



Cisco Connect

Bled, 11. april 2018



Pametna tovarna s Cisco Kinetic platformo

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Solutions architect, Manufacturing

Cisco

- Kratak uvod v Industrie 4.0
- Cisco Kinetic platforma
- Kinetic v svetu proizvodnje - praksa

Industrie 4.0 – Driving to operational excellence



Take a holistic approach to transformation



Bring LoB/OT and IT together for continuous innovation



Build the right foundation – open architecture

IT and Operations



Digital Business
Strategy



People and
Culture



Analytics



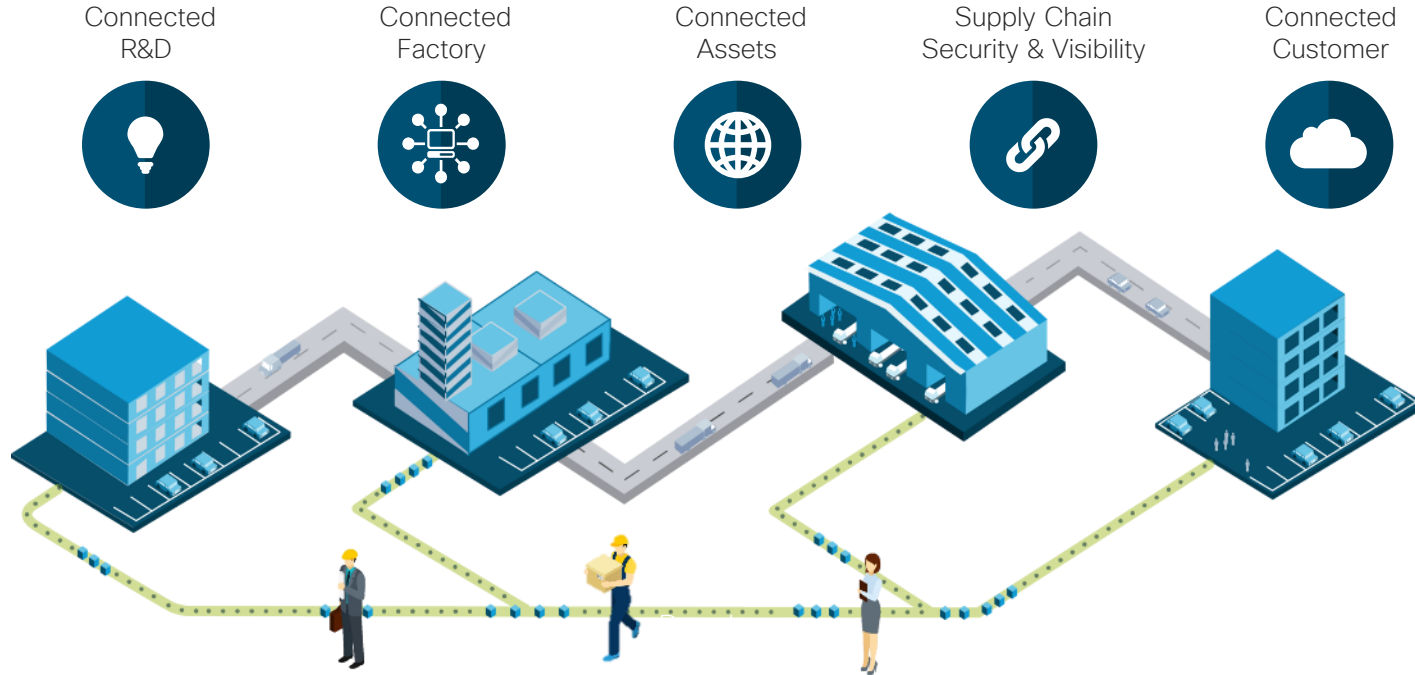
Security



Technology and
Orchestration

Must Come Together

Digital foundation must span the value chain



Global and collaborative
product development

Drive operational
excellence and productivity

Protect and enhance
brand value

Accelerate development and scale
of new products and services

IT's critical role in impacting digital manufacturing

Providing secure, simplified connectivity and data processing



Business Intelligence

Enabling real-time impact



Analytics for improved OEE

Improved innovation

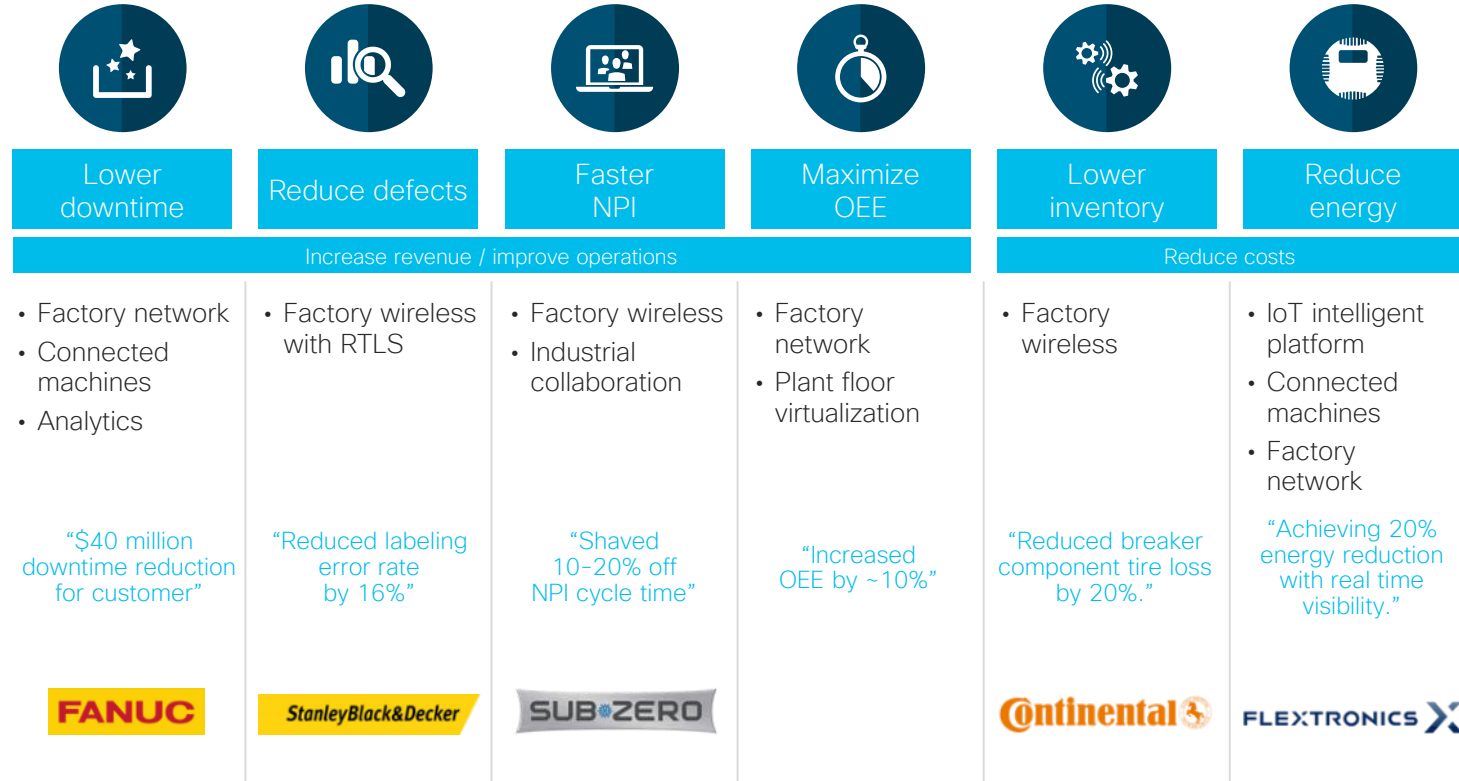
Reduced risk

Business Agility



Partner with OT for success

The business outcomes of digital manufacturing
























Companies want to
derive value from data

IoT exponentially increases
the amount and types of data

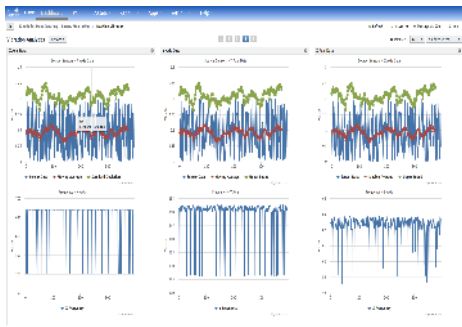
Acceleration Customer Adoption with Kinetic Vertical Use Cases

Starter Solutions

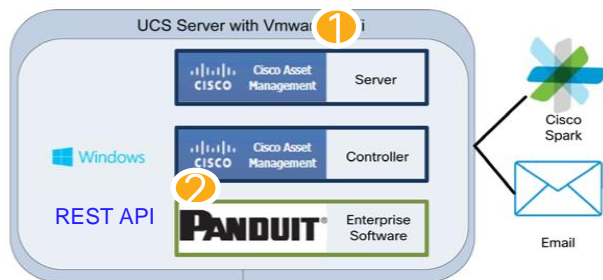
					
Industry	<p>Cisco Kinetic for Cities (CDP – Connected Digital Platform)</p>	<p>Cisco Kinetic for Manufacturing</p>	<p>Cisco Kinetic for Oil & Gas</p>	<p>Cisco Kinetic for Transportation</p>	<p>Cisco Kinetic for Retail</p>
Use Cases	<ul style="list-style-type: none">  Lighting  Parking  Urban Mobility (Traffic Analytics, Crowd Analytics)  Environment  Safety & Security 	<ul style="list-style-type: none">  Connected Machine (OEM, Factory Owner)  Equipment Health Monitoring  Energy Monitoring  Track & Trace (RTLS) 	<ul style="list-style-type: none">  Connected Rig  Connected Oil Well  Connected Refinery 	<ul style="list-style-type: none">  Connected Fleet (Technical Services, First Responder)  Connected Roadway 	<ul style="list-style-type: none">  Retail Site Monitoring  Sports & Entertainment (concessions)

Kinetic Equipment Health Monitoring – Architecture

Kinetic Dashboard



UCS With VMWare ESXi 5.5



Cisco IE 1000 (Optional)



900 MHz Gateway



Wireless

900 MHz wireless



Vibration & Temperature Sensors

Vibration, Temperature, Humidity Sensors

1 Kinetic <--> Panduit REST / Networking functions APIs

- Controller Functions API
- Controller Management API
- Events API
- Monitoring API
- Object Store API
- Role Management API
- Scripting API
- Settings Management API
- Tenant Management API
- User Management API

Function	Description
httpGet()	Invokes HTTP GET request
httpGetExt()	Invokes HTTP GET request with extended result object, that also contains the headers.
httpPost()	Invokes HTTP POST request
httpPostExt()	Invokes HTTP POST request with extended result object, that also contains the headers.
HttpRequest()	Invokes HTTP request
ping()	Tries to ping a target ip address.
pingCurrentDevice()	Tries to ping the device which is currently processed in scripting context.
pollPort()	Tries to do a TCP connect on the target port of the target device.
publishMqttMessage()	Sends a user configurable message to a configurable topic on a configurable MQTT broker
tcpReceive()	Receive data using TCP.
tcpSend()	Sends data using TCP and optionally receive a response.
udpReceive()	Receive data using UDP.
udpSend()	Sends data using UDP and optionally wait for a response from the remote host.

2 Kinetic Script for Panduit Plugin

```

157
158 //log("getSensorData="+JSON.stringify(sensorsToRead));
159
160 if (!sensorsToRead)
161     return null;
162 var result = new CMO_ScriptProxy.SensorResult();
163 var now = new Date();
164 var hour = now.getHours();
165 var random = Math.random();
166
167 if (sensorsToRead.has("sensor_temp_1"))
168 {
169     var currentTemp = parseInt(Math.floor(Math.random() * 100) + 10);
170     //log("sensor_temp_1="+parseInt(Math.floor(Math.random() * 100) + 10));
171     result.set("sensor_temp_1", parseInt(Math.floor(Math.random() * 100) + 10));
172 }
173
174 }
175
176 if (sensorsToRead.has("sensor_counter_1"))
177 {
178     //log("sensor_counter_1="+parseInt(Math.floor(Math.random() * 100) + 10));
179     result.set("sensor_counter_1", parseInt(Math.floor(Math.random() * 100) + 10));
180 }
181 }
182
183
    
```

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