leverage data across multiple domains.
提供解决方案以跨多个领域来使用数据

Help Customers get more benefits from PLM & MOM.
帮助客户从PLM & MOM中获得更多收益

Make strategic acquisitions and investments to service industry specific needs.
进行战略收购和投资，以满足行业的具体需求

Create pre-configured solutions based on industry common practices .
根据行业惯例，创建预配置的解决方案

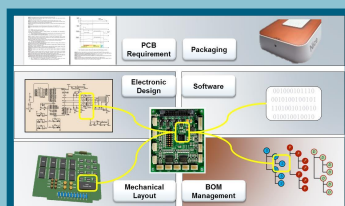
提供具有竞争优势价值解决方案的NPDI数字化平台

数字化平台价值解决方案 Value Streams Solutions with Competitive Advantage Implications

Multi-Discipline Data Mgmt. 多学科数据管理

IMPROVING INITIAL PRODUCT QUALITY

Enabling traceability from requirements thru virtual and physical test to ensure product verification



Integrated Closed Loop / Smart Mfg. 集成闭环/智能制造

CONNECTING ALL PHASES OF MFG

Providing better planning and faster validation of production alternatives to increase the effectiveness and performance of manufacturing operations.



Supplier Collaboration & Mgmt. 供应商协同与管理

EFFECTIVE SUPPLIER MANAGEMENT

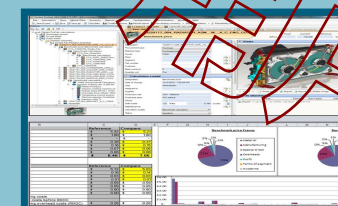
Enabling traceability from OEM requirements to each and every supplier; achieving closed loop communications while protecting IP and meeting export controls



Cost & Compliance Risk Mgmt. 成本与合规风险管理

MEETING COST & PRODUCTION GOALS

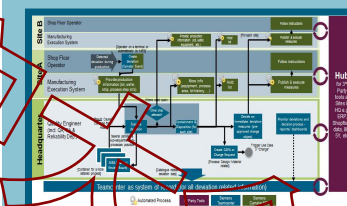
"Shift left" manufacturing planning to ensure cost, schedule & safety goals are achieved with fully integrated factory



Closed Loop Quality Mgmt. 闭环质量管理

CONSISTENCY & SCALABILITY

Optimize and simplify business processes by standardizing and unifying quality related processes and workflows throughout the organization



SIEMENS 数字化企业软件套件 PLM – MOM – TIA

PLM软件组合

- 产品规划、设计、测试和模拟
- 生产计划、工程和仿真

MES/MOM 软件组合

- 工艺规划和调度
- 质量管理
- 制造执行
- 制造智能
- SCADA/HMI

全集成自动化产品组合

- 控制器、分布式I/O、人机接口、驱动器、运动控制和马达的工程与运行时集成
- 工业安全

自上而下的产品驱动

自下而上的过程驱动

无缝集成

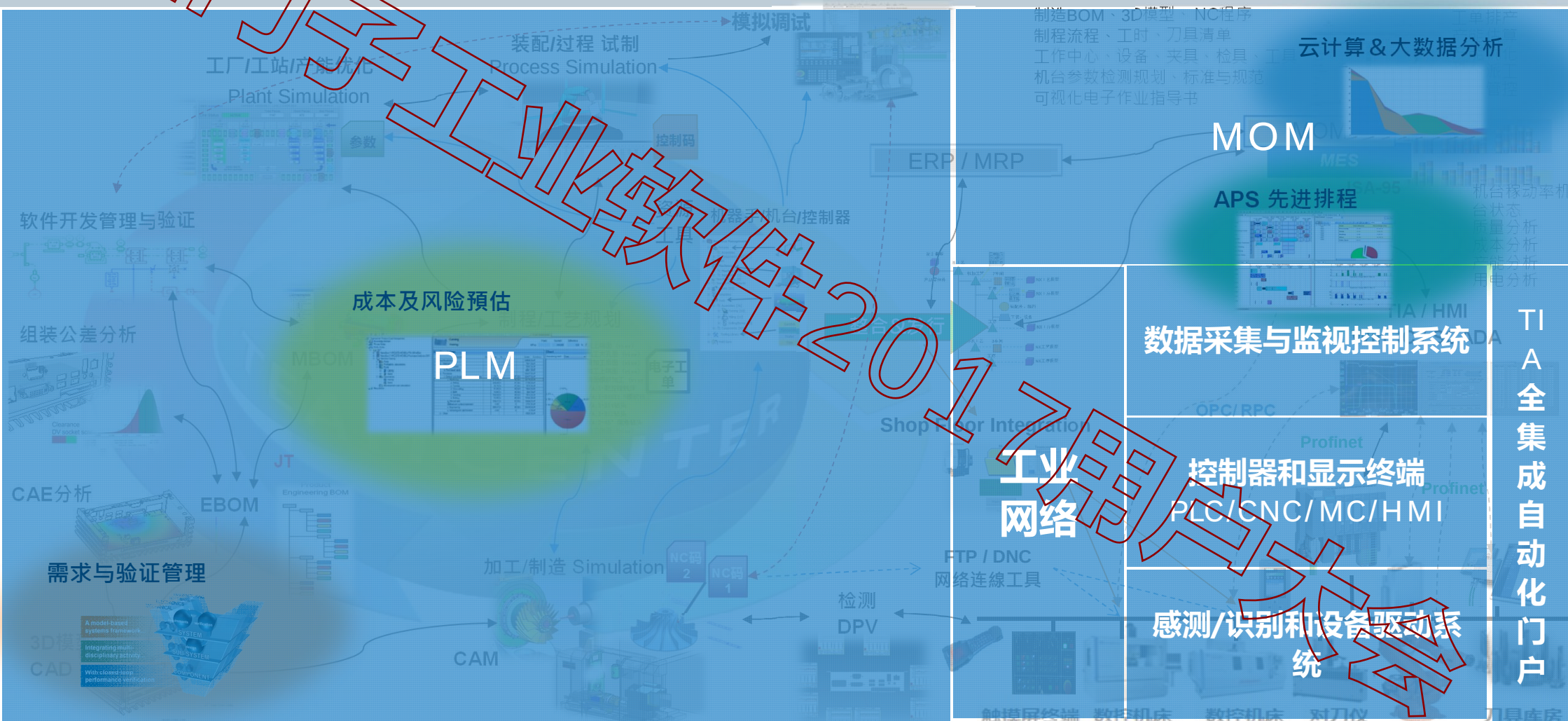
Siemens Collaboration Platform
"Teamcenter"

New Product Development & Introduction (NPDI)

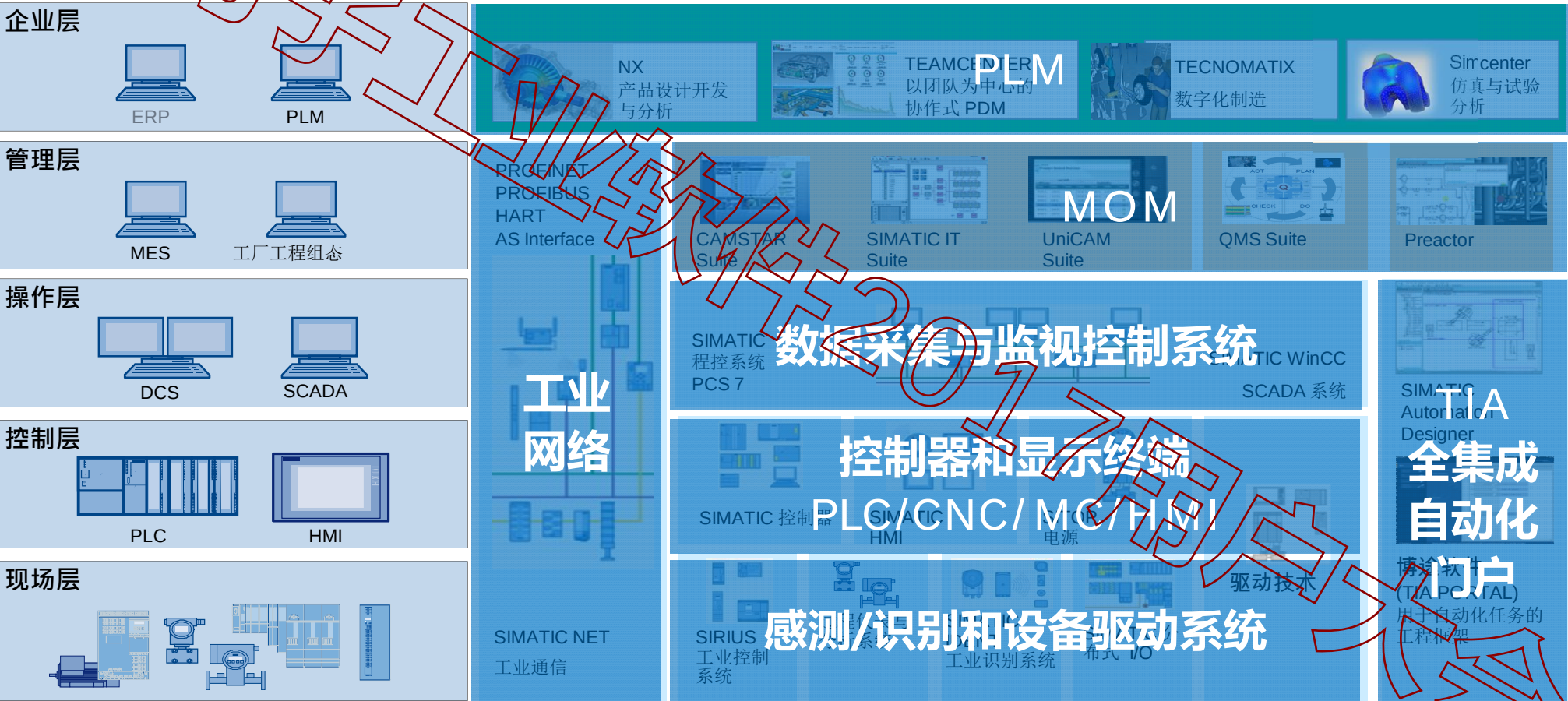
SIEMENS 数字化企业整体解决方案 综览

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Dimensional Planning and Validation



SIEMENS 数字化企业解决方案五层架构

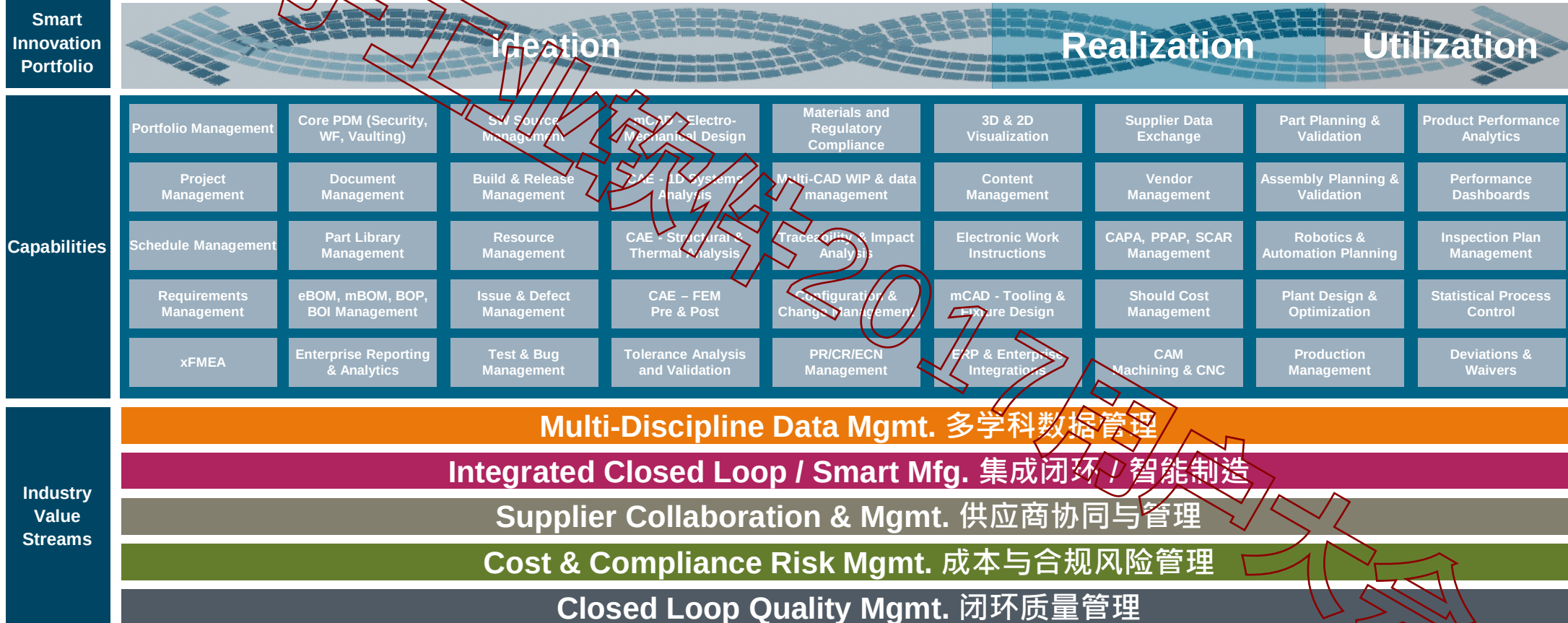


Digitalization Platform for Electronics

数字化平台 for 电子业

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NPDI Excellence

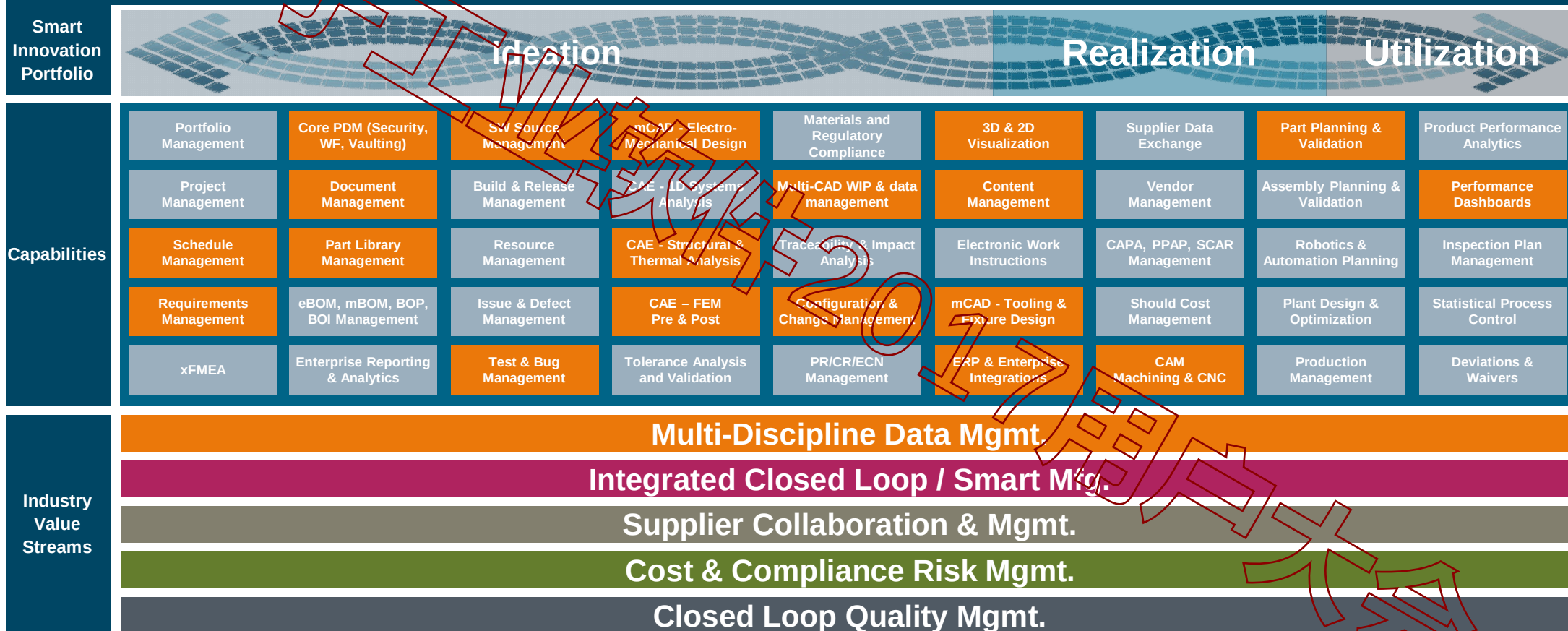


Digitalization Platform for Electronics

多学科数据管理

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NPDI Excellence

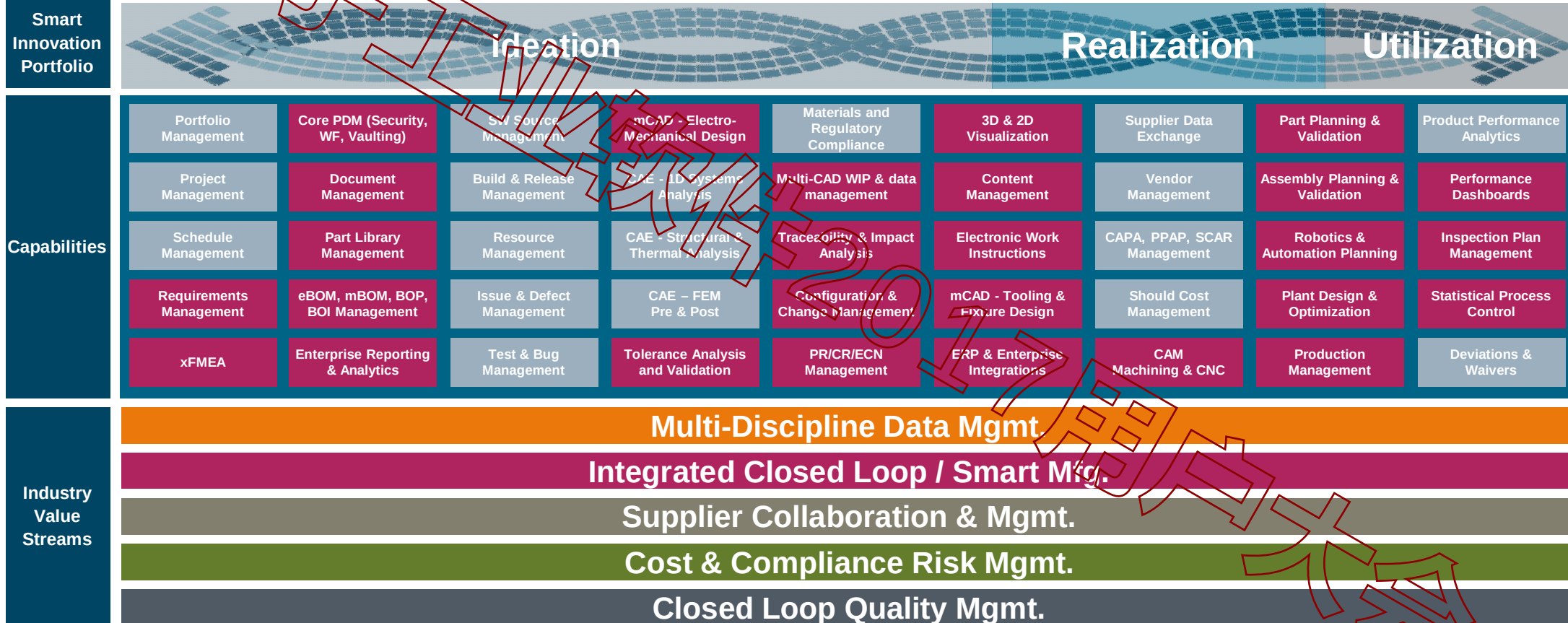


Digitalization Platform for Electronics

集成闭环 / 智能制造

SIEMENS

NPDI Excellence

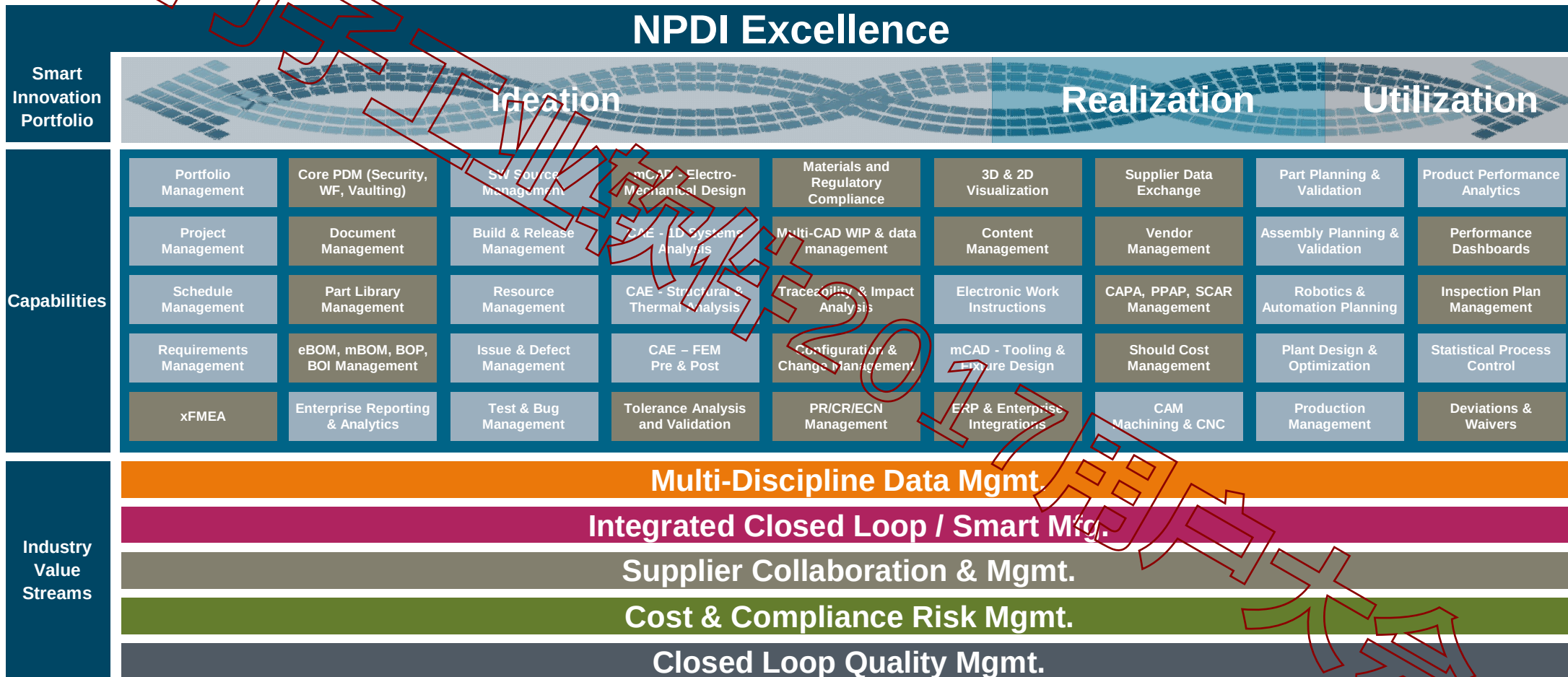


Digitalization Platform for Electronics

供应商协同与管理

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NPDI Excellence

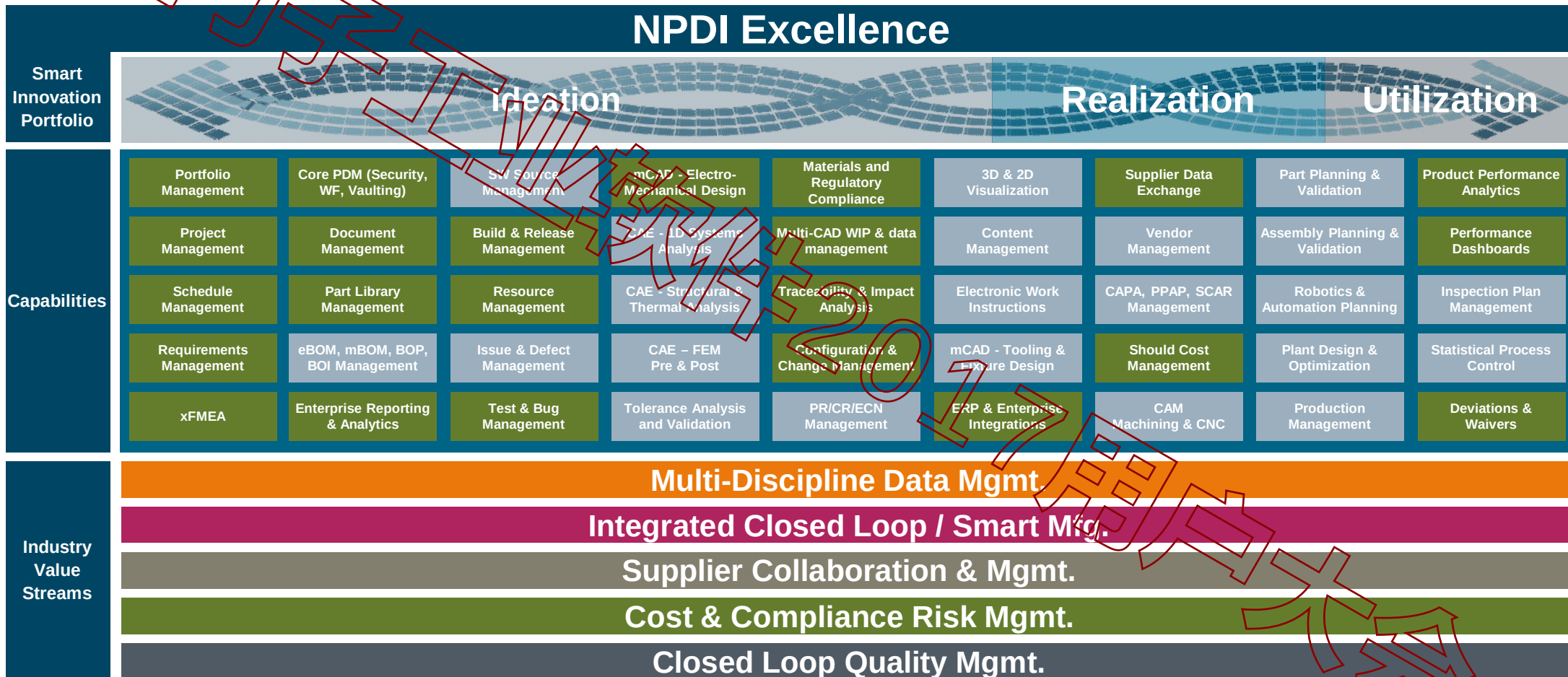


Digitalization Platform for Electronics

成本与合规风险管理

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NPDI Excellence

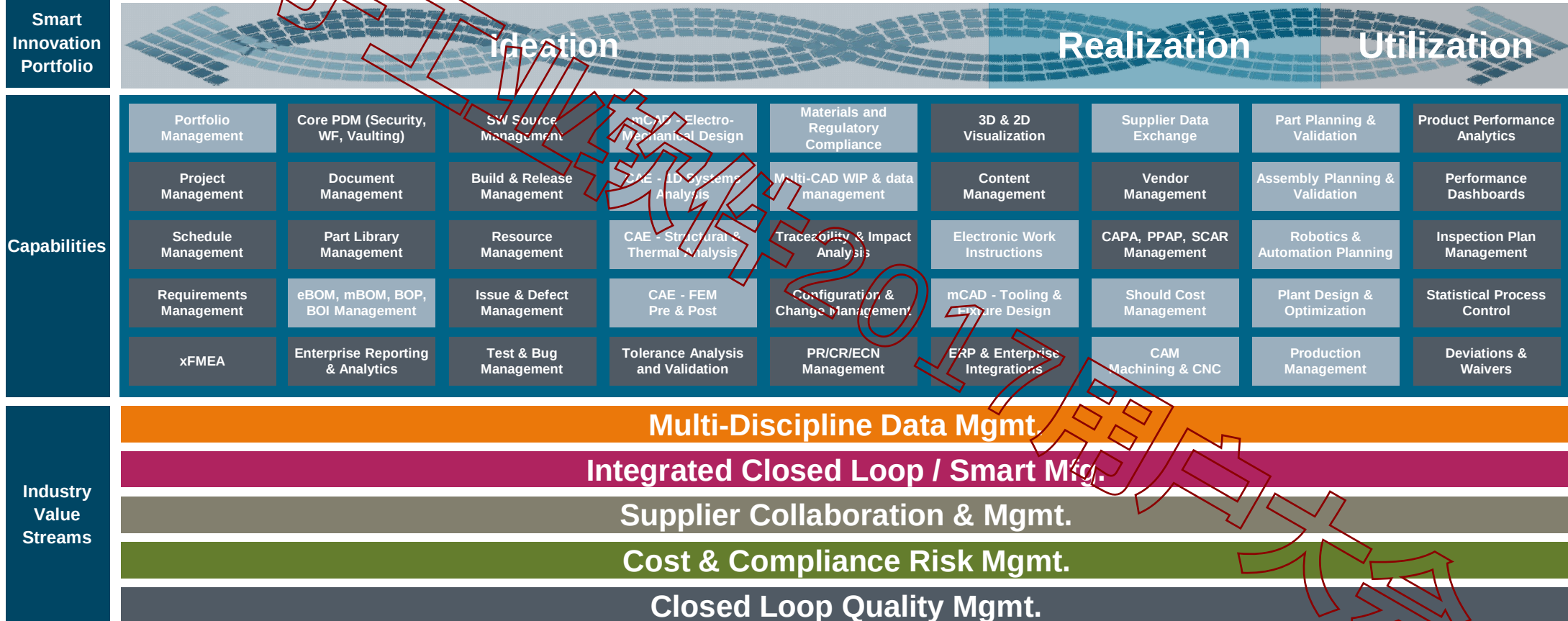


Digitalization Platform for Electronics

闭环质量管理

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NPDI Excellence



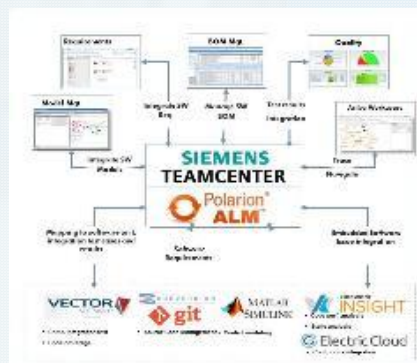
Make Strategic Acquisitions 进行战略收购 (近三年)

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ALM



Polarion Acquisition
PLM – ALM integration
Continuous Delivery

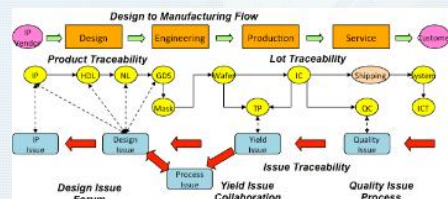


2015 / 12

MES



Camstar Acquisition
PLM – MES Integration



2014 / 12

Product Analytics



Cloud Based Solutions
Product Performance
Intelligence

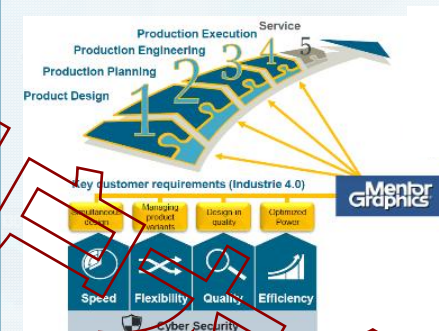


2014 / 12

Electronic Design Automation



Mentor Graphics Acquisition
PLM – EDA integration



2016 / 11

Not Yet
Approved

2016/01 西门子宣布收购CD-Adapco(CAE)，扩大工业软件产品组合，实现数字化企业产品组合的成长。
2016/08 西门子宣布收购3D打印工业组件开发商，布局3D打印及增量制造的未来发展。

Agenda



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电子行业转型与升级之路

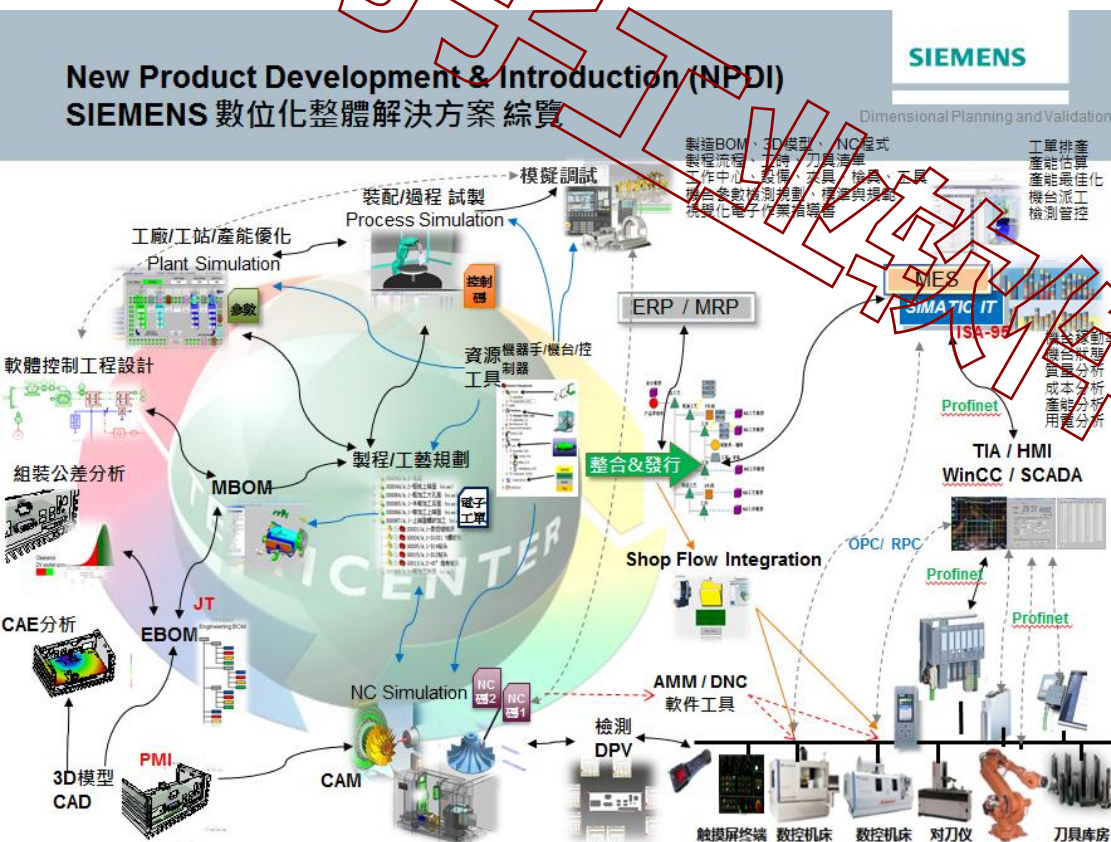
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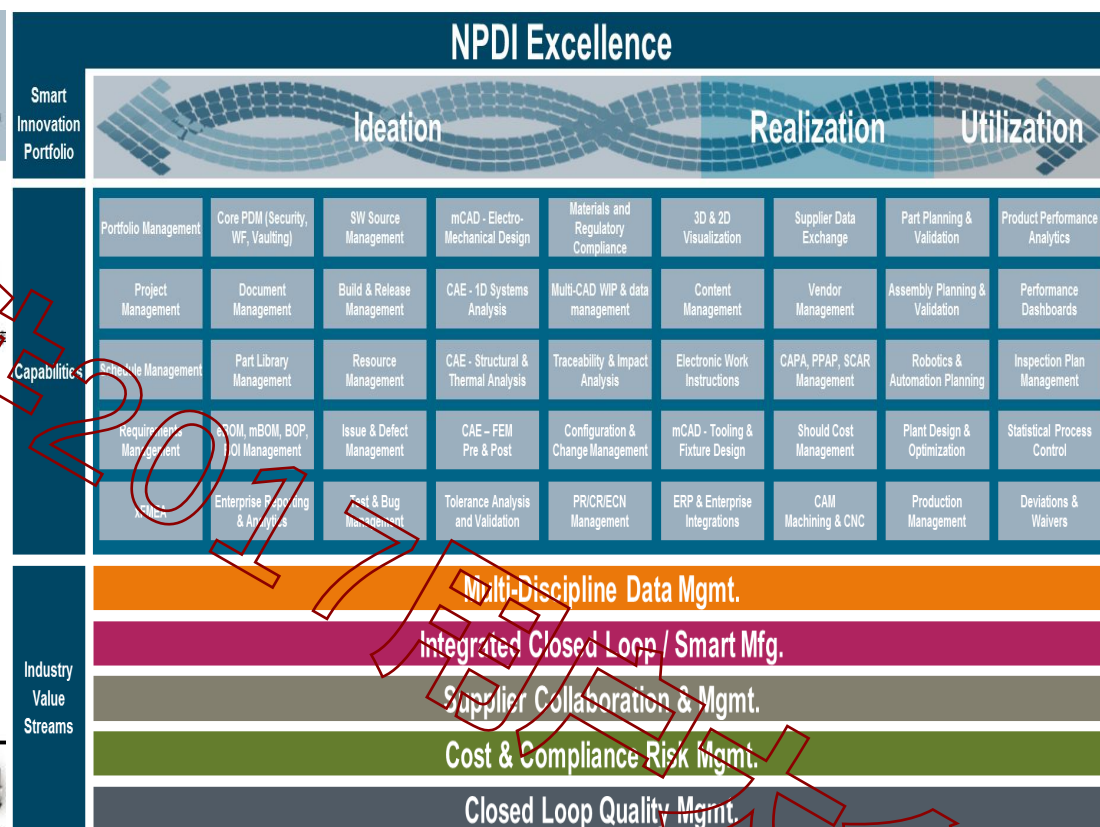
总结： SIEMENS 清楚的数字化蓝图与完整的解决方案

SIEMENS

New Product Development & Introduction (NPDI) SIEMENS 數位化整體解決方案 綜覽



NPDI Excellence



总结：

往数字化企业转型与升级之路上，公司愿意花多少时间多少成本？去摸索 & 去集成

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重新審視現行企業內軟硬體架構

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是否滿足未來智能化架構？

單一數位化平台

TEAMCENTER

IT層面

- 統一的平台和資料來源
- 創新的業務流程
- 改善協作
- 最低接口數量
- 降低運維成本

Process層面

- 作業流程無縫整合
- 作業效益的提昇
- 多種端至端操作介面
- 更即時的反饋訊息供決策判斷

Siemens PLM Software

帮助您实现工业4.0愿景的数字化合作伙伴 - 西门子



陈松盈 Alan Chen

技术总监

大中华地区 高科技电子、半导体、医疗行业

西门子上海中心B幢6楼

上海市杨浦区大连路500号

Phone: +86 18521341993

Phone: +886 910 106 238

E-mail:

song_ying.chen@siemens.com

www.siemens.com.cn/plm