

# U.S.-China Low-Carbon City Action Planning and Technology Solutions Workshop

January 22, 2018  
2018年1月22日

Company: UTC

公司名称： 联合技术

Presenter: Lily Yuan

演讲嘉宾： 袁莉莉



United Technologies Makes Modern Life Possible  
 联合技术使现代生活成为可能

Commercial  
 商用



Employees: ~56,000  
 Sales: \$16.9B



Employees: ~67,000  
 Sales: \$12.0B

Aerospace  
 航空航天



Employees: ~35,000  
 Sales: \$15.1B



Employees: ~41,000  
 Sales: \$14.6B

# Broadest Portfolio of Building Products and Services

## 广泛的建筑楼宇产品及服务



### Vertical Transportation 垂直交通



Elevators



Escalators

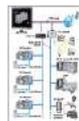
### Climate Controls 环境控制



Residential



Commercial



Integrated Controls



Refrigeration

### Life Safety 消防



Detection & Alarm



Specialty Detection



Suppression

### Security 安防



Access Control



Video Surveillance



Intrusion

### Building Automation 楼宇自动



Integrated Systems



Energy Reporting



Dashboards

### Energy Services 能源服务



Energy Performance Contracting



Energy Management

ELEVATOR & ESCALATOR  
DISPATCHING AND  
CONTROL  
电梯和扶梯的派系统及控制

LOW ENERGY USE  
INTENSITY  
BUILDING DESIGN  
低能耗建筑咨询服务

CHILLER PLANT ENERGY  
OPTIMIZATION  
冷站优化控制

OPTIMIZED THERMAL  
ENERGY UTILIZATION  
冷热源能源系统优化

CHILLER PLANT  
HEALTH MANAGEMENT  
冷站运营诊断

BUILDING ENERGY  
MANAGEMENT SERVICE  
建筑能源管理系统

MOBILE, ELECTRONIC  
ACCESS CONTROL  
移动终端通行

## Building Solutions Is Our Business

**United Technologies is known for its broad portfolio of industry-leading products, but we do much more.** Our AdvanTEC team of building solutions experts designs, develops and implements customized building solutions to solve our customers' most complex challenges. Our enterprise account team serves key verticals, providing industry expertise and an exceptional account management experience.

联合技术公司以其多样化的行业领先产品著称，不仅如此，我们的建筑解决方案专家为客户设计、开发并应用定制化的解决方案解决建筑中的复杂难题，我们的大客户团队用我们多年的经验为重点行业客户提供完善的服务。



# Building Solutions 建筑解决方案

Hospitality  
酒店



Retail  
零售



Higher Education  
教育



Healthcare  
医疗



Data centers  
数据中心



Commercial Offices  
商用办公



Marine  
海运



Higher efficiency and sustainability  
高效可持续



Improve user experience  
提升客户体验



Provide safety and security  
确保安全

Integrated building management  
集成化建筑管理



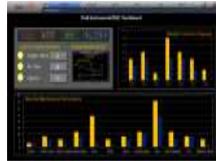
Building energy Management  
建筑能耗管理



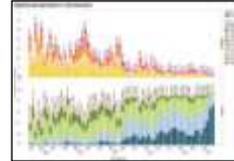
Chiller plant energy optimization  
冷站优化



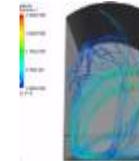
Chiller plant health management  
冷站运营诊断



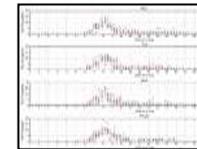
Energy management services  
能源管理服务



Occupancy-based Ventilation  
基于人员占用的通风控制



Occupancy-based HVAC optimization  
基于人员占用的暖通空调优化



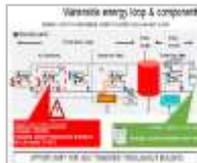
Mobile occupant app  
移动终端APP



DirectKey mobile access  
移动终端门禁



Low energy building  
低能耗建筑



Integrated elevator analyzer  
电梯分析



Video-based elevator dispatching  
视频派梯



Intelligent escalator monitoring  
智能扶梯监控



Sustainable district heating  
区域供热



# Cloud-Based Energy Management Services

## 基于数据云的能源管理服务

EcoEnergy

### Simple, Intelligent Control

简单、智能化控制

Easily edit site hours, HVAC and lighting control schedules at a single site or across many sites

可以简便地编辑一个站点或多个站点的暖通空调、灯光控制等的时间表

### Smart Alarms

智能报警

Alert users to operational issues with fine-tuned alarms  
使用定制化的报警提供使用者运营当中的异常

### Reports & Analytics

报告和分析

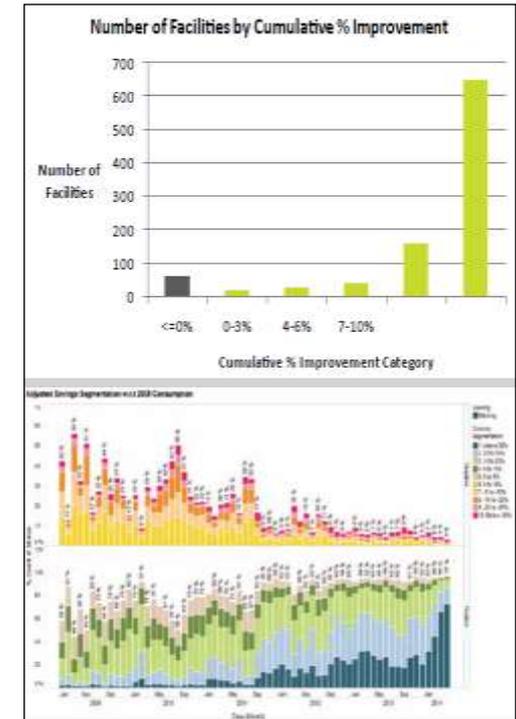
Review and compare site performance through intuitive graphs, reports and analytics  
通过图表、报告和分析，评估和比较建筑的性能

### Project & Event Tracking

事件追踪、投资分析

Track events and capital investment initiatives and their impacts

追踪运营中的事件，追踪项目来评估投资



Sample reports

Leveraging sophisticated IT systems to monitor and analyze the performance of an enterprise's energy infrastructure across a large number of sites

基于IT云技术的，为大型企业提供多站点的建筑性能监控和分析

**Energy Savings**  
Lower energy bills  
节能，更低的能源账单

**Operational Savings**  
Manage buildings better  
节省运营费用，更好地管理建筑

**Cap. Expense Optimization**  
Plan confidently  
投资优化

# Mobile Access Solution

## Onity DirectKey 移动终端门禁解决方案

**1 MILLION**  
**INSTALLED BLUETOOTH LOCKING DEVICES\***

We're experienced and it shows.

\*Applicable experience by Supra, Onity's sister company in UTC Climate, Controls & Security.



**4 MILLION**  
LOCKS INSTALLED WORLDWIDE

**SUPRA**  
**15** YEARS MOBILE TECHNOLOGY EXPERIENCE  
BLUETOOTH LOCKING DEVICES INSTALLED  
**1,000,000**

**20** YEARS ELECTRONIC LOCKING SOLUTIONS EXPERIENCE



Onity DirectKey™ is the industry-leading mobile access solution  
Onity DirectKey™ 是业界领先的移动终端门禁解决方案

# Integrated Building Energy Management

## 集成的建筑能源管理

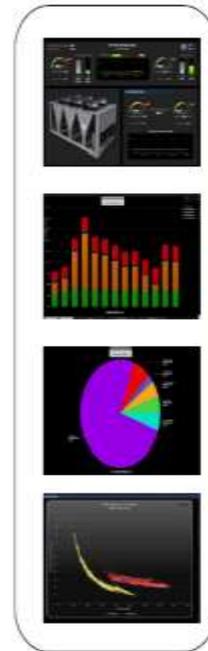
Customized elevator solution  
定制化电梯解决方案

High-efficiency HVAC  
高效的暖通空调系统

Integrated BMS control  
集成的BMS控制

Centralized monitoring  
远程集中监控

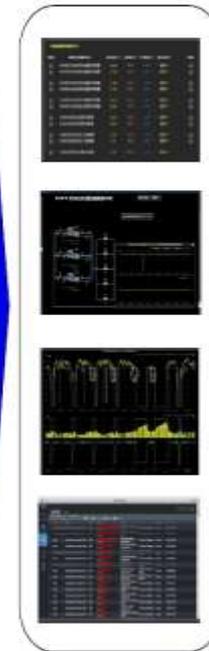
Visualization  
可视化



Benchmark  
对标



Diagnostic  
诊断



Optimization  
优化

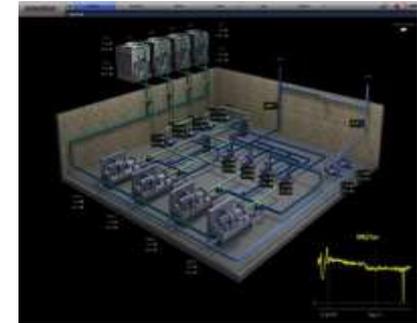


# Chiller Plant Energy Optimization

## 冷站节能优化控制



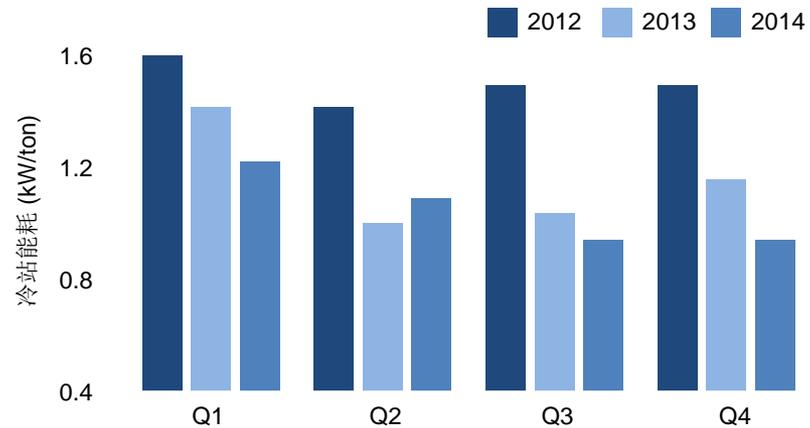
Carrier 19XR  
centrifugal chiller  
离心式冷水机组



Reduced  
energy consumption

能耗减少

↓ 27%



# Ventilation-Based Cognitive Function Improvement

## 基于通风的认知功能改善

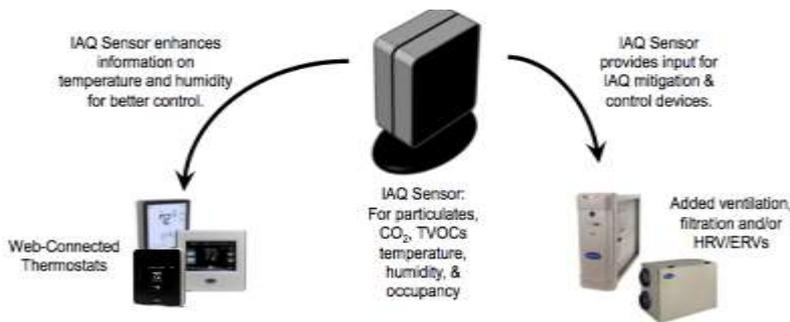
Greater outdoor air ventilation improves occupant health and productivity, but with an energy penalty  
更多的室外空气通风可以改善室内人员的健康并提高生产能力，但会带来更多能耗。

### ADVANTEC DESIGN ASSIST 先科方案设计咨询

Model your building's ventilation energy usage & lifecycle costs at the schematics phase

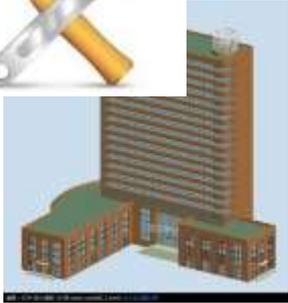
Provide HVAC system selection and controls recommendations to improve cognitive function while reducing energy usage

AdvanTEC 将会对楼宇的通风能耗和生命周期成本在图表阶段进行建模，提供空调系统选型和控制  
系统推荐以降低能耗



# VAV AUTO COMMISSIONING TOOL

## VAV自动调试工具



VAV Function Test  
VAV功能测试

# WebCTRL®



BAS  
楼宇集成系统



Data Analytics  
数据分析



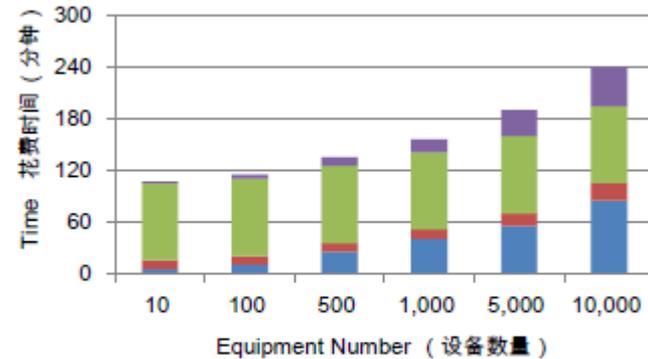
Reports  
报告分析

### Ping An Financial Center 平安金融中心



- 10,000VAV, 200AHU totally
- X30 efficiency increased
- 20% fault identified and fixed

**Effective: Real Problem Identification**  
**Efficient: 4 hrs to Check 10,000 Equipment**



- Data Mapping (数据匹配)
- Install&Config (安装配置)
- Testing (功能测试)
- Analytics (数据分析)

# UTC Center for Intelligent Buildings

## 联合技术智能建筑中心



### Energy efficiency

Chiller plant controls

Lighting controls

Building energy management

### Operational efficiency

Space utilization heat maps

Equipment service dashboard

Elevator monitoring

### Safety & security

Single entry access

Situational awareness

Centralized alarm monitoring

### Occupant experience

CIB Building Applications

Ventilation control for improved cognitive function

Cisco Connected Workplace



Building will open in early 2018 and is being developed to the U.S. Green Building Council's LEED® Platinum standard



Thank you!