



上海交通大学  
SHANGHAI JIAO TONG UNIVERSITY



第三届中美高校图书馆合作发展论坛

主题：演变中的学术环境和图书馆——资源建设新方向

CASHL、SCSL&四川大学，2015.06.10-13，四川·成都

前瞻思考 创新转型

Forward Looking for Transition Creatively

上海交通大学 图书馆

Shanghai Jiao Tong University Library

陈进

2015年06月11日 四川·成都



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第三届中美高校图书馆合作发展新方论向坛



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1896

1935

1987

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2014

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Section 1

# 形势与挑战

## Situation and Challenges



# 发展机遇

## Development Opportunities



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国家中长期教育改革和发展  
规划纲要 National Strategic  
Outline for Mid-Long Term  
Development of Education  
(2010-2020)

全国教育工作会议  
National Education  
Working Conference  
(2010)

国家十二五规划  
National 12<sup>th</sup> Five-Year  
Plan  
(2011-2015)

党的十八大报告  
Report of the 18th CPC  
National Congress

教育强国战略  
✓坚持教育优先发展  
✓教育是民族振兴的基石  
✓教育是社会进步的基石

高等学校创新能力  
提升计划(2011计划)  
The Innovation Upgrading  
Plan for Universities  
“人才-学科-科研”三位一体  
的创新能力



### ① 中国大学特点 Characteristics of Chinese Universities

- 因图强而生，因改革而兴，因人才而盛 Born to struggle for prosperity, reform for vitality and thrive through talent cultivation

### ② 改革方向 Orientation

- 创新活力激发(好奇心驱动) → 创新能力提升(使命驱动) Stimulate innovation vitality (curiosity-driven)  
→ Enhance innovation ability (mission-driven)

### ③ 改革战略 Strategy

- 五大方面改革：人事制度，人才培养模式，科研体制，综合预算，管理机构 5 Aspects:  
**Personnel system, Talent cultivation, Scientific research system, Comprehensive budget, Institution management**

### ④ 改革要点 Key Points

- 提高质量为核心，内涵式发展为根本 Improving quality as the core, based on connotative development
- 以人才培养为中心，全面提高高等教育质量 Concentrating on the talent cultivation and overall enhancement of higher education
- 有效提升大学在科学研究、社会服务和文化传承的能力 Enhancing innovation ability in scientific research, social service and culture promotion
- 形成相互支撑、整体保障质量的格局 forming a mutual-supporting frame to upgrade the overall quality



# 大学定位

## Vision of University



引领创新，成为经济、社会发展的创新引擎和源泉 Leading Innovation, Becoming the Innovation Engine for Chinese Social and Economic Development

发展目标：构建四大卓越体系 Development Aim: Constructing Four Excellent Systems

■ 卓越的创新人才培养体系：引育并举，三位一体 Excellent growing system for innovative talent: optimizing human resource and overall development

■ 卓越的科学技术创新体系：问题导向、“双力驱动” Excellent innovation system of science and technology: question oriented and driven by national demands and personal interests

■ 卓越的思想文化创新体系：尊严感、自豪感、成就感 Excellent innovation system of ideology and culture: a sense of dignity, proud and achievement

■ 卓越的社会服务支撑体系：服务国家战略，地方发展 Excellent supporting system of social services: promoting national strategies and local development

完善以制度激励为主线的大学治理，促进内生动力  
Improving University Management Through Institutional Encouragement and Nourish Endogenous Motivation



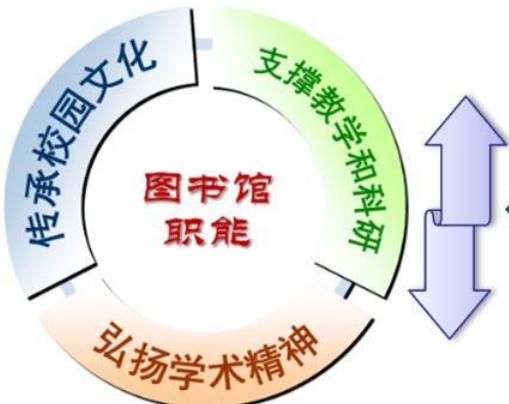
# 大学图书馆 University Library



知识的殿堂 Shrine of Knowledge

大学精神的象征 Symbol of University Spirit

主题：演变中的学术环境和图书馆  
——第三届时中美高校图书馆合作发展新方论坛



学术交流中心 Academic Exchange Center

知识加工中心 Knowledge Enhancive Center

文化传承中心 Cultural Inheriting Center

大学图书馆应当成为大学发展的动力之源

University Library Should be the Engine for University Development





- 6大技术进步 6 Important Technological Progresses
- 6大发展趋势 6 Trends in university libraries



- 新技术 New Tech**
- 电子出版 Electronic publishing
  - 移动应用 Mobile Apps
- 发展趋势 Trends**
- 聚焦出版物科研数据管理 Increasing focus on research data management for publications
  - 移动内容与传递的有限分级 Prioritization of mobile content and delivery



- 新技术 New Tech**
- 文献计量学与引文技术 Bibliometrics and citation technologies
  - 开放内容 Open content
- 发展趋势 Trends**
- 学术记录的方式不断变化 Evolving nature of the scholarly record
  - 增加研究内容的可及性 Increasing accessibility of research content



- 新技术 New Tech**
- 物联网 The internet of things
  - 语义网与关联数据 Semantic web and linked data
- 发展趋势 Trends**
- 技术、标准与基础设施持续不断的进步 Continual progress in technology, standards, and infrastructure
  - 新形式的跨学科研究的兴起 Rise of new forms of multidisciplinary research



### 3大类挑战 3 types of challenges

2014地平线报告(图书馆版)

NMC Horizon Report (2014 Library Edition)

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简单 (初级)

Solvable

- 高校图书馆嵌入课程的过程中，需要重新思考和定位图书馆员的角色与技能 Embedding academic and research libraries in the curriculum and rethinking the roles and skills of librarians

困难 (中级)

Difficult

- 如何实现研究成果的数字化采集与存档，并在与来自其它服务途径的竞争中取胜 Capturing and archiving the digital outputs of research as collection material and surpassing alternative avenues of services

严峻 (高级)

Wicked

- 如何面对彻底变革的需要，积极开展持续的整合、互操作与合作项目 Fulfilling the needs for radical changes and Maintaining ongoing integration, interoperability, and collaborative projects





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第三届中美高校图书馆合作发展论坛

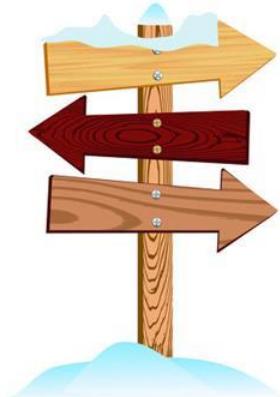
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Section 2

# 转型之思路

## Thoughts about Transition



# 图书馆：生长着的有机体

## Library: A Growing Organism



藏书楼 Book Storehouse  
(久远 far back)

读书馆 Reading Place  
(昨天 yesterday)

知识工厂+创新触媒 Knowledge Factory & Catalyst for Innovation  
(今天 today)

智慧图书馆 Smart Library  
(未来 future)

上海交通大学 SHANGHAI JIAO TONG UNIVERSITY

主题：演变中的学术环境和图书馆——资源建设新方向论  
第三届时中美高校图书馆合作发展论坛

大学图书馆服务理念

通海上交大

资料随手可得  
信息共享空间  
咨询无处不在  
馆员走进学科  
技术支持服务  
科研推进发展

藏书楼 久远的图书馆

读书馆 昨天的图书馆

知识工厂 创新触媒

今天的图书馆

创新服务理念  
优化资源配置  
走进院系基地  
嵌入研究过程  
发展态势分析  
智慧泛在课堂  
知识交流社区  
大学文化传承

转型提升品质  
分类满足需求  
强化信息素养  
催化高新成果  
支撑宏观决策  
助推教学变革  
协同挖掘潜能  
激活思想源泉

与时俱进，适应变化 Keeping pace with the times and adapting to the changes

- 全方位支持教、学、研、管 Supporting teaching, study, research, and administration in all respects
- 帮助读者从信息的海洋中发现、获取、提炼和评价知识 Helping users find, access, filter and evaluate knowledge from enormous amount of information

智慧图书馆 来你的图书馆

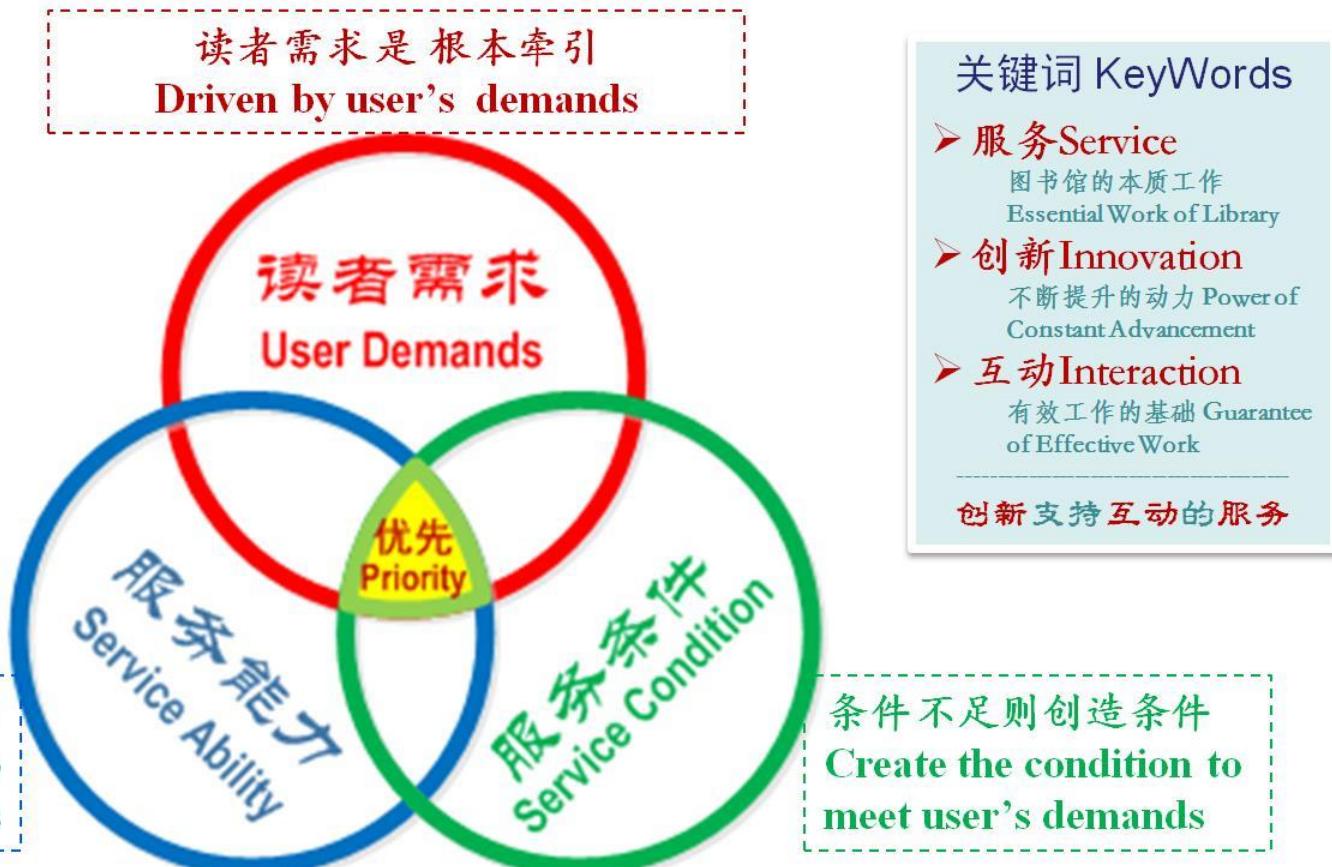
资源：优质、多元、高效  
技术：精准、便捷、智能  
服务：泛在、灵活、感知  
馆员：敬业、专业、创新  
读者：乐用、协同、被视

上海交通大学图书馆 Shanghai Jiao Tong University Library



### 三元聚焦工作原则 Priority Working Rule Based on Three Key Factors

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# 转型思考

## Thinking on Transition

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### 传统服务 Traditional Service

- 借还书 Book Circulation
- 参考咨询 Reference Service
- .....



### 转型方向 Key Aspects

- 嵌入教学 Embedding in Classroom
- 支持科研 Supporting Scientific Research
- 绩效资源 Lifting Efficiency of Collections
- 生态管理 Promoting Eco-Management





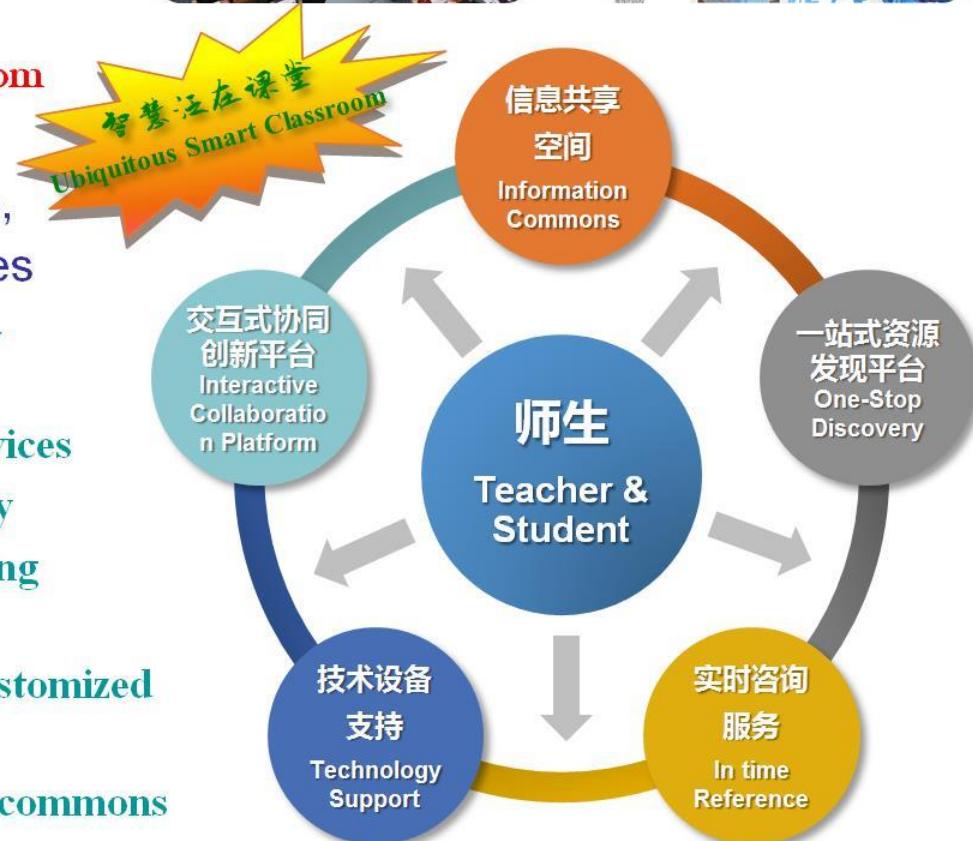
### 促进混合式教学 Comprehensive Support for Mixed Teaching & Learning

- MOOCs模式, 微课程 MOOCs, Micro-Lecture
- 翻转课堂, 课上课下联动 Flipped classroom, online-offline interaction
- 智慧泛在课堂 Ubiquitous Smart Classroom



### 优化整合空间、资源、信息和服务 Optimizing the Integration of Space, Resources, Information and Services

- 以读者为中心, 强调创新和一站式整合 Focusing on users and emphasizing the integration of creative and one-stop services
- 学习无处不在 Support ubiquitous study
- 鼓励和支持协同、群组学习 Encouraging collaborative and group study
- 推行个性化和学科化服务 Providing customized and subject services
- 营造知识共享空间 Building knowledge commons





### 完善移动环境，支持移动服务和教学

Improve Mobile Environment,

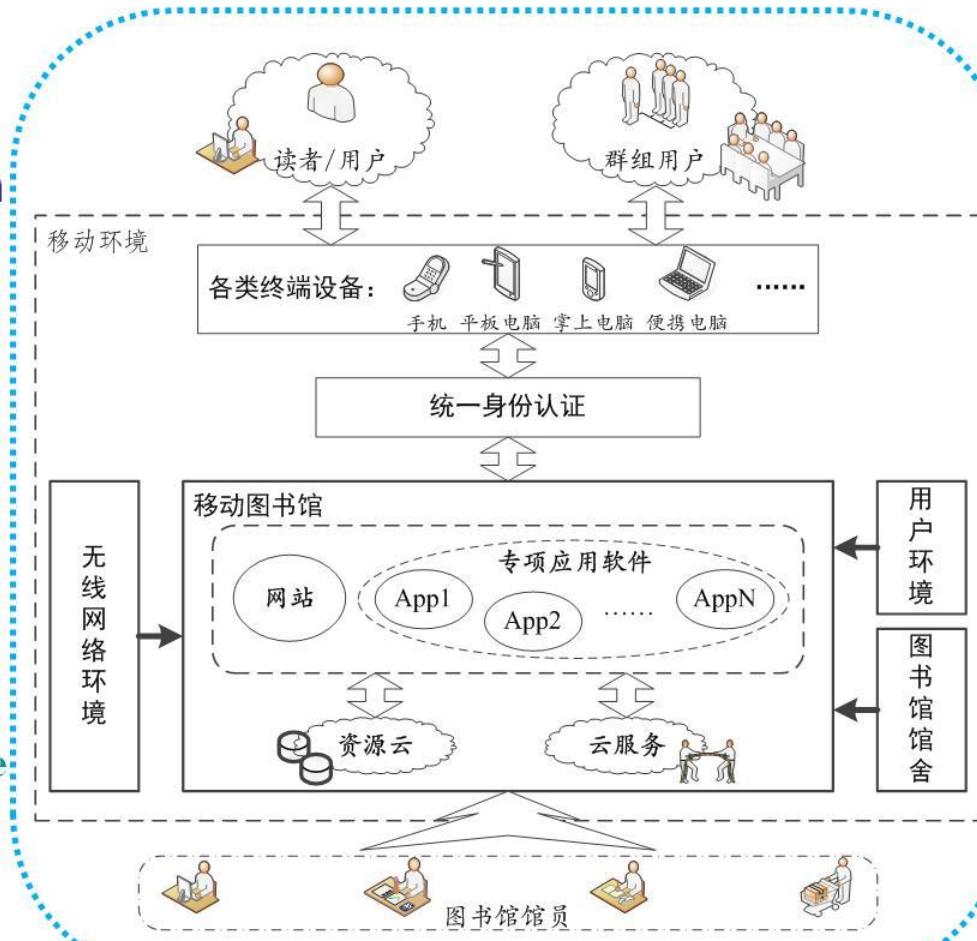
Support Mobile Service & Teaching

### 移动图书馆 Mobile Library Definition

■ 在移动环境下，基于云服务，借助各类终端设备，实现随时、随地对图书馆任何资源及服务的利用 Under the mobile environment, based on the cloud service, users can make use of various mobile devices to access library resources and services without the restriction of time and location

■ 更进一步，可通过知识重组实现智慧阅读 Furthermore, smart reading could be realized through knowledge reorganization

■ 核心：协同/群组学习与分享 Core:  
Collaborative / group study and sharing





# 支持科研之数据管理

## Supporting Scientific Research — Data Management

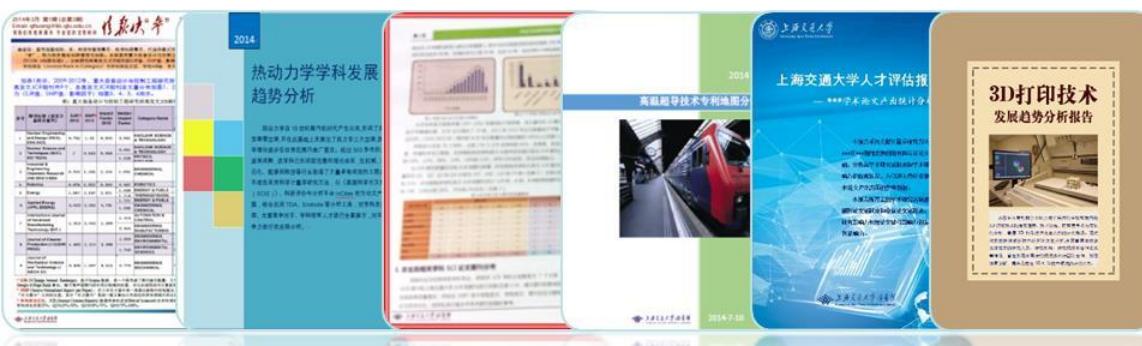
### 构建科研数据管理平台 Construct Scientific Research Data Management Platform

### 情报分析 Information Analysis

■ 掌控学科态势、研究热点和发展趋势 Grasp subject status, hot spots and developing trends

■ 辅助人才评估/价 Support talent evaluation

### 借助服务数据促进科学化管理 Based on Original Service Data to Facilitate Scientific Management



UNIVERSITY OF CALIFORNIA

DMPTool

Build Your Data Management Plan



### 推动数字化学术生态系统的发展

Promoting An Integrated and Open  
Digital Scholarship Ecosystem

- 促进下一代学术图书馆的合作 Facilitate the cooperation among libraries of next generation

- 实现动态化、多样化资源的无缝、永久获取 Achieve the seamless, perpetual access of dynamic and multiple resources

### 参与开放获取，提升研究成果开放性

Actively Participating in the Open Access Movement

- SCOAP<sup>3</sup>: 全球最大规模开放存取方案之一

SCOAP<sup>3</sup> : one of the largest scale open access initiatives in the world

- 中科院和基金委发布开放获取政策声明 The open access policy adopted by Chinese Academy of Sciences and National Natural Science Foundation of China





# 支持科研之协同创新

## Supporting Scientific Research — Collaborative Innovation

### 推动标准化、规范化的协同管理和服务平台建设 Work on Standardized, Regularized Collaborative Management and Platform Construction

#### ■ 开发联合身份管理系统 Developing federated identity management system

#### ■ 建设实体和虚拟的协同合作平台和资源共享平台 Constructing physical and virtual platform for collaboration and resource sharing

### 促进行业聚合，支持跨学科研究 Supporting Interdisciplinary Research

#### ■ 领先领域：数字人文、计算社会学 Pioneering Areas: Digital humanities and computational social science research

#### ■ 为跨学科交流提供平台 Prepare platforms and tools for interdisciplinary communication and exchange





### ① 资源评估，提升资源质量 Improve Collection Quality through Evaluation

- 把握馆藏结构和使用情况 **Reveal the structure and usage of collection**
- 重点保障优势资源 **Prioritize significant collections**
- 均衡发展各类资源 **Balance Overall Resources According to Subjects**

### ② 建立模型，提升经费使用效率 Upgrade Efficiency of Expenditure (Increase Input-Output Ratio) Based on Integrated Model

- 设置核心参数 **Find out Valuable Key Parameters for Decision Making**
- 及时调整馆藏策略 **Timely adjustment of the strategy of collection development**
- 优化学科资源配置 **Optimize the distribution of subject resources**

### ③ 需求驱动，发挥用户积极性 Involve Users into Collection Development

- 以用户需求为导向 **Oriented by user demands**
- 多渠道鼓励用户参与资源建设 **Encourage users to participate in collection building through diverse ways**
- 针对院系特殊需求，共建资源 **Cooperate with colleges and schools on common interests and special needs**



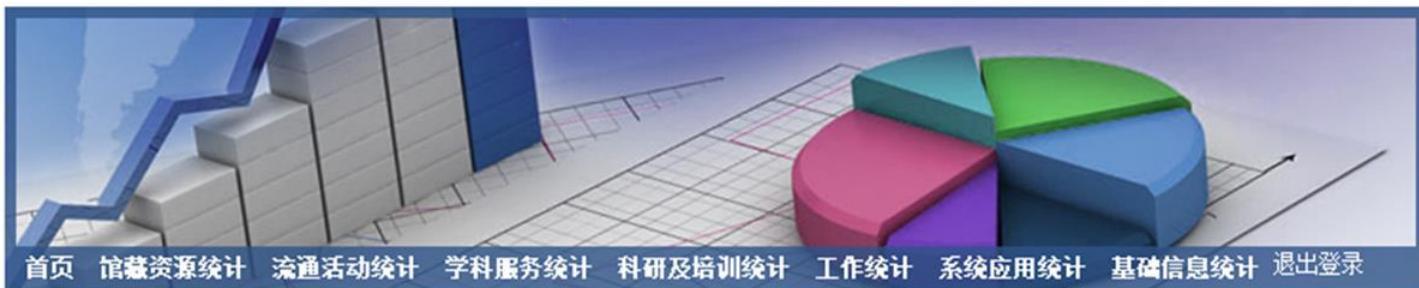


### ④ 建设学习型、乐于奉献的专业化馆员队伍 Develop A Study-Oriented, Dedicated and Sustainable Librarian Team

- 常态化的学习机制 Normalized study mechanism
- 新技能的快速消化和利用 Quickly absorb and make use of new skills
- 使命感和忠诚度 Cultivate a sense of mission and loyalty

### ⑤ 建设数据统计平台 Construct the Statistics Platform for Overall Control

- 全面掌控业务动态 Understand the whole work condition and trends easily
- 辅助业务联动 Assist the linkage of different departments
- 提升服务品质 Improve service quality





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第三篇  
Section 3

# 实践中探索

## Exploration in Practices





智慧泛  
在课堂

Ubiquitous  
Smart  
Classroom

情报分  
析服务

Scientific  
Information  
Analysis

创新资  
源建设

Innovative  
Collection  
Development

数据统  
计平台

Statistics  
Platform

信息素  
养教育

Information  
Literacy  
Education

1

2

3

4

5





# 智慧泛在课堂之背景

## Ubiquitous Smart Classroom — Background

### 新型教学模式的探索 Probing for New Education Modes

- 正在推动: MOOCs, 翻转课堂, 创新教学法, 自适应学习技术, 等 **Ongoing Trials: MOOCs, Flipped Classroom, Innovative didactics (Team-based Learning), Adaptive Learning Technologies, etc**
- 迫切需要: 符合一般大学常规教学特点, 知识灌输 → 探究, 支持自主、研讨、互动、群组和泛在学习 **Crying needs: Satisfying the nature of higher education, turning passive learning to knowledge exploration; supporting independent, interactive, group and ubiquitous learning**

#### 传统教育模式 Old education modes

- 被动学习知识 Learn passively
- 灌输式课堂教育 Prescriptive teaching method
- 统一化教学 Uniform teaching methods
- 课堂内容与现实应用脱离 Nothing about practical application
- 扼杀创造力 Stifling creativity
- .....

转变模式  
Transition

#### 新型教育模式 New education modes

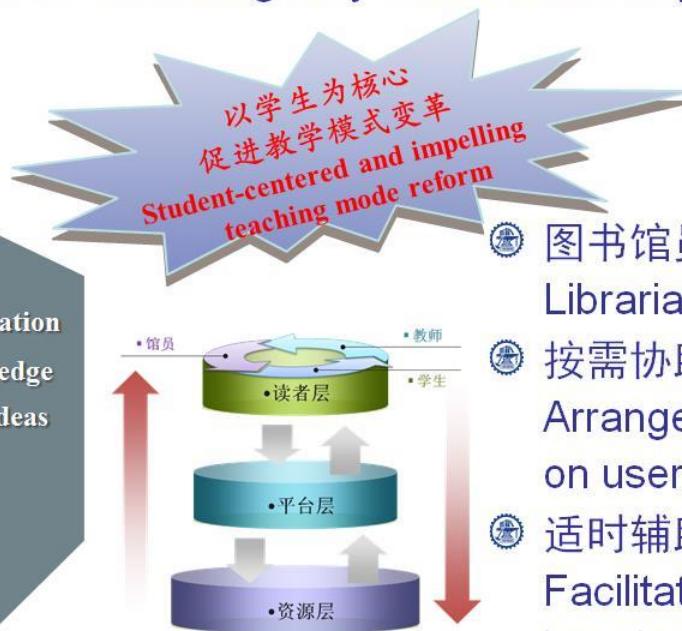
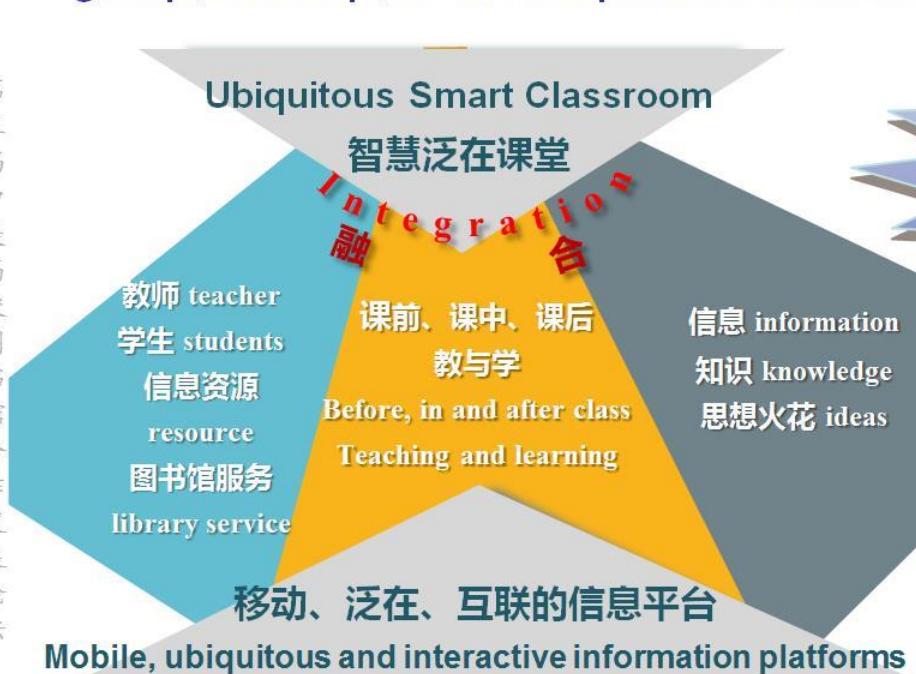
- 自主学习理念 Independent learning
- 互动融入课堂 Interaction in classroom
- 差异化教学 Diverse teaching methods
- 新媒体教育方式 New media education
- 创造力评估 Creativity evaluation
- .....



# 智慧泛在课堂之定义

## Ubiquitous Smart Classroom — Definition

在泛在知识环境下，将师生、资源、技术平台和图书馆服务整合为一休，有机融入启发、自主、研讨、群组、翻转等全新学习理念的智慧型课堂，实现无处不在的互动教学 Under the ubiquitous knowledge environment, An smart classroom which integrates teachers, learners, resources, technical platforms and library services, and is embedded with new study ideas such as elicitation, independence, discussion, group, and flip, to accomplish interactive teaching any where and any time



- 图书馆员为催化剂 Librarian as the catalyst
- 按需协助课程组织 Arrange courses based on user needs
- 适时辅助课下学习 Facilitate off-class learning





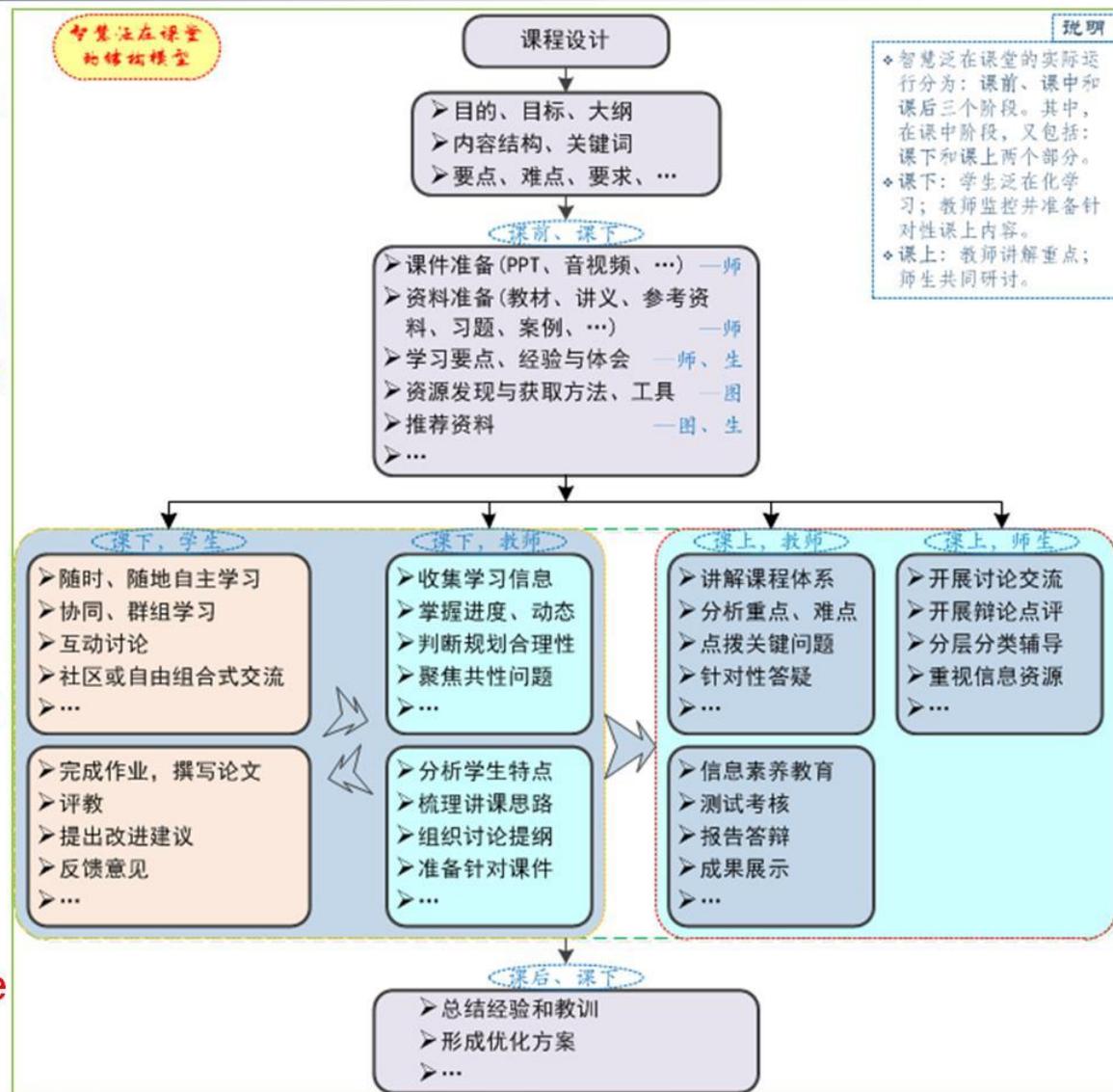
# 智慧泛在课堂之课程模型

## Ubiquitous Smart Classroom — Course Model

教师作为教学主体，组织课件与资源，推动课下学习、课上讨论  
Teachers arrange learning materials and promote **flipped classroom**

图书馆员通过平台随时提供学习资源、信息素养支持、搜索工具  
Librarians provide resources, information literacy training and search tools through platforms

学生在泛在的学习环境中，实现翻转、协同、群组学习和互动分享  
Under the ubiquitous circumstance of learning, students receive **flipped**, **collaborative**, group study practice and share knowledge & experience interactively



# 智慧泛在课堂之关键要素

## Ubiquitous Smart Classroom — Key Elements

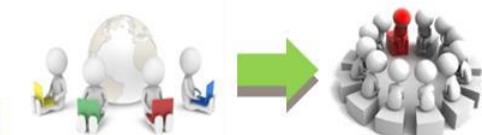


### 泛在知识环境 Ubiquitous Knowledge Environment

- 移动互联技术融入学校教学环境 Mobile technology integrated into teaching and learning environment
- 资源与服务主动推送至师生各类终端设备 Resources and services are actively pushed forward teachers and students' various mobile devices
- 课程平台整合各类学习资源，支持课程互动 Course platforms combine diverse resources and support interaction



### 群组学习与互动分享 Group Study, Interaction and Sharing



- 共享资源、协同研讨 Resource sharing, collaboration and discussion
- 交互平台、交流分享 Interactive platforms, communication and sharing

### 图书馆智慧服务 Smart Library Service

- 信息互联、全面感知的智能服务 Intelligent services of information interconnected and whole perception
- 资源整合、知识组织服务 Resource integration and knowledge organization service
- 馆员嵌入（人的智慧服务） Embedding librarians



#### 馆员 Librarians

资源收集、资源推荐 Collect and recommend resources  
嵌入教学、学科服务 Embed in teaching and offer subject services



### 课程：形势与政策 Collaborated Course: *Situation and Policies*

#### 设计 Course Design

- 任课教师团队：主导课程设计与组织 Teachers responsible for course design and arrangement
- 图书馆：协助收集与推荐课程资料、按需提供信息素养在线培训 Library: help collect and recommend resources, and provide online information literacy training according to demands

- 注册课程 Registration
- 教师发布课程信息和大纲、提出要求、准备课件和资料 Teachers upload syllabus and rubrics, raise questions and get ready courseware materials
- 学生了解课程信息、查找资料 Students understand course information and search for materials
- 学生阅读、预习 Students read and make pre-class learning

课前 Before Class

- 电子考勤 E-Roll call
- 授课 Instruction
- 互动、研讨、分享观点 Interaction, research, and sharing ideas
- 小组学习 Group study
- 随时测评 Tests
- 课程行为记录 Class performance recording

课中 In Class

- 虚拟讨论 virtual discussion
- 提交作业 submit homework
- 批改作业 grade homework
- 查重 find duplication
- 评教 assessment

课后 After Class

- 课程平台：记录与保存学习过程，支持课后考核与评教 Course platform: record study process and support course assessment
- 图书馆：辅助教师进行学生行为分析 Help analyze students' learning performance



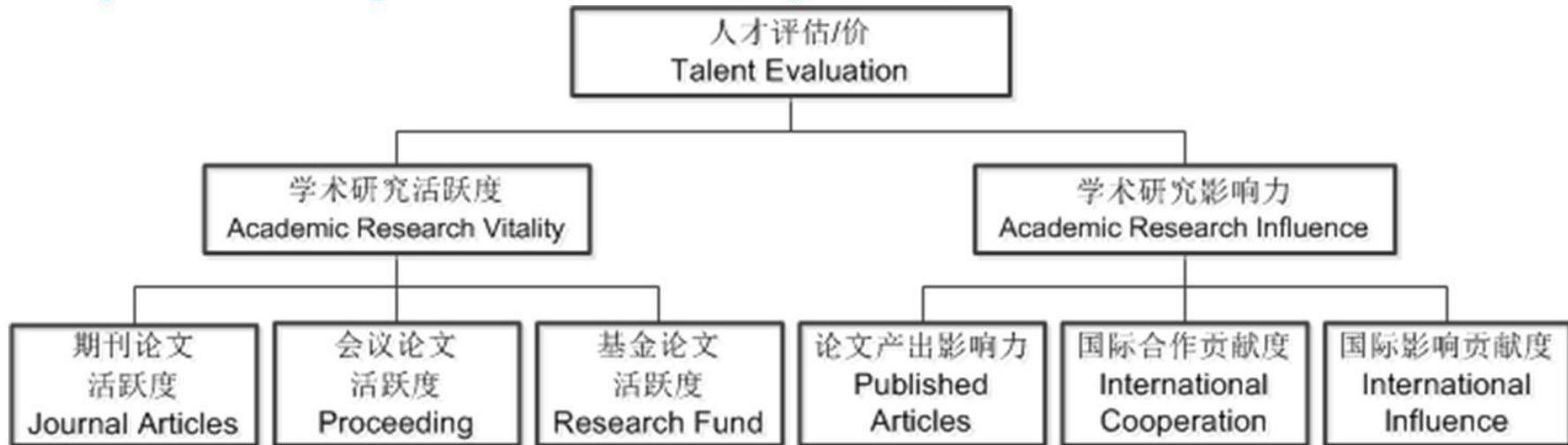
### 目标 Objects

- 根据学校的人才强校战略 According to SJTU's talents developing strategy
- 评估：是否值得引进；评价：引进后适应性 Evaluation: If worthy to bring in;  
Estimate the adaptability after introduced into

### 指标体系 The Indicator System

### 数据来源 Data Source

- 数据源(Databases): WoS, EI, Scopus, SSCI, A&HCI, CSSCI, CNKI, 著作(Monograph), ...
- 影响力(Impact): 发文期刊影响力(Journal impact), 论文被引影响力(Paper impact based on quotation), 刊物转载(Reprinted), ...



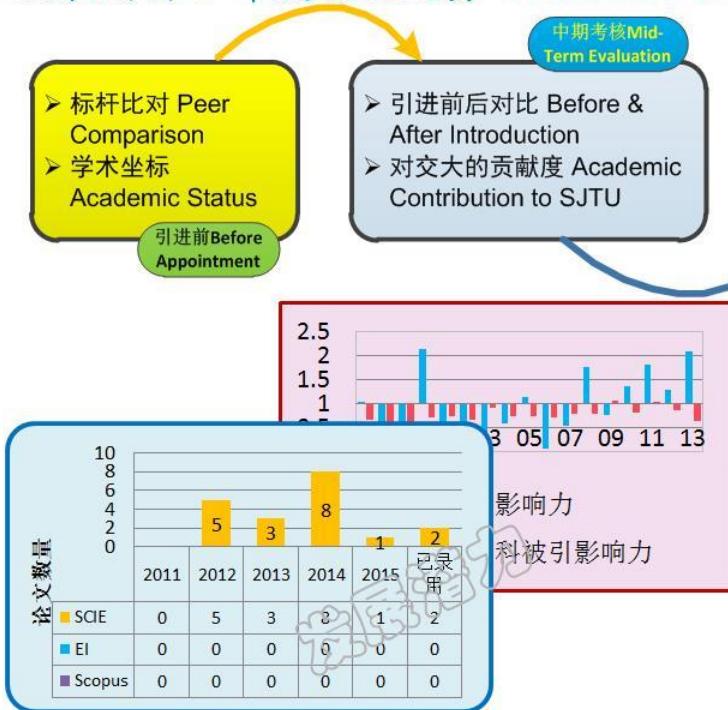
# 情报分析之人才评估

## Information Analysis — Evaluation of Talents



### 评估/价要点 Key Aspects of Evaluation

- 评估周期: 引进前, 中期, 聘期 Evaluation term: Before, Mid-term, Employment
- 学术水平 Academic performance
- 贡献大小: 交大发文比例 Contribution to SJTU: proportion of paper affixed by SJTU
- 发展潜力: 年度变化趋势 Potential: The trend of academic influence





### ① 主要目标 Main Objective

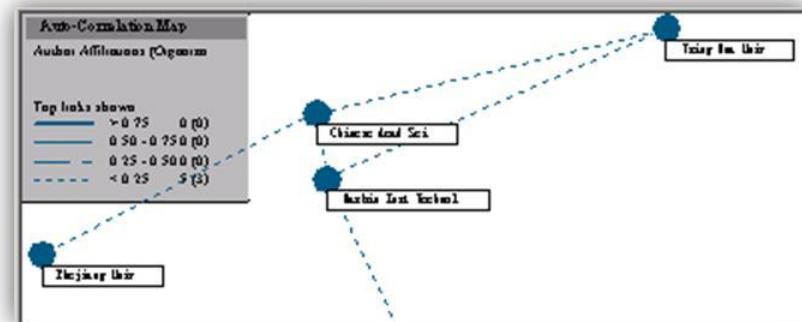
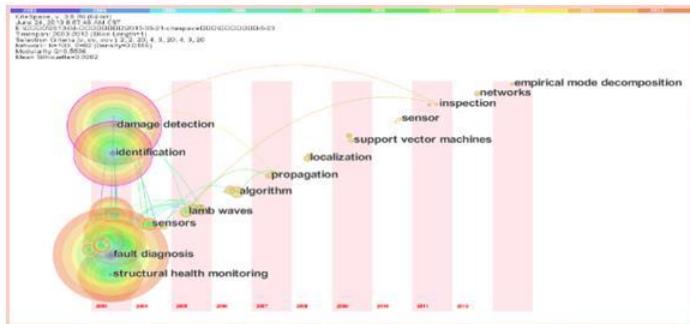
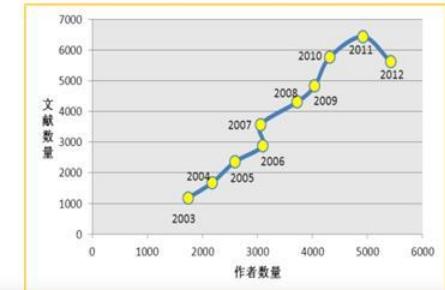
- 辅助学者洞察学科发展水平，把握方向及重点 Assistant faculties to penetrate subject development, to grasp development direction and key points
- 提供决策支持 Providing support to decision making

### ② 数据来源 Data Sources

- 期刊论文: SCIE、EI、专业数据库 Journal articles: SCIE、EI、databases
- 专利: 中国专利、DII、TI、Innography... Patent: PIAS, DII, TI, Innography ...

### ③ 主要分析维度 Analysis Dimensions

- 趋势分析 Trend Analysis — TDA
- 热点聚焦 Hotspots — CiteSpace, HistCite
- 关联性分析 Correlation — TDA, Ucinet





### 报告类型 Report Classifications

- 学科态势分析：宏观展现学科发展布局 **Subject Status Analysis: broadly revealing subject development**
- 学科评估：根据明确的指标体系衡量学科发展情况 **Subject Assessment: using specific indicator systems to indicate subject development**
- 领域文献综述：聚焦关键技术的发展趋势 **Literature review: focusing on the development trend of key technologies**
- .....

### 代表性学科评估报告 Typical Evaluation Reports

- 材料学院学科评估报告——标杆机构对比 **Material Science: competitor analysis and benchmarking**
- 生命学院十年发展态势分析——发展趋势分析 **The 10-year development of Life Science: developing situation and trend analysis**
- 支持数学学科进入ESI的人员分析——人力资源分析 **How Mathematics entered ESI: productive faculty analysis**
- 农生学院高水平学术期刊投稿指南——期刊投稿参考 **A contribution guide for Agriculture and Biography: guide for publishing products**
- .....





### 态势分析案例：机械故障诊断 Situation Analysis Case: Machinery Fault Diagnostics

#### ■ 策略制定 Formulate strategy

◆ 关键词 Keywords: fault diagnosis, failure diagnosis, ...

◆ 明确细分技术领域 Define sub-fields of technology

◆ 学科限定：排除无关学科(如：医学)，避免数据噪声 Excluding irrelevant subjects



#### ■ 分析结论 Conclusion

◆ 宏观趋势：处于技术成长期 Macro-level trend: On growing period of technologies

◆ 宏观热点：支持向量机、经验模式分解和遗传算法等新的数据处理方法开始崭露头角 Macro-level hotspot: New data processing methods, such as SVM, EMD, GA, etc., show strong performance

◆ 中观：锁定竞争对手——香港理工大学、美国密西根大学、清华大学、哈尔滨工业大学 Meso-level: targeting competitor —— PolyU, UM, Tsinghua University, Harbin Institute of Technology

◆ 微观：拥有结构稳定、表现活跃的科研团队，应瞄准影响力更大的期刊发文 Micro-level: Have built a stable & active research team, but necessary to aim at journals of high impact factor



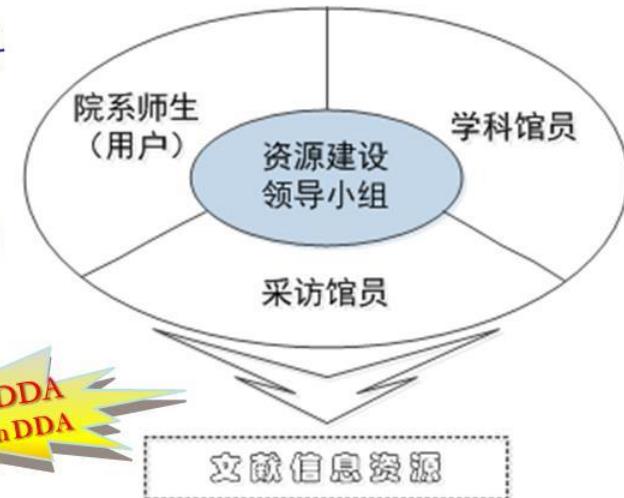


# 资源建设之模式创新

## Collection Development — Innovation Mode

- 文献资源建设“三一原则”：院系师生说了算，学科馆员定基调 **THREE-ONE Rule: Based on Users' Needs and Guided by Subject Librarians**

- 三：院系师生、学科馆员、采访馆员 **Three: User, Subject Librarian, Acquisition Librarian**
- 一：资源建设领导小组 **One: Leading group of collection development**



### 需求驱动采购 DDA (Demand-Driven Acquisition)

- 国内首家DDA实践 **First domestic library adopting DDA**
- 引入学科馆员质量干预机制 **Build amount and quality ensuring mechanism controlled by subject librarians**
- 考虑中国读者习惯，调整订购规则 **Adjust the acquisition rule to fit domestic users' habits**
- 限定采选平台范围(出版社、年代、核心资源) **Restricting range of resource selection (Press, Year, core resources)**
- 成效：平均借阅量大幅提升 **Achievement: Average amount of circulation increased by a big-margin**





### ① 起因：有限经费如何获得有效资源 Problem: How to Obtain Valuable Resources Based on Limited Budget

- 资源与经费的矛盾 Increasing publications vs. Limited expenditures
- 资源与用户需求的矛盾 Resources vs. User's demands
- 教、学、研的需求变化 Requirement Change from Teaching, Learning and Research

### ② 对策：采购决策支持模型 Solution: ADSM (Aquisition Decision Support Model)

- 因素1：学科发展、读者需求、出版状态等 Factor 1: Subject Condition, Users' Demands and Publications, etc.
- 因素2：使用量、引用率、发文率、流通率、篇均成本等参数 Parameters such as Using Amount, Quotation Rate, Publishing Rate, Combining Circulation Rate, Cost per Paper, etc.
- 建模：纸质图书采购模型和电子资源决策支持模型 Establishing printed book purchasing model, and e-Resource acquisition decision support model
- 模型分类：文、理、工 Model Types: Arts, Sciences, Engineering

文科:  $y = a + b * x_1$  ( $x_1$ =学科被引率)

理科:  $y = aa + bb * x_1 + cc * x_2$  ( $x_1$ =学科出版率;  $x_2$ =学科流通率)

工科:  $y = aaa + bbb * x_1 + ccc * x_2 + ddd * x_3$  ( $x_1$ =学科出版率;  $x_2$ =学科采购率;  $x_3$ =学科流通率)  
 $y$ =学科适藏值



# 资源建设之电子资源统计分析系统 Collection Development — ERSAS



## 背景 Background

- 电子资源增长迅速，统计评价十分重要 The rapid development of e-Resource raised new needs for statistics and evaluation
- 现有电子资源管理系统，仅关注统计，且数据不准、不全 Present Electronic Resource Management Systems Focus on Statistics, but, Low Data Precision

电子资源统计分析系统(ERSAS)  
Electronic Resources Statistical Analysis System

## 目标 Objects

- 核心：优化学科资源结构；辅助馆藏策略调整决策 Optimizing structure of subject resource; Assistant decision-making to strategy control of collection development
- 功能1：综合分析资源结构，掌握特色核心资源 Function 1: Synthetically analyzing resource structure, to target core and significant resources
- 功能2：使用绩效评价，有限经费获得高价值资源 Evaluating utilization of resource, to obtain useful and valuable resources by limited expenditure





# 资源建设之电子资源统计分析系统

## Collection Development — ERSAS

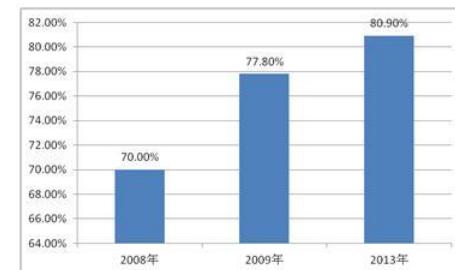
### 设计思路 Ideas of Design

- 引入文献计量指标，通过核心保障率分析，优化资源配置  
Adopt bibliometrics indicators, to optimize collection through core resource ensuring ratio analysis
- 基于发文和引文，揭示资源建设与科研绩效之间的关系  
Indicate the correlation between collection development and research performance based on publication and quotation
- 通过使用统计数据的深度挖掘，评价成本效益 Evaluate the cost effectiveness through extracting and analyzing usage data

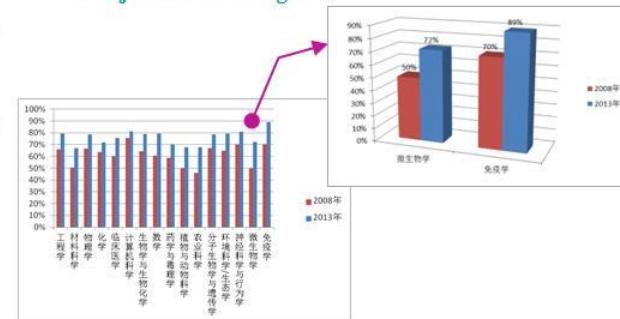
### 优化配置，发挥资源对科研绩效的支撑作用

#### Supporting Scientific Research Through Optimizing Collection Structure

- 2008-2013年，有计划大幅提升资源保障率，我校进入ESI排名1%的学科从6个增加到16个 in period of 2008-2013, with the increase of resource ensuring ratio, number of top 1% of ESI subjects of SJTU rise from 6 to 16
- 资源保障率提升为进入ESI机构排名的学科提供了有力的支撑 It seems that the rise of ensuring ratio facilitated the subject development (based on ESI rank)



2008-2013年JCR来源刊保障情况  
The journal ensuring ratio of JCR Journals



2008-2013年我校进入ESI排名的16个学科刊保障情况  
The journal ensuring ratio of SJTU ESI subjects (2008-2013)



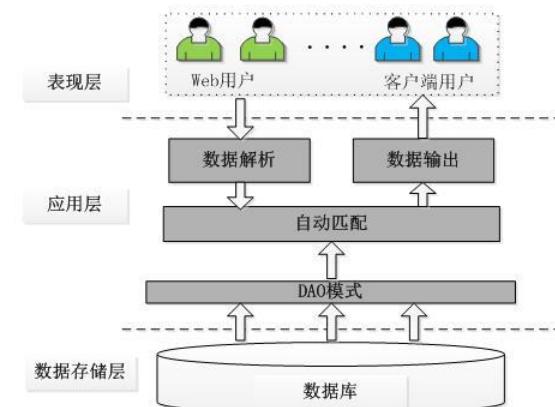
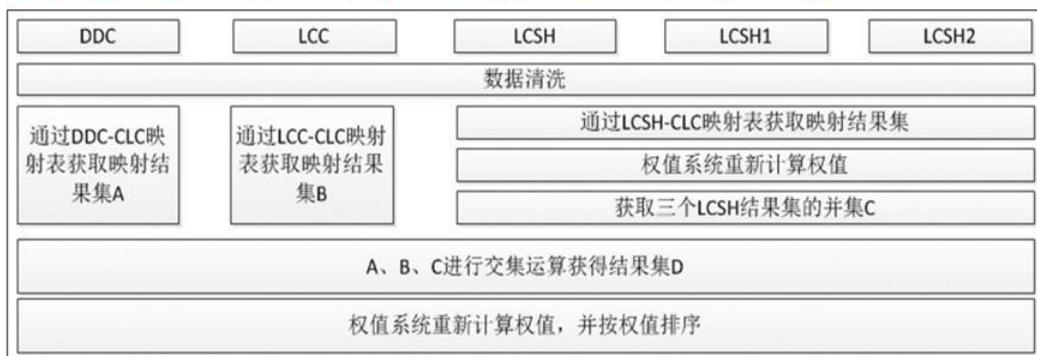
### ① 目的和意义 Purpose of Design

- 实现文献分类自动化，提高海量电子资源编目效率 Fulfill the automatic catalogue classification to satisfy the increased demands on electronic resources
- 建立国内外主流知识组织体系之间的映射，促进资源的揭示和共享 Establish a compatible mapping system for the domestic and overseas mainstream knowledge organizational system



### ② 设计思路 Features

- 覆盖四大知识组织体系 Covering the 4 main knowledge organization systems, DDC、LCC、LCSH、CLC
- 基于同现映射的方法 Based on co-occurrence mapping
- 制定联合匹配规则 Formulating united matching rule





### 提升知识发现和服务效率 Improve the Efficiency of Knowledge Discovery and Service

- 增加资源的发现途径 Increase the approaches of resource discovery
- 丰富资源揭示维度 Rich dimensions of resource description
- 精确统计学科资源 Accurate statistics of subject resources
- 提升电子资源编目效率 Raise the effectiveness of e-resources catalog

### 实现高效准确的自动分类 Accomplish Highly Precise Automatic Classification

- 1-3级类目覆盖率100% 100% cover the 1<sup>th</sup>-3<sup>rd</sup> level categories
- 测试准确率90% 90% accuracy rate in test
- 自动分类速度达200条记录/分钟 200 items/minute processing speed
- 兼容不同数据格式 Compatible with different data formats



# 数据统计平台之背景

## Statistics Platform — Background

### ① 服务变革的需求：图书馆转型 The Needs for Service Innovation: Library Transition

- 科学管理必须有科学规范的数据支撑 **Accurate and Standardized data is the foundation of scientific management**

- 智慧图书馆离不开数据统计 **Statistics is a basic factor of smart libraries**

- 科学评价图书馆服务，是保障泛学科化服务体系持续发展的基础 **Evaluation of library services is the fundamental of sustained development of ubiquitous subject service system**



### ② 数据统计当前存在的问题 Problems of Data Statistics in Current Work

- 效率低：统计周期长 **Inefficiency: a long cycle of collecting data**

- 不一致：数据发布、数据来源 **Inconformity: data release and data sources**

- 不完整：统计指标体系、分析功能、数据收集与保存机制 **Incompleteness: short of indicator system, analyzing function, mechanism of data collection and archiving**





# 数据统计平台之构建

## Statistics Platform — Set Up

### ① 交大图书馆数据统计平台 Establish SJTU Library Statistics Platform

- 自动采集各类、各项“原子化”分项数据 Automatically collect all kinds of “atomized” sub-item data
- 按需发布数据 Publish data based on demands
- 规范准确实时 Standard, accuracy, up-to-date

数据更新动态实时  
Dynamic Data Update

数据管理准确统一  
Accurate Data Management

数据发布口径一致  
Data Releasing Uniformly

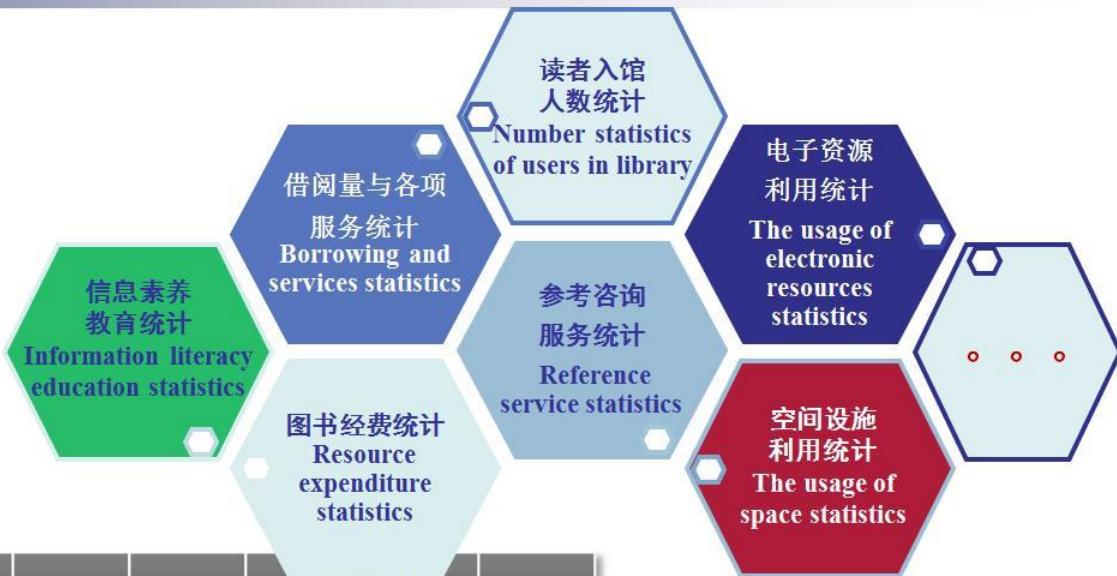


# 数据统计平台之提升管理水平

## Statistics Platform — Improve Management Ability



- 纳入常态日程 Accepted as the Daily Schedule
- 简化工作流程 Simplify Work Flow
- 提高工作效率 Improve Work Efficiency



	11月	12月	1月	3月	4月	5月	6月	9月	10月
年度数据		启动汇总		制作年度报告					
财务处数据				提交					
图工委数据			启动汇总		审核并提交				
规划发展处			启动		提交			提交	
资实处数据						提交			
教务处本科质量报告					提交				

# 数据统计平台之辅助业务联动

## Statistics Platform — Assist the Linkage Among Departments

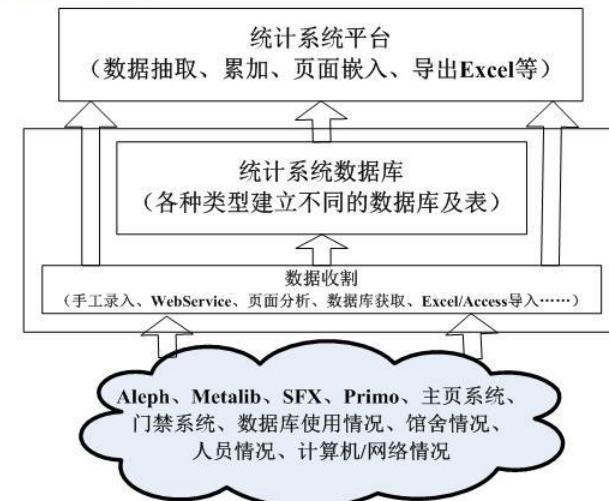


### ● 集成各类数据平台 Integration of Data Platforms

- Aleph图书馆管理系统 Aleph system
- 思源探索 Primo / OPAC
- 学术资源检索 SFX / Metlab
- 门禁管理系统 Management system of entrance guard
- 小组学习室预约系统 Reservation system of group study room
- 图书馆主页访问数据 Accessing data of library homepage
- 信息素养教育管理平台 The management platform of information literacy education
- 查新管理系统 The management system of sci-tech novelty retrieval

### ● 关联各类数据单项 Separate Data Linking

- 梳理数据报表间的各种映射关系 Combing all kinds of mapping relations among data report form
- 统一数据来源，所有数据只填报一次 Uniforming data source to ensure that all data are provided only once



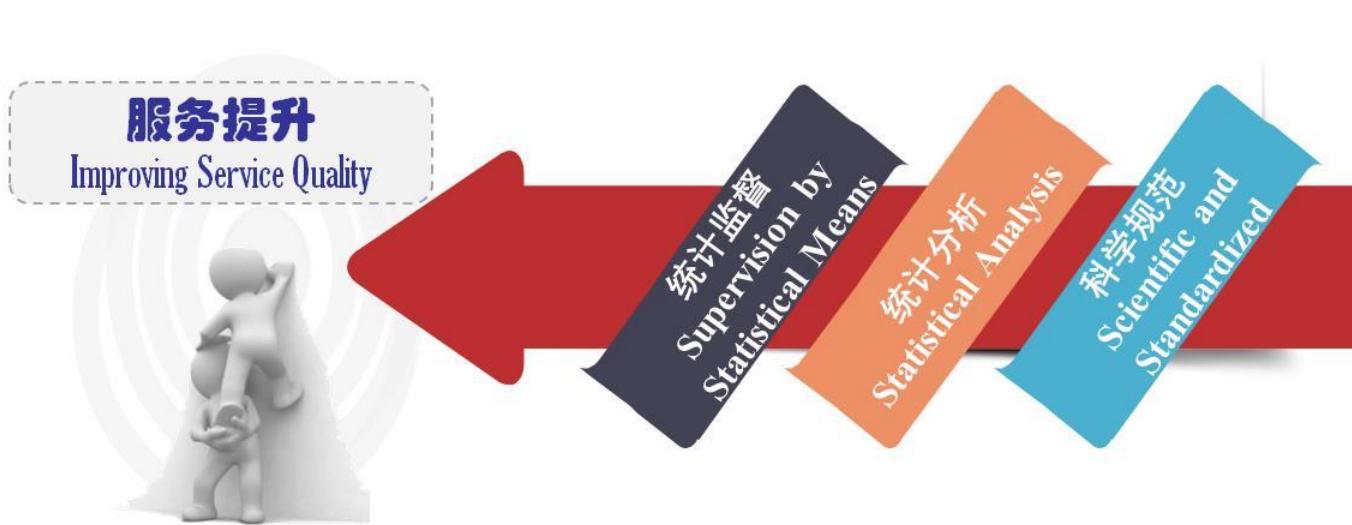


### 实时掌握工作动态，有效督促日常服务开展 Supervising Daily Service Effectively by Controlling Working Process in Real Time

■ 借助统计分析、预测和监督，动态掌握服务开展、空间设施利用、科研发展等情况 Based on statistical analysis, prediction, and supervision, understand real-time service progress, usage rate of facilities and research development of library

■ 促进图书馆各项工作的科学规范管理 To promote scientific and standardized management for all works in a library

### 基于数据统计分析，预测和调整服务策略 To Plan and Refine Service Strategy by Using Statistical Analysis





### A 提升图书馆管理水平

#### Improving Management Level of a Library

- ✓ 缩短数据采集时间，减少报表填报手工操作，而且数据上报口径一致  
Reducing time for data acquisition, tasks of fill report, and consist all release data
- ✓ 提升统计工作效能，使统计数据更加客观真实准确  
Statistics becoming more objective and accurate through enhancing the efficiency of statistical work



### B 提升图书馆服务品质

#### Improving Services Quality of a Library

- ✓ 基于数据统计分析，可以预测和调整服务策略  
To plan and refine service strategy by using statistical data analysis
- ✓ 有效督促日常服务开展  
Effective supervision on daily services

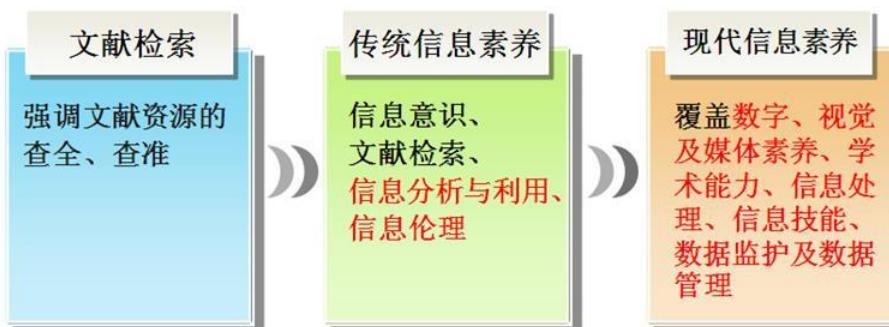
# 信息素养教育之框架体系

## Information Literacy Education — Framework



### 目标 Objects

- 提升用户信息素养能力 To improve users' information literacy competency
- 研究、制定上海交通大学信息素养能力标准 To Study and establish standard of information literacy competency of SJTU
- 形成层次分明、形式多样、效果可测的用户信息素养教育综合体系 Building up a comprehensive, effective and integrated information literacy system for SJTU



内涵变迁 Connotation Change

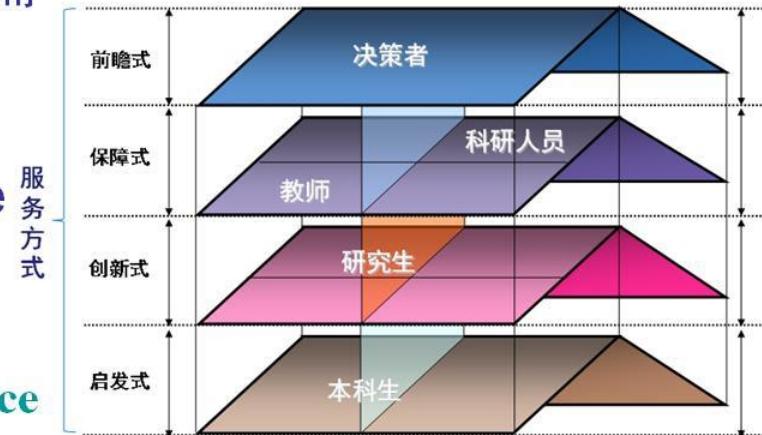
### 框架体系 Framework





② 读者需求的多样性，牵引信息素养教育应需培训（个性化培训）、开展分层服务 In Response to Users' Diverse Needs, Information Literacy Education Should Be Customized and Layered

- **决策者：前瞻式服务（与决策有关的各类信息） Decision makers: Forward looking service (related to decision making)**
- **科研人员及教师：保障式服务（与教学、科研的相关需求对接） Researchers and teachers: On demand service (related to teaching and research, such as data management, use of research tools, etc.)**
- **研究生：创新式服务（为学术研究提供帮助与指引） Graduates: Innovative service (providing academic guidance and help)**
- **本科生：启发式服务（了解图书馆资源与基本服务） Undergraduates: Heuristic instruction (understanding basic collection and service of library)**





# 信息素养教育之智慧泛在

## Information Literacy Education — Ubiquitous & Smart

### 教学内容重组 Reorganization of Teaching Content

- 以信息素养能力标准为纲，将内容颗粒化、模块化，形成一定难度梯度 According to the standard of information literacy competency, to modularize contents to form a difficulty gradient

### 探索网络教、学、评价，实现用户的个性化学习 Exploring Online Teaching, Learning and Assessment, To Achieve Personalized Learning

### 以主题研讨、沙龙的形式开展实体培训 By Form of Theme Seminar or Salon, To Do Training

### 融学习与图书馆服务于一体 Integrating Learning and Library Service

### 互联网+ Internet+

- 互联网+课程 Internet + Courses
- 互联网+教学 Internet + Teaching
- 互联网+学习 Internet + Learning
- 互联网+评价 Internet + Evaluation

表 1 新媒体联盟 2014 年所追踪的主要技术					
消费者技术	学习技术	数字策略	使能技术		
3D 视频 电子出版 移动应用 自我量化 平板电脑 思维网真 可穿戴技术	学习分析 大规模开放在线课程 移动学习 在线学习 开放内容 开放许可 虚拟远程实验室	白带设备 翻转课堂 游戏和游戏化 智能定位 创客空间 保存/保护技术	情感计算 蜂窝网络 传感器 弹性显示器 地理定位 基于位置的服务 机器学习 移动宽带 自然用户界面 近距离无线通信 下一代电池 开放硬件 语音对语音翻译 统一机器翻译 虚拟现实		
社交媒体技术	网络技术	可视化技术			
协同环境 集体智慧 众筹 众包 数字身份 社交网络 隐性智能	文献计量学和引用分析 云计算 物联网 实时翻译 语义网和链接资料 单点登录 聚合工具	3D 打印/快速成型 增强现实 信息可视化 可视化数据分析 全息显示			





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CASHL、SCSL&四川大学，2015.06.10-13，四川·成都

第四篇  
Section 4

# 结束语

## Summary



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## Summary

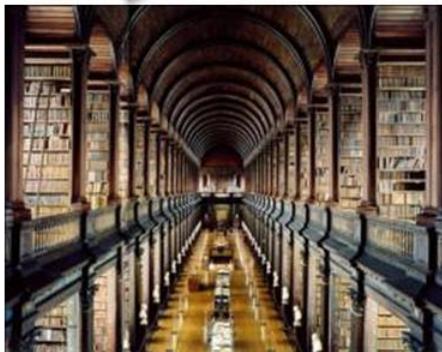


“It is not the strongest of the species that survives, nor the most intelligent. It is the one that is the most adaptable to change.”

—— Charles Robert Darwin



物竞天择，适者生存  
未来的大学图书馆，只有适应变化、不断创新，才能活力无限



- 高等教育改革持续深化和新技术不断发展给大学图书馆的转型带来契机和全新挑战  
Along with the continued deepening of higher education reform and the rapid development of new technology, the transformation of the university library will face the opportunity and new challenge
- 支撑教学和科研、弘扬大学精神是大学图书馆永恒的使命和立足点 Supporting research and promoting the spirit of university is the eternal mission and the foothold of university libraries
- 以读者为中心，不断学习、提升服务能力，才能确保在转型与超越的大变局中获得长足发展 Librarians should adapt to the trends, set the readers as the center and keep learning to improve their service abilities. Only in this way, university library could have a progress in the great transition and transcendence



谢谢!  
Thanks!

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