

基于机器学习的 可持续质量提升

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Autodesk

下一代
软件开发
SOFTWARE
DEVELOPMENT

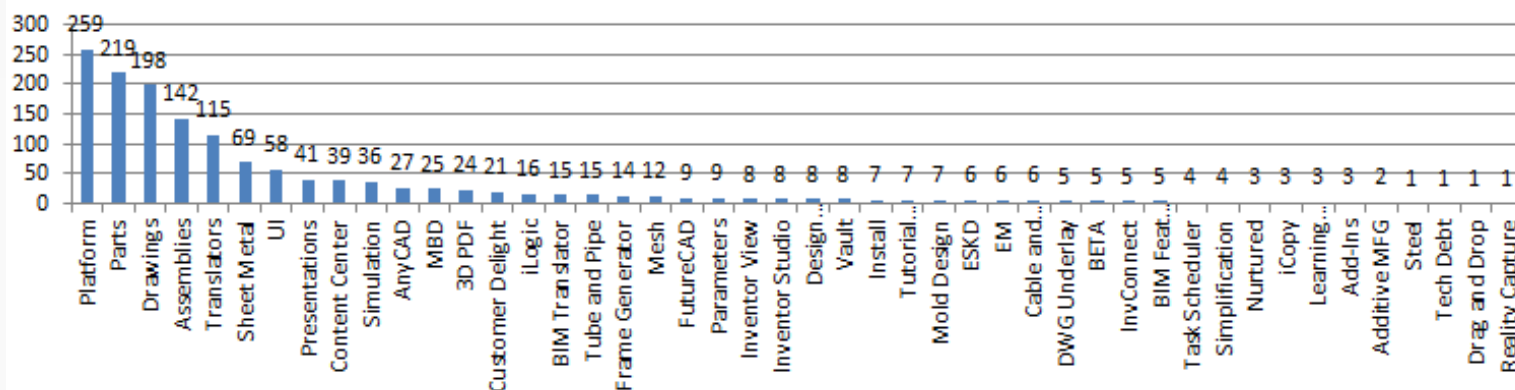
Agenda

1. 客户感知质量模型介绍
2. 基于大数据分析的机器学习系统
3. 系统上线后的对比
4. 具体应用实例
5. Q/A

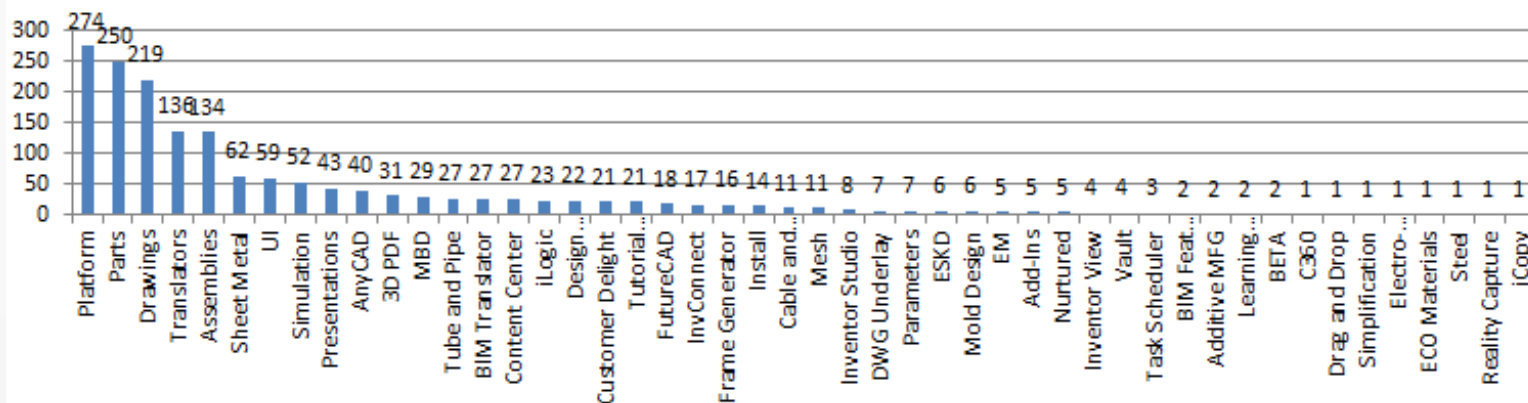
什么是产品质量？

客户感知质量

FY17 Created Customer Defects Distribution Within Domain



FY17 Resolved Customer Defects Distribution Within Domain

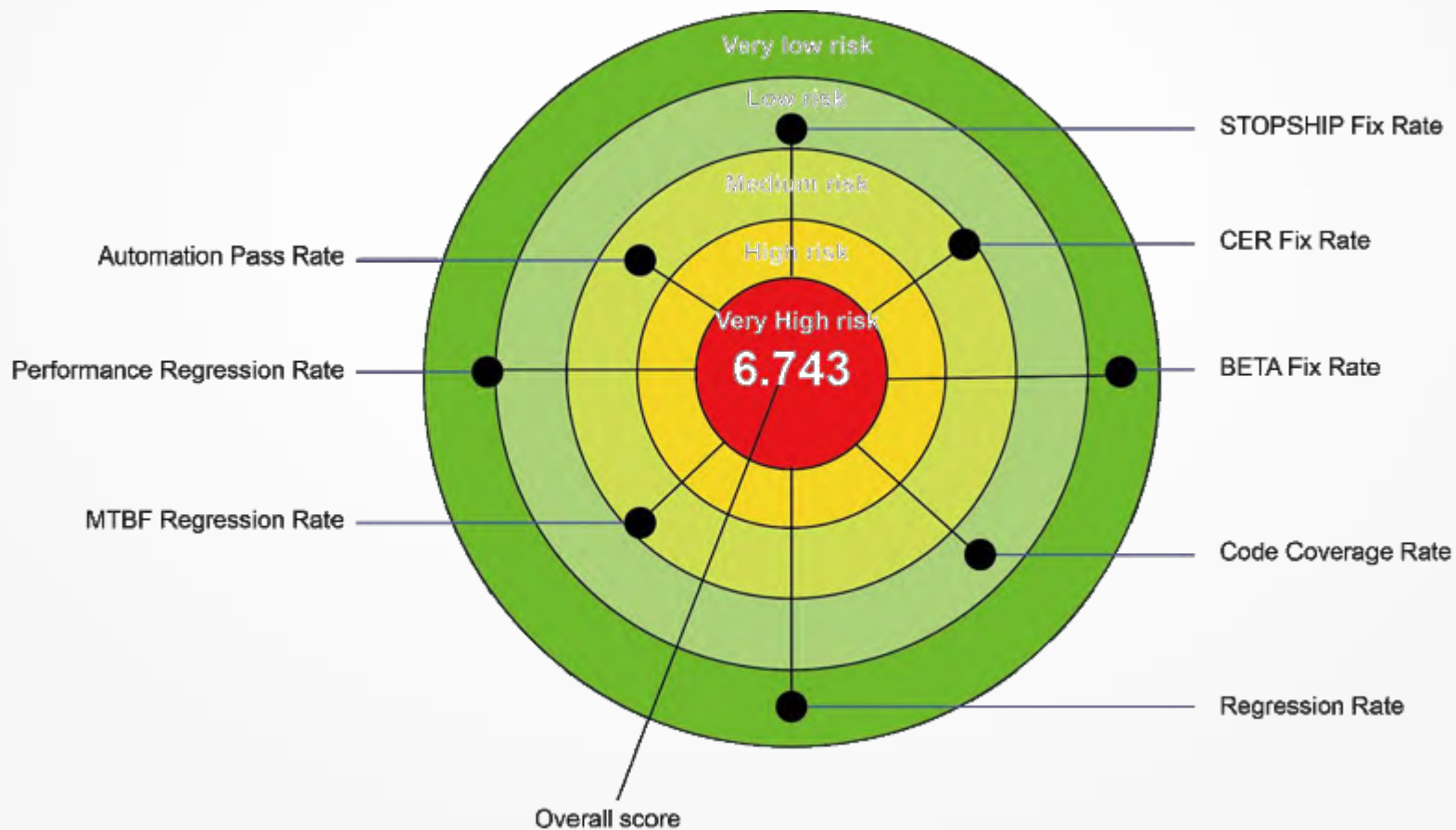


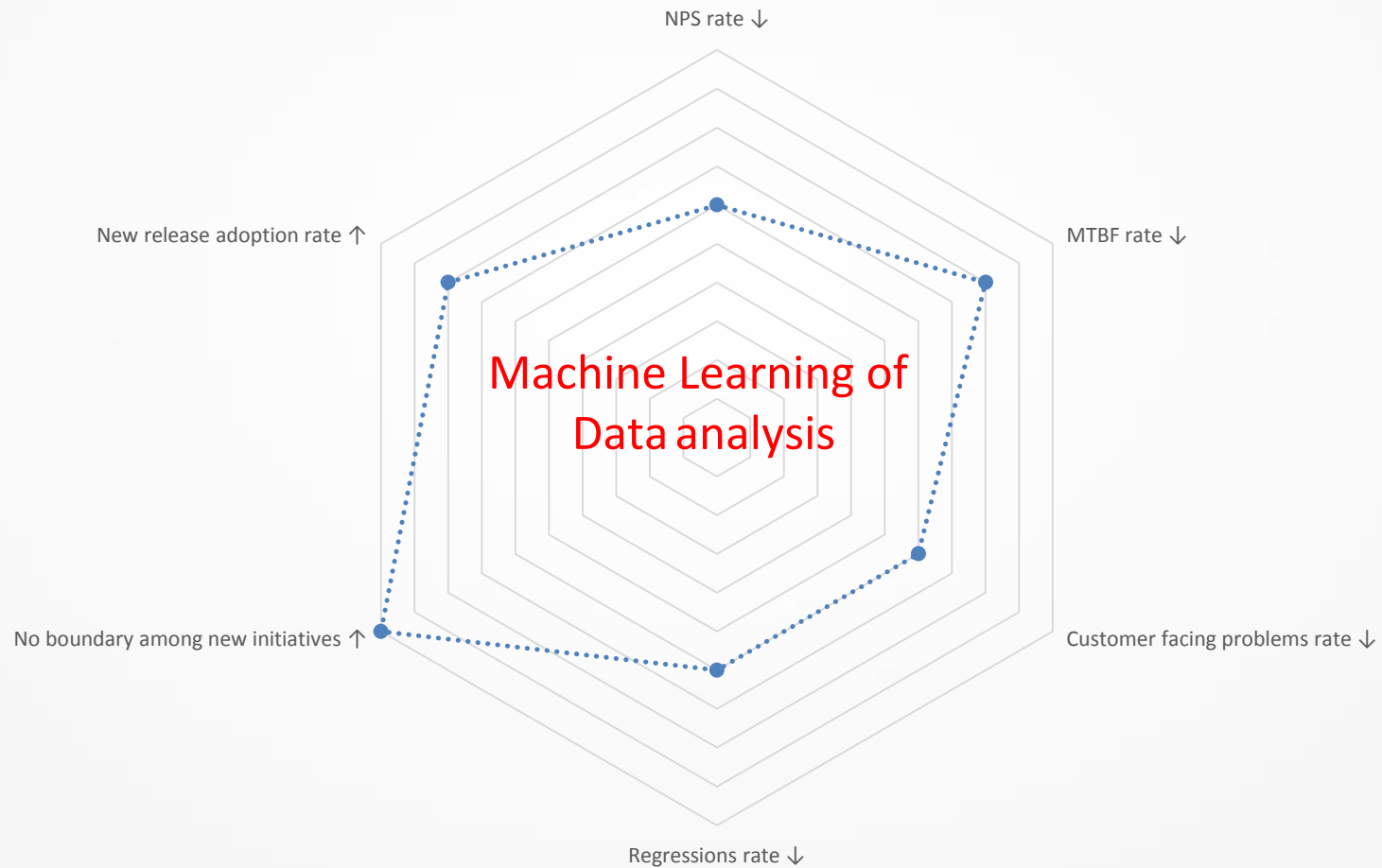
如何评估

客户感知质量？

80/20 法则

下图是客户感知质量吗？

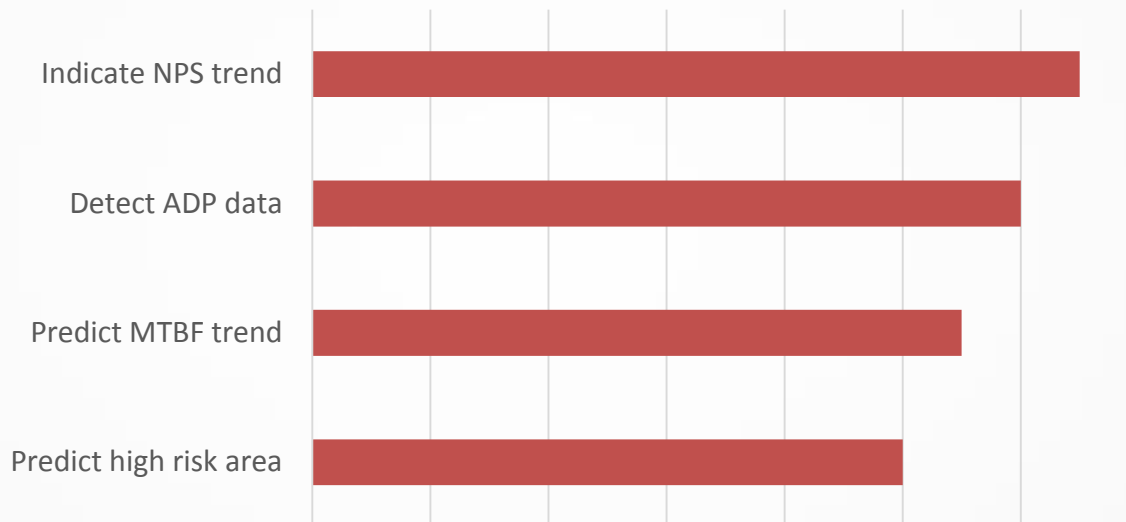




怎么做？

基于大数据的机器学习系统

基于大数据分析的机器学习之优点



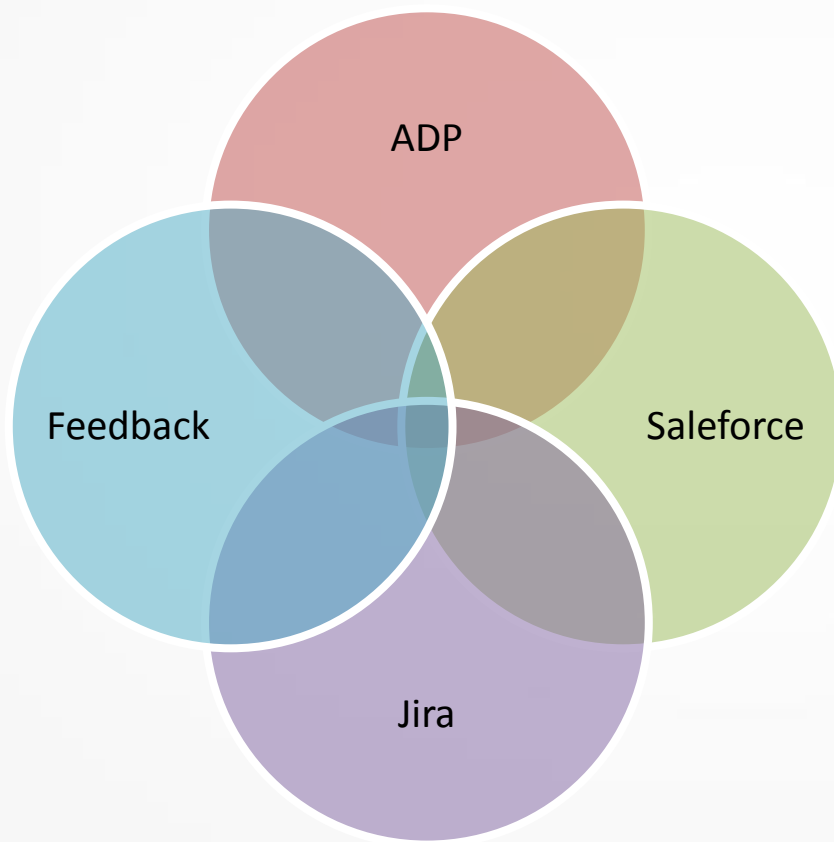
借助动态的大数据分析的机器学习技术，机器自身能优化测试：

- 运用缺陷评估系统，智能推断客户问题的优先级
- 智能推荐客户问题至当前的有相关性的Sprint
- 运用质量评估系统，智能多维度的评估当前的产品质量
- 智能推断并构建测试用例，以代码覆盖率为基准，保持最少的测试用例的最大代码覆盖率
- 基于大数据分析，智能推断当前的高风险区并提醒
- 智能检索MTBF和NPS数据，自我不断增加有效的测试用例



项目	上线前	上线后	效益率
测试成本	100	40	60% ↑
MTBF	32	82	156% ↑
NPS (0-100)	27	67	148% ↑
质量指数 (0-10)	6.8	9.4	38% ↑
衰退率	8%	1.6%	225% ↑
新功能平均研发周期	6 months	3 months	100% ↑
客户问题反馈周期	8 weeks	1 week	800% ↑
Automation 重叠率	40%	6%	680% ↑
Automation 代码覆盖率	50%	95%	90% ↑
新缺陷数量	2831	623	300% ↑

具体应用



应用前：

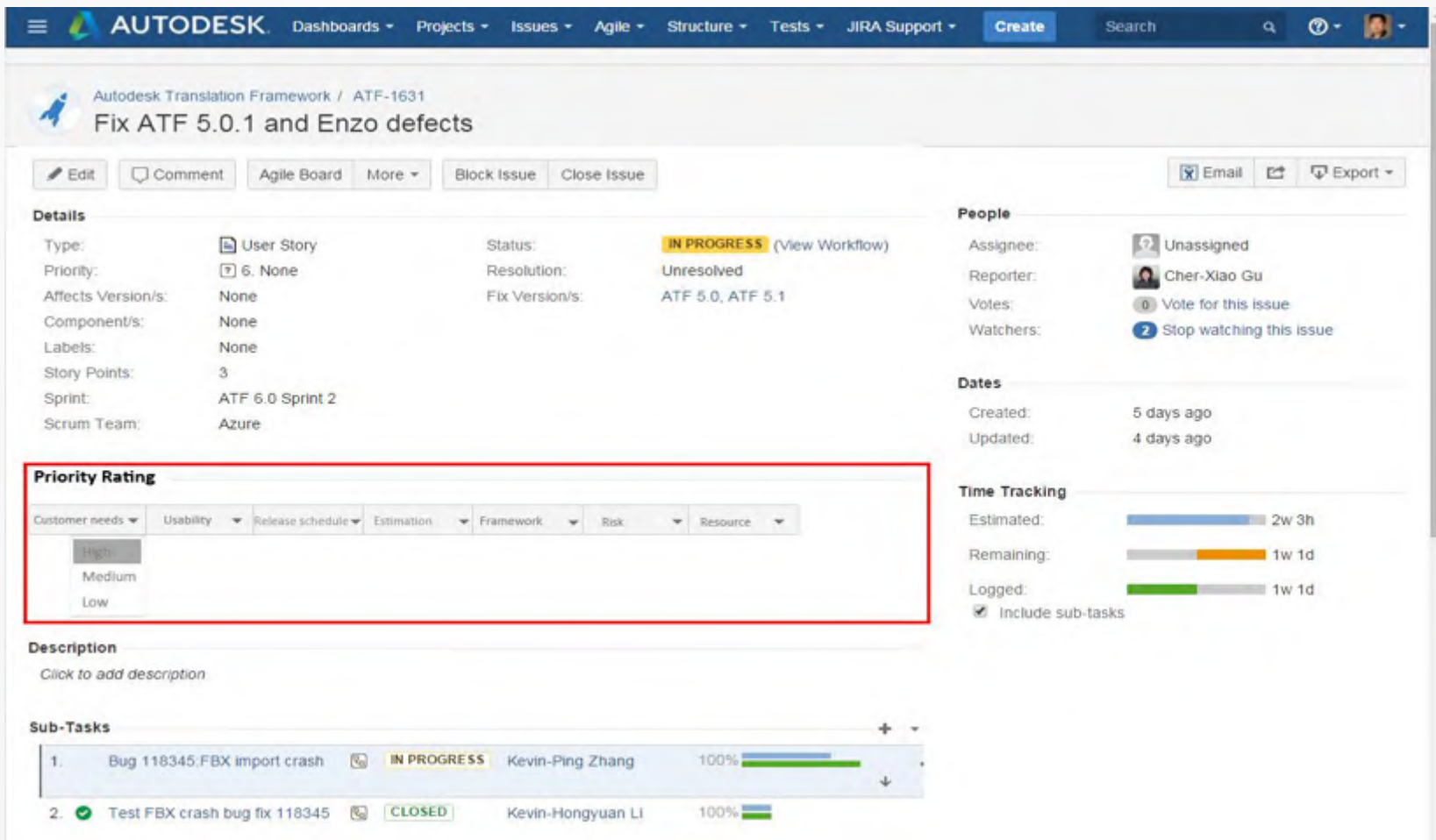
测试用例重叠率高 ~40%
代码覆盖率低 ~50%

应用后：

测试用例重叠率低 ~6%
代码覆盖率高 ~95%

自动化缺陷等级评估系统

具体应用



AUTODESK Dashboards Projects Issues Agile Structure Tests JIRA Support Create Search

Autodesk Translation Framework / ATF-1631
Fix ATF 5.0.1 and Enzo defects

Edit Comment Agile Board More Block Issue Close Issue Email Export

Details

Type: User Story Status: **IN PROGRESS** (View Workflow)
 Priority: 6. None Resolution: Unresolved
 Affects Version/s: None Fix Version/s: ATF 5.0, ATF 5.1
 Component/s: None
 Labels: None
 Story Points: 3
 Sprint: ATF 6.0 Sprint 2
 Scrum Team: Azure

Priority Rating

Customer needs Usability Release schedule Estimation Framework Risk Resource

High
Medium
Low

People

Assignee: Unassigned
 Reporter: Cher-Xiao Gu
 Votes: 0 Vote for this issue
 Watchers: 2 Stop watching this issue

Dates

Created: 5 days ago
 Updated: 4 days ago

Time Tracking

Estimated: 2w 3h
 Remaining: 1w 1d
 Logged: 1w 1d
☒ Include sub-tasks

Description

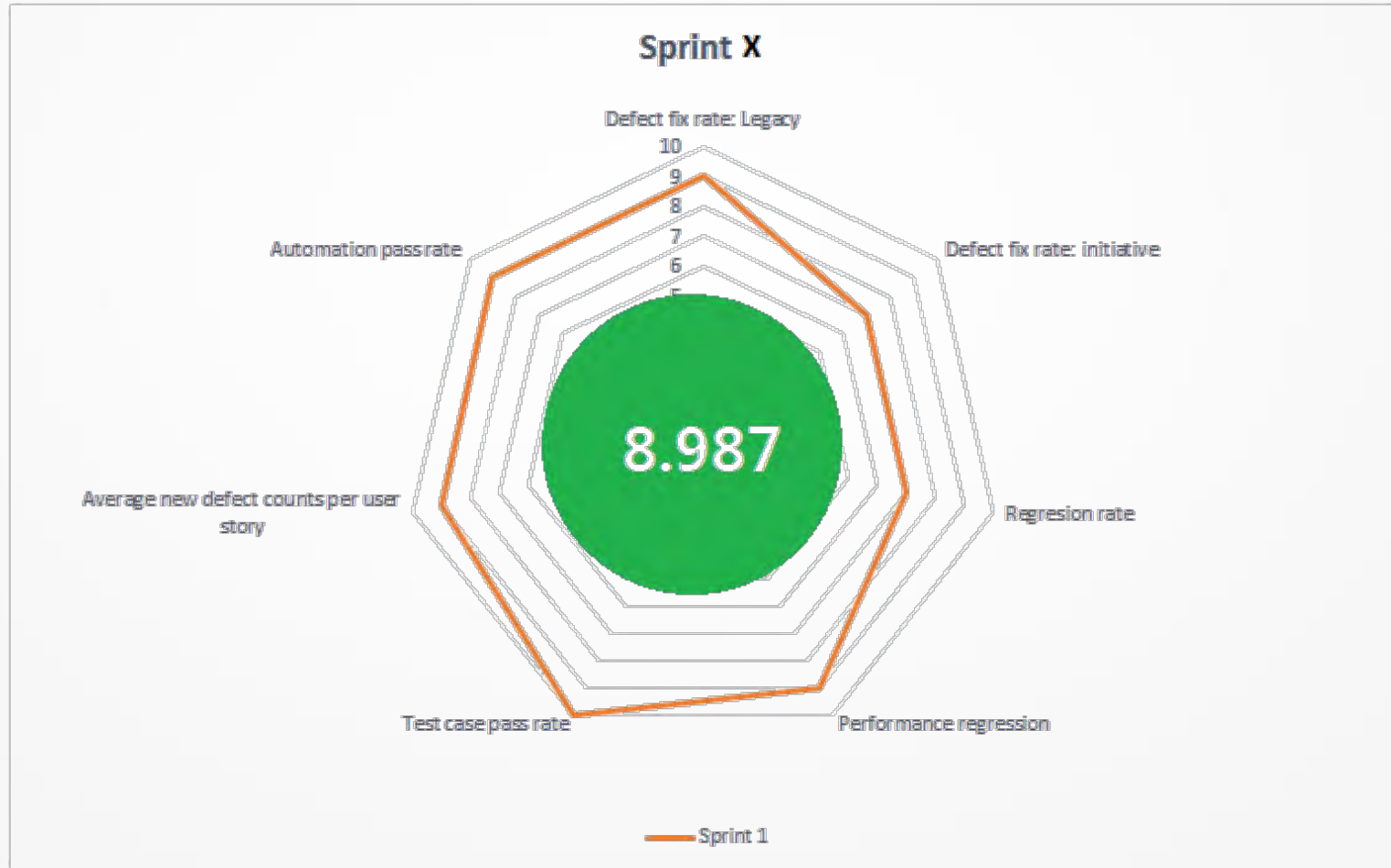
Click to add description

Sub-Tasks

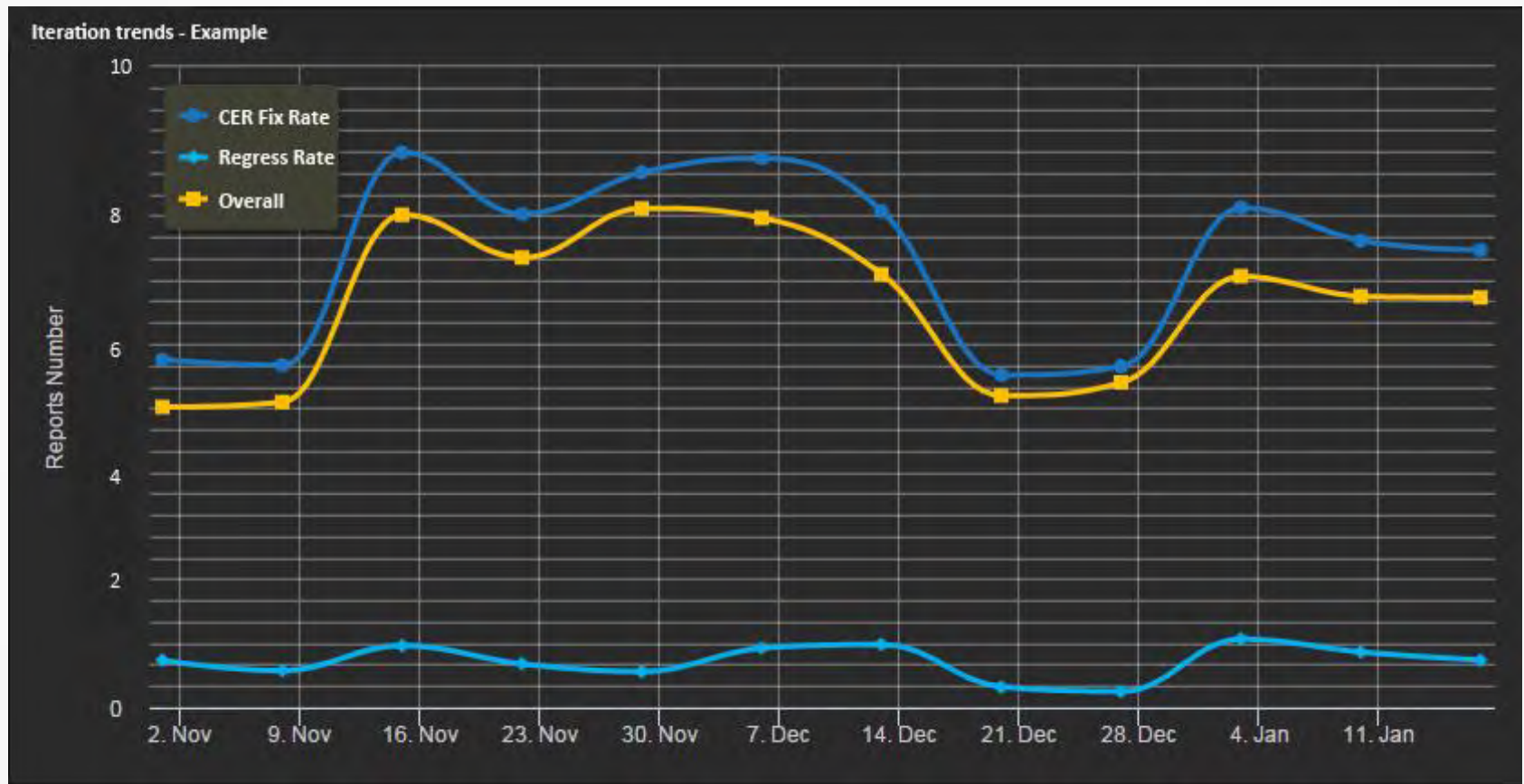
Task ID	Task Name	Status	Assignee	Progress
1.	Bug 118345.FBX import crash	IN PROGRESS	Kevin-Ping Zhang	100%
2.	Test FBX crash bug fix 118345	CLOSED	Kevin-Hongyuan Li	100%

自动化质量评估系统

具体应用



自动化报表工具



Thank You!

