IGNITION COMMUNITY CONFERENCE 2013

POWERFUL CONNECTIONS

IGNITION COMMUNITY CONFERENCE 2013

POWERFUL CONNECTIONS

inductive automation | Ignition

DREAM IT
DO IT

IGNITION WORLD MAP

- As of this year, 20% of Fortune 500 companies are using Inductive Automation software
- Tens of thousands of Ignition installations in more than 70 countries
- Supported by hundreds of integrators around the world

POWERFUL CONNECTIONS

IGNITION COMMUNITY CONFERENCE 2013

KEYNOTE AGENDA

Don Pearson

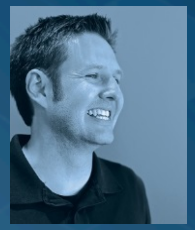
- *Innovation-Powered Manufacturing*
- *Conclusion*

Steve Hechtman

- *History & State-of-the-company*

Carl Gould

- *Ignition HMI/SCADA Development Roadmap*



Colby Clegg

- *Ignition HMI/SCADA Development Roadmap*

Travis Cox

- *Ignition HMI/SCADA Development Roadmap*

Kevin McClusky

- *Ignition HMI/SCADA Development Roadmap*

Tom Hechtman

- *Ignition MES Roadmap*

Disruptive Technology, Cross-Pollination and Ignition

- Revolutionary changes are coming
- Old strategy is unworkable in 21st Century

DISRUPTIVE TECHNOLOGY

Strategic Inflection Point

"A change so powerful that it fundamentally alters the way business gets done."

- **Andy Grove**
  Chairman, Intel

A Change in the Order of Things

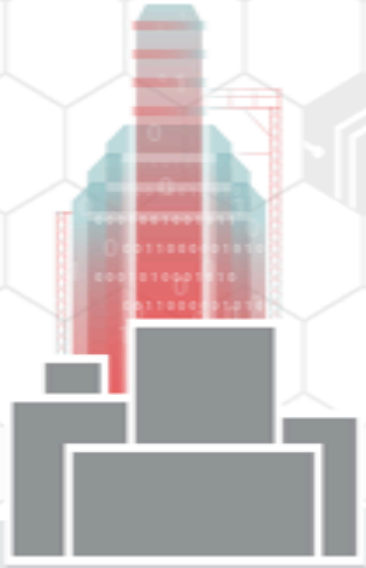
Or, Beyond the Point of No Return…

Disruptive technologies have *"the potential to disrupt and radically change the way manufacturers do business. Still, manufacturers tend to be conservative and slow to embrace new information technologies."*

- ARC white paper, "Information-Driven Manufacturing," Feb. 2013

Big Data

- Increase in devices causing increase in data
- 3 Vs: increasing volume, variety & velocity
- Hundreds to thousands times more data
- May widen use of non-relational databases



The Cloud

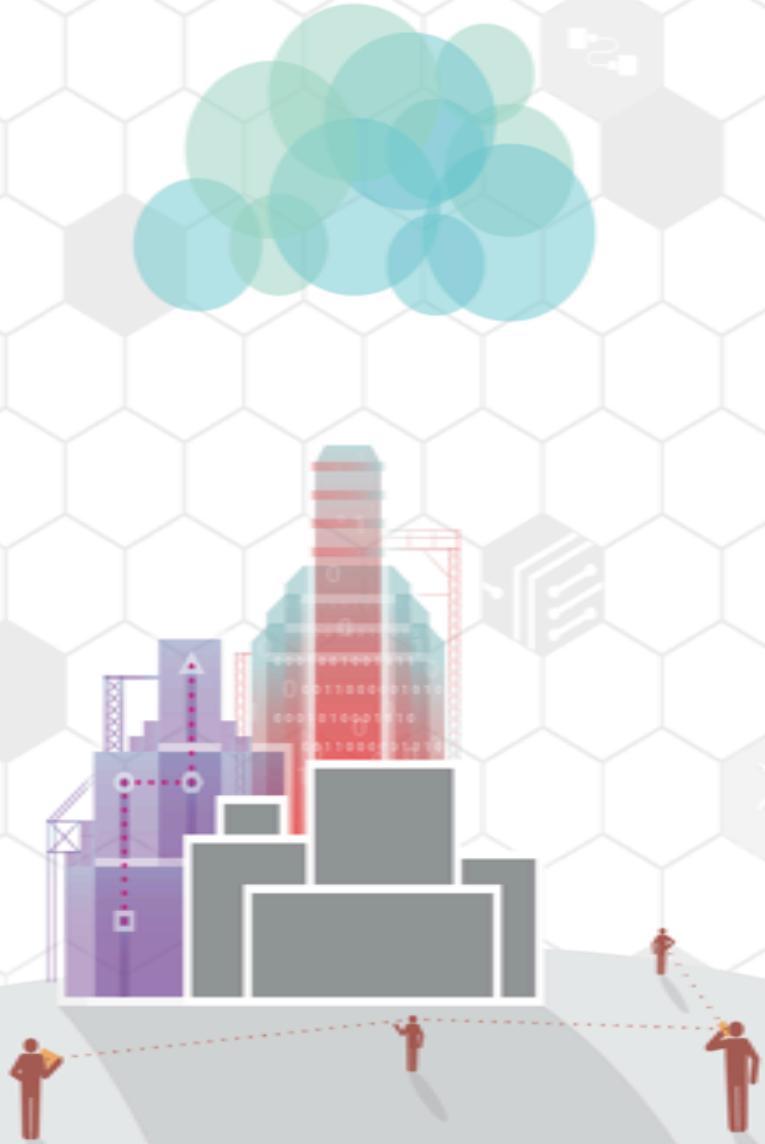
- Hosted, online services instead of IT network
- Seen as more scalable, cost-efficient
- Many predict widespread move to Cloud
- Concerns: privacy, implementation, control

Internet of Things (IoT)

- Computers, devices, etc. collect data, connect w/ each other
- AKA machine-to-machine (M2M)
- Enables new level of automation
- 4th industrial revolution / Industry 4.0
- Mfg. more networked, decentralized, data-driven

Mobility

- Mobile devices more prevalent in workplace
- More companies adopting BYOD policies (Bring Your Own Device)
- BYOD = Cloud-friendly, more productivity & savings



Social Technologies

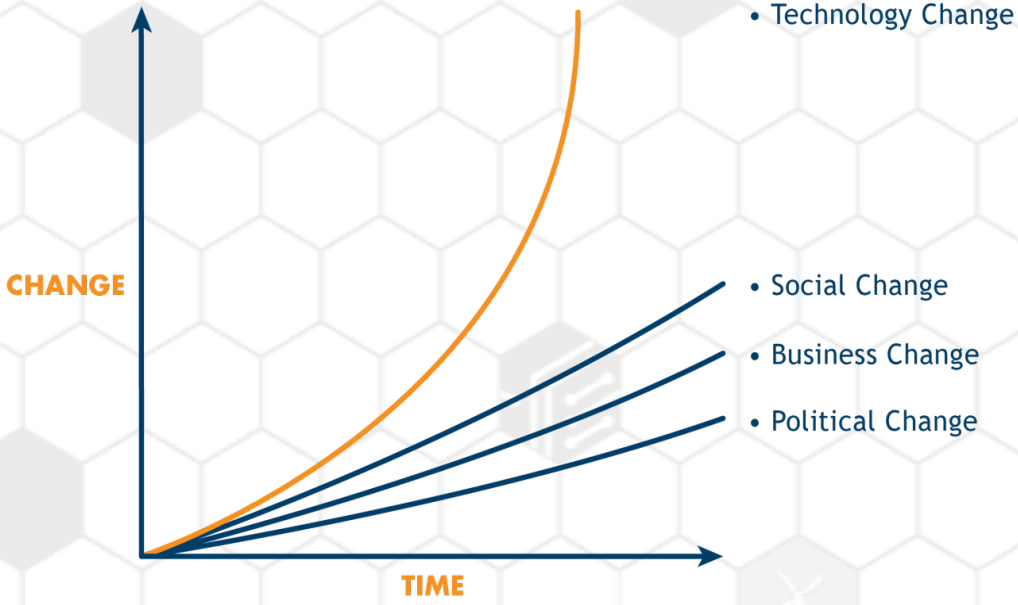
- Unified communications (IM, videoconferencing, VoIP) & social platforms
- Expertise & info in or out of dept. / company
- Collaboration w/ clients & vendors helps compete

Common Links

- All increase access to info
- All promote powerful connections - in real time
- Together, disruptive techs will transform the industry
- Forcing companies to change

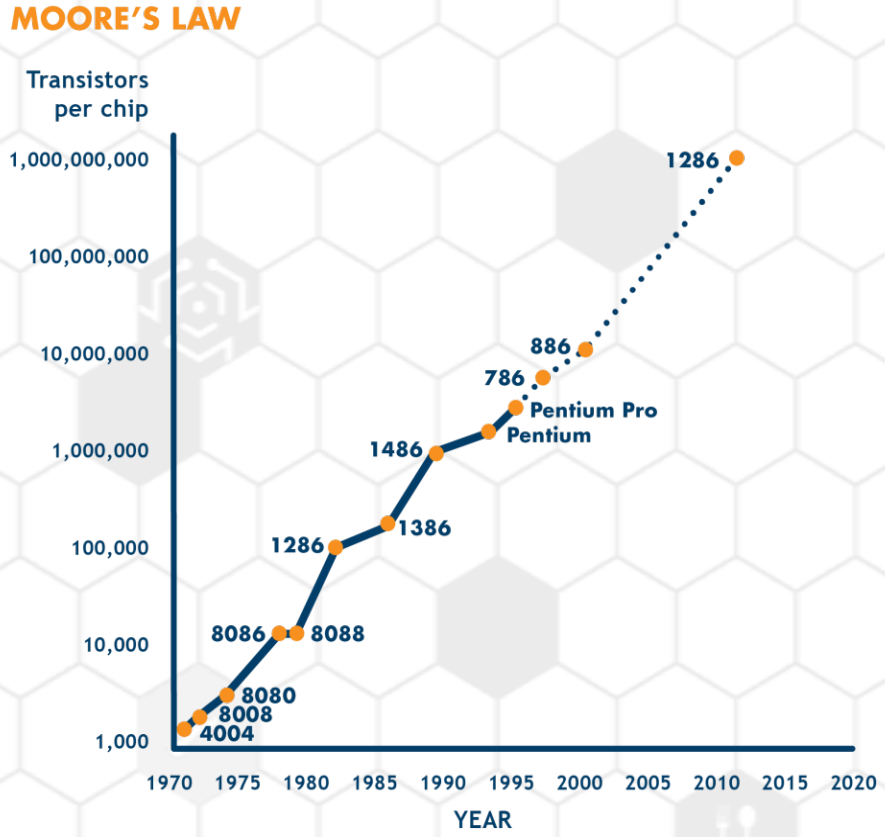
The Law of Disruption

- Social, political, and economic systems change incrementally, but technology changes exponentially.



Source: Unleashing the Killer App
By: Larry Downes, Chunka Mui

MOORE'S LAW



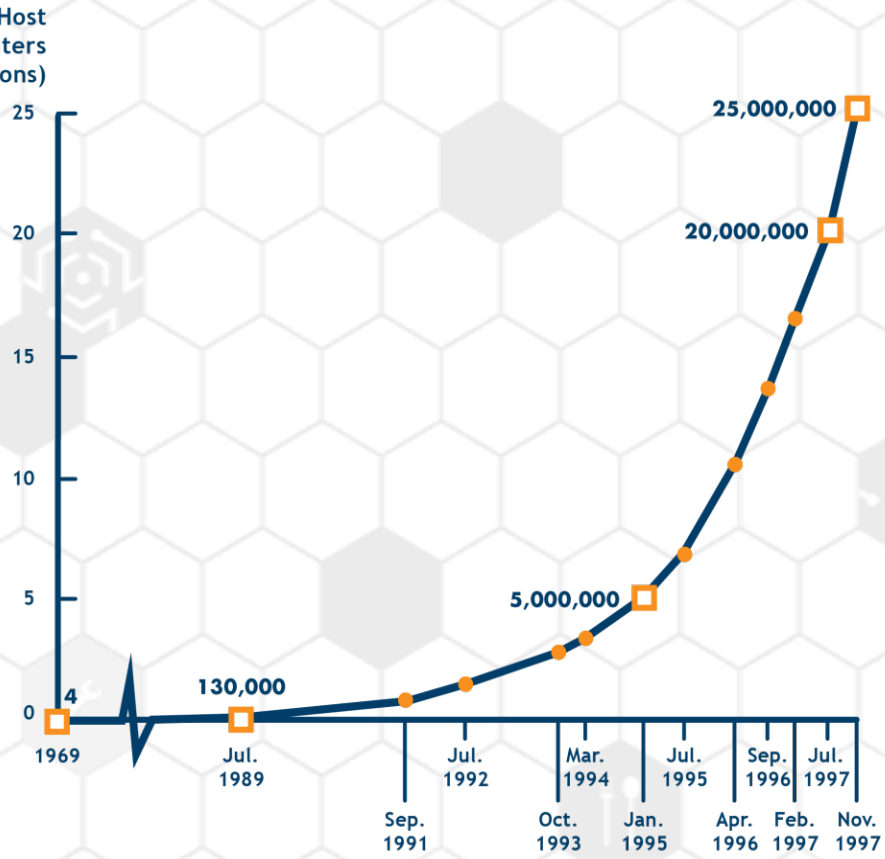
Sources:
Adapted from Otis Port, Andy Reinhardt, Gary McWilliams, and Steven V. Brull, "The Silicon Age? It's Just Drawing," *Business Week*, 9 December 1996.

"Unleashing the Killer App" by Larry Downes, Chunka Mui

METCALF'S LAW

Utility = f(users)²

BIRTH OF A NETWORK



World Wide Web Sites

Date	Number
June 1993	0
June 1996	200,000
Sept 1997	1,400,000

Sources:
The Internet Society, http://www/isoc.org/.
"Unleashing the Killer App" by Larry Downes, Chunka Mui

It is an idea that has not been inspected and evaluated personally, but just accepted as true. It is a solid, stuck immovable idea. Can't be budged.

Technology is an Expense!

"It is risky to go too fast with technology." The 20th Century mindset: "Run it forever, especially when it comes to the plant floor."

- ARC white paper, "Information-Driven Manufacturing," Feb. 2013

- That used to work when things were stable and didn't change very much or very rapidly
- Reflects the fixed idea that tech investment is an *expense* to put off as long as possible

Technology is an Investment!

"The 21st century idea sees technology as an investment to be leveraged to competitive advantage. The newer technologies have rapidly changed the landscape. Now the greatest risk is associated with moving too slow at incorporating new technologies."

"Information-driven companies embrace IT technologies throughout the enterprise. Almost every plant or facility runs the latest version of the appropriate software (or soon will), so that it can operate in a connected, information-driven mode consistent with the rest of the organization."

- ARC white paper, "Information-Driven Manufacturing," Feb 2013

Innovation & Today's Companies

- Innovators lead the industry, create new markets
- Innovators change game while others just compete
- They set pace, unlikely to fall behind
- Innovation not about prestige or modest gains in efficiency

Innovation is now a matter of business survival.

Embracing Innovation

- Slow change creates big opportunities:
  - Thought leadership
  - Shape future by applying disruptive tech
- To thrive long-term, be an ***innovation-powered manufacturer***

Strong focus on data

- Gathering larger datasets, in real time
- Extending it throughout enterprise
- Displaying it to more employees
- Increasing access to data
- Analyzing data
- Basing decisions on data

Information Anxiety

- Richard Saul Wurman (TED Conf., *Information Anxiety*) wrote about information overload
- Turn data into info, info into knowledge, knowledge into wisdom

Innovation-Powered Philosophy

- Open up flow of info, not lock it down
- Flow of info improves collaboration & decision-making
- Be aligned w/ path of disruptive technologies
- Poised to ride waves of change, not be overturned
- Continue & accelerate rate of innovation
- Be an industry thought leader

Ignition & Cross-Pollination

- Take an idea from one industry and apply it to another
- Example: Ignition
- Cross-pollinated IT w/ SCADA software
- Unlimited licensing

Guidelines to accelerate adoption & innovation

- Connect to other industries
- Share ideas & collaborate with peers
- Keep an open mind about new ideas & technologies
- Create a free flow of data between people & departments
- Create a free flow of data between systems

Ignition Empowers Innovation

- Facilitates the free flow of data in real time
- Lowers barriers to innovation
- Facilitates powerful connections between people, depts. & systems
- Inspires users to imagine new possibilities
- Fuels fire for innovation

Ignition!® by inductive automation

CONCLUSION

- Bottom line: Innovation is a choice.
- Choose to stand still or become innovation-powered
- Indecision is a decision not to innovate
- Commit to a path of continual innovation
- Innovate through free flow of info & ideas
- Succeed in new world of disruptive technologies

DIFFICULTY OR OPPORTUNITY

"A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty."

- Winston Churchill

Image by Wikipedia.com

INTRODUCING

Steve Hechtman

President / CEO

Welcome

IGNITION COMMUNITY CONFERENCE 2013

POWERFUL CONNECTIONS

How did we get here?

What did I learn from my research?

How did we come to start Inductive Automation?

COMPANY ORGANIZATION

It takes more than just software

- HR team
- Finance team
- Marketing team
- Sales team
- Development team
- Support team
- Training team
- QA team
- PR team
- Legal team, etc.

Things to know about Inductive Automation

- We've roughly doubled in size every year
- No outside investors
- Profitable for years
- Debt-free
- Fund own expansion

What does this mean?

In conclusion

INTRODUCING

Carl Gould

Co-Director of
Software Engineering

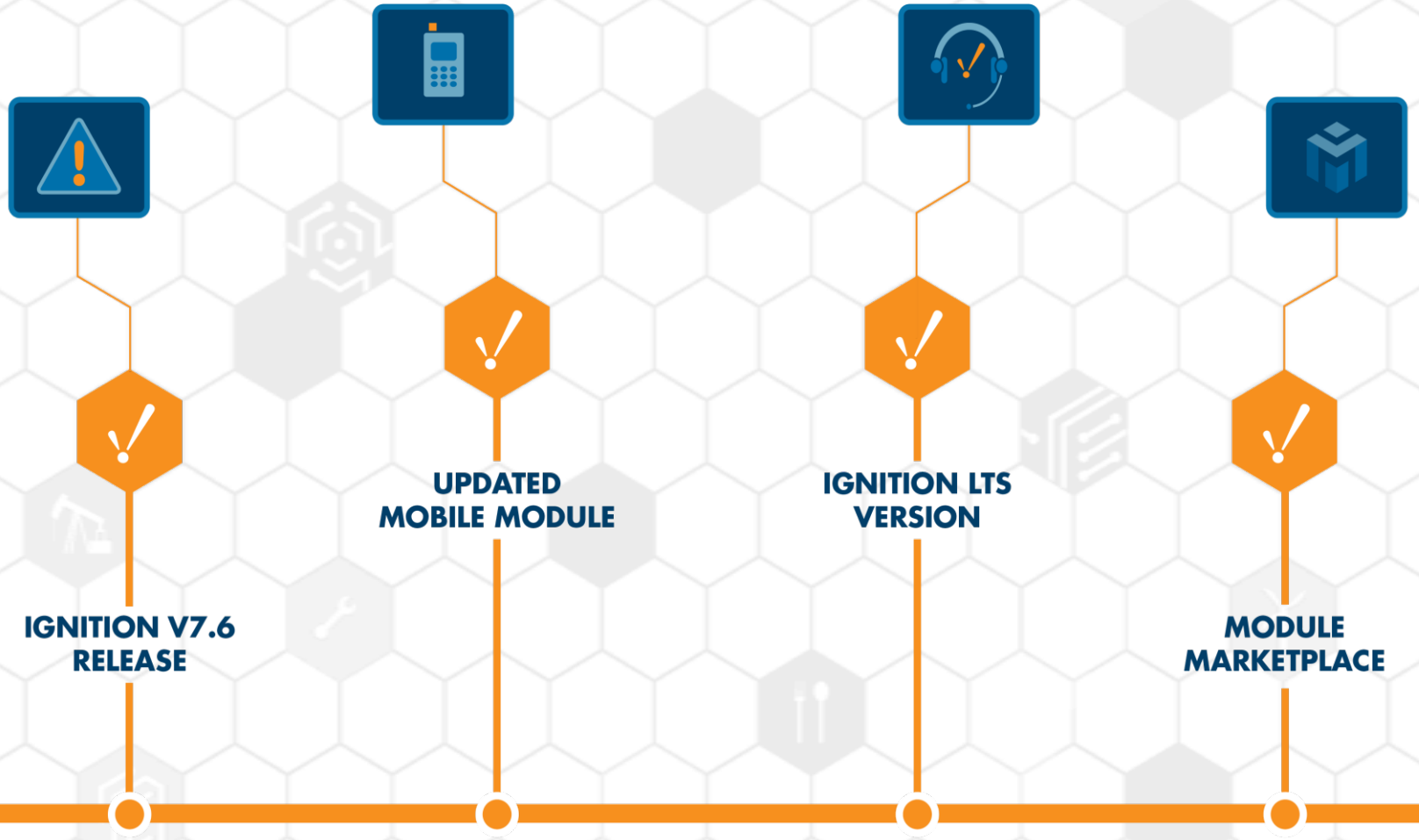
Colby Clegg

Co-Director of
Software Engineering

Ignition!®

by inductive automation

RELEASED THIS YEAR

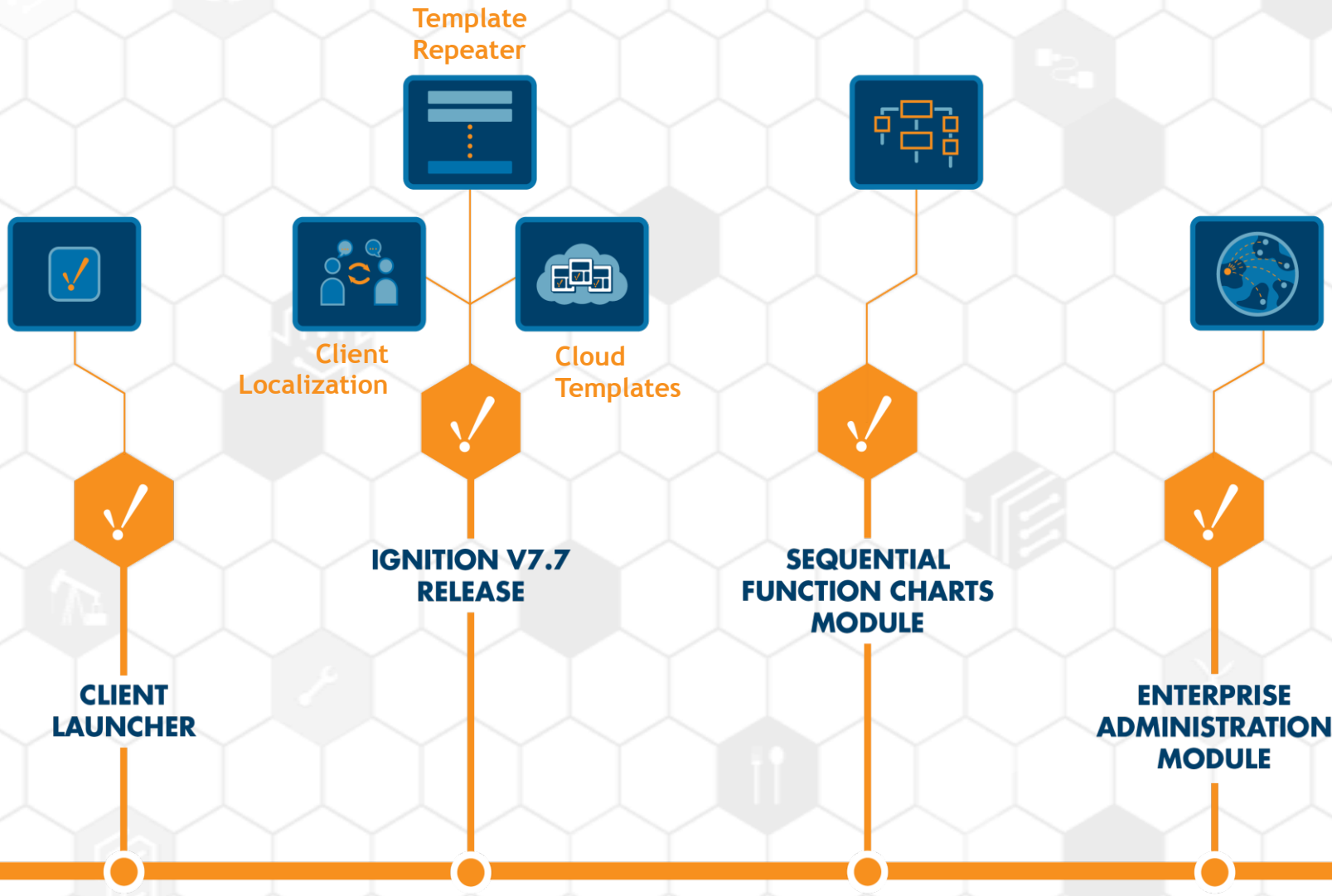


MODULE MARKETPLACE

MODULE MARKETPLACE

- Launched in March
- First community-based module store for industrial automation software
- Download all Ignition modules & packages
- Try or buy any module
- Simply install modules by uploading to the Ignition Gateway
- Open to third-party module developers

HMI / SCADA ROADMAP OVERVIEW



HMI / SCADA ROADMAP

CLIENT LAUNCHER

CLIENT
LAUNCHER

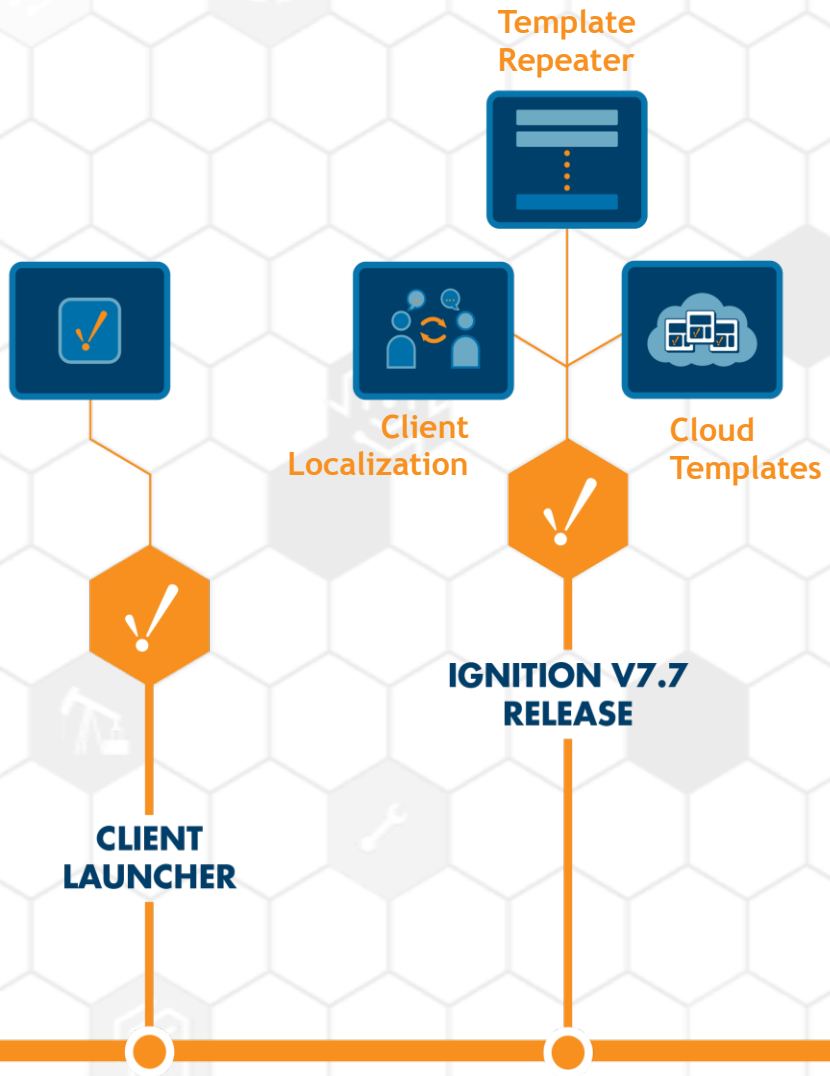
Current Client Launcher

- Java Web Start makes web-launched clients possible
- Going to continue using Web Start but also created an alternative launcher

New Client Launcher Features

- The alternative launcher is better for Macs & dedicated workstations
- For Windows, Mac & Linux

HMI / SCADA ROADMAP



Ignition v7.7
by inductive automation

Client Localization

Template Repeater

Cloud Templates

Also many other new features in v7.7

CLIENT LOCALIZATION

Client Localization Features

- Switch client language on the fly
- Useful when working for international clients
- Translate screens easily in the designer
- Built-in database of terms in multiple languages

Client Localization Benefits

- Build everything in your language, then translate it
- Build more powerful connections across language barriers

TEMPLATE REPEATER

Template Repeater Features

- A whole new way to leverage templates
- Lets you create dynamic windows by repeating templates
- Use dynamic information from plant floor or database table

Template Repeater Benefits

- Template Repeater creates powerful connections to dynamic, variable content
- Gives you even more flexibility developing projects in Ignition

INTRODUCING

Travis Cox

Director of Training

CLOUD TEMPLATES

Cloud Templates Features

- Developing an extensive cloud-based template repository
- Hosted by Inductive Automation
- A new way to connect and share with the Ignition community
- Share templates publicly or privately

Ignition Demonstration

by inductive automation

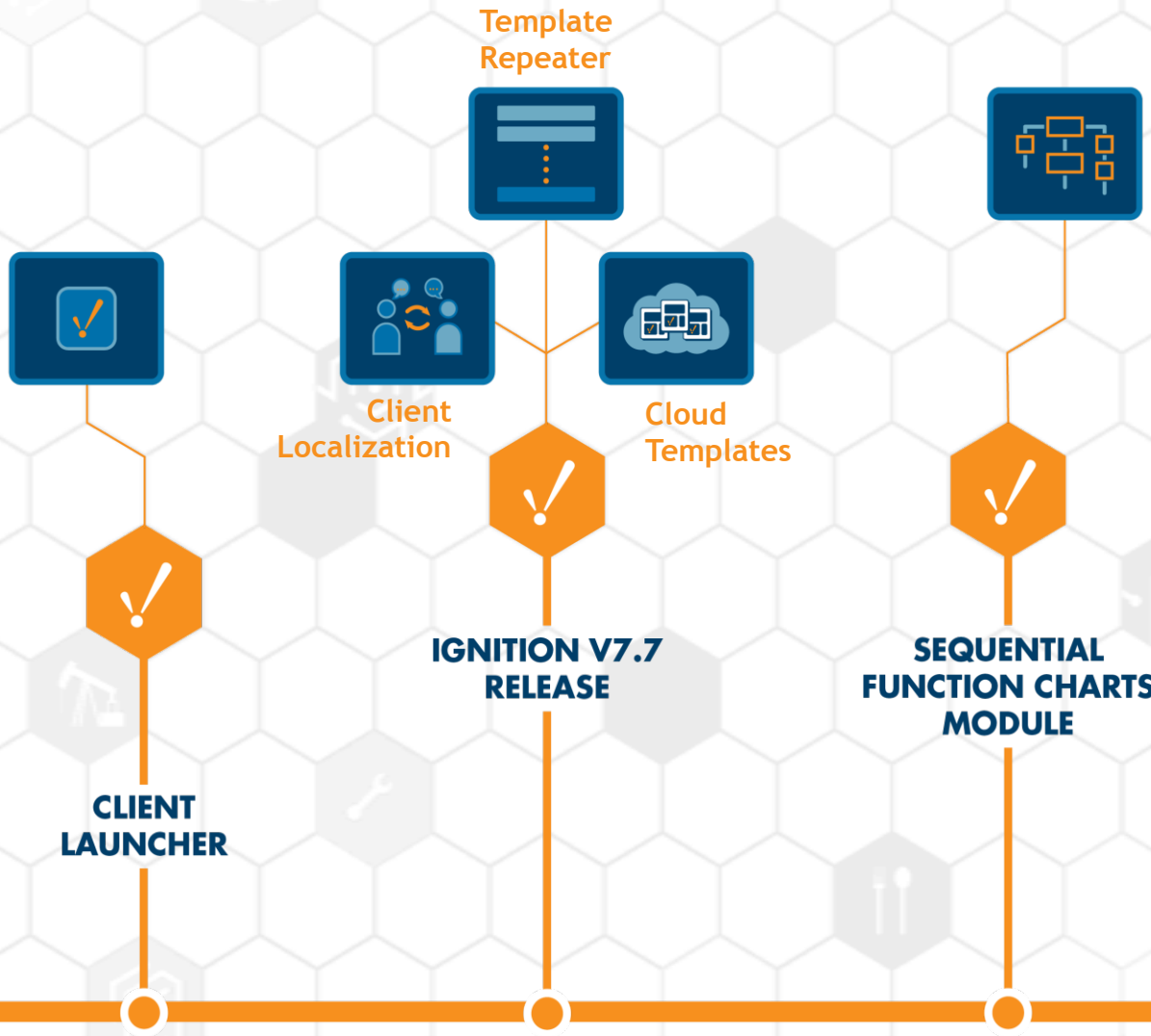
Ignition v7.7

More flexible to use, easier to access and share your work

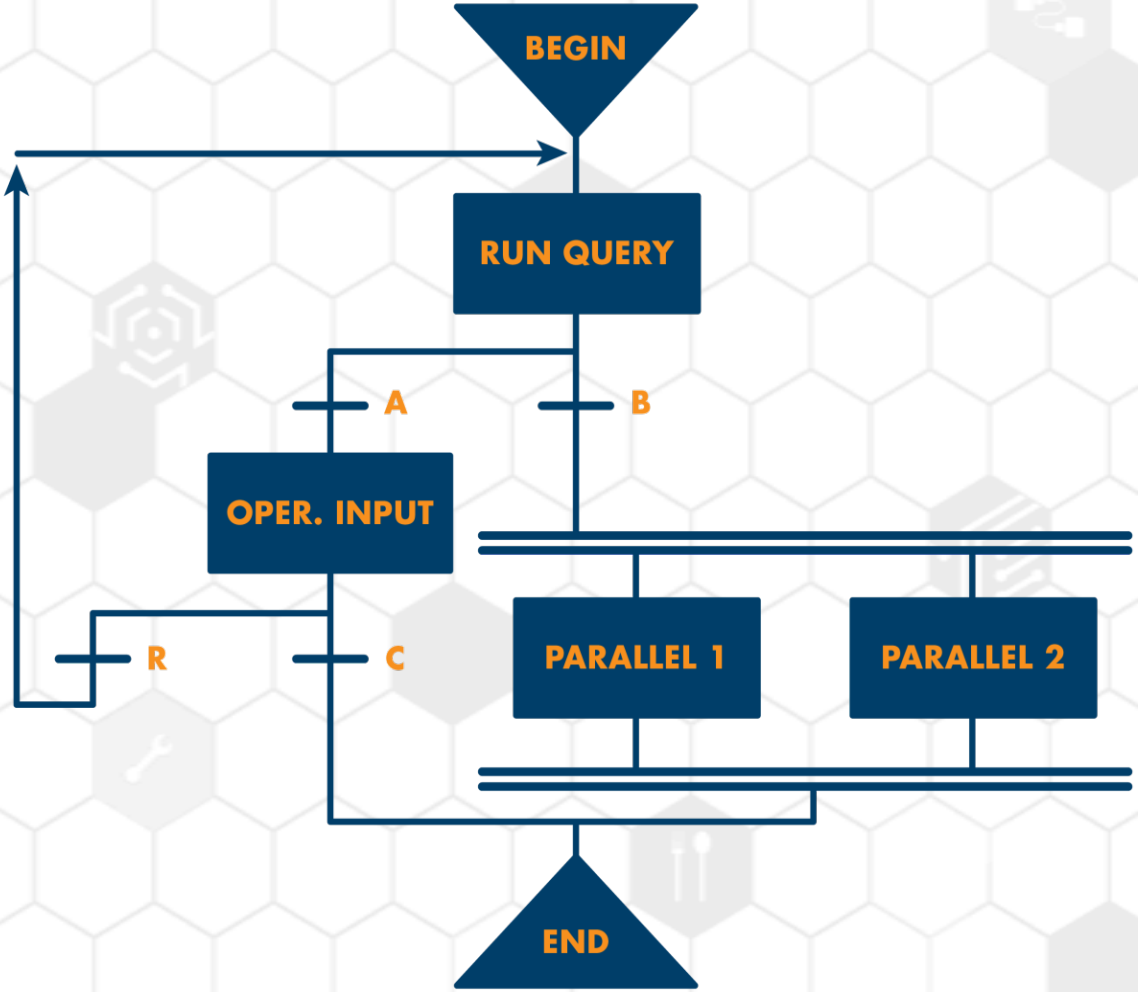
Ignition v7.7 features

- Ad-hoc charting
- Fine-grained designer and Gateway security
- Tag event scripts
- Global scripting modules
- More powerful table component
- Better docking layout control
- ControlLogix firmware v21 support
- Integrated support for IA Labs scripting functions
- Client local-fallback on comm loss
- 3rd party Python Module Management
- Much more…

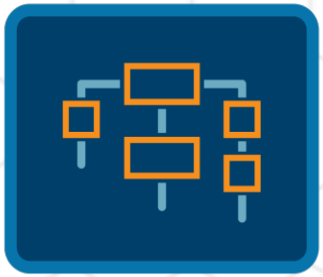
HMI / SCADA ROADMAP



SEQUENTIAL FUNCTION CHARTS MODULE



SEQUENTIAL FUNCTION CHARTS MODULE



SEQUENTIAL FUNCTION CHARTS

SFC Features

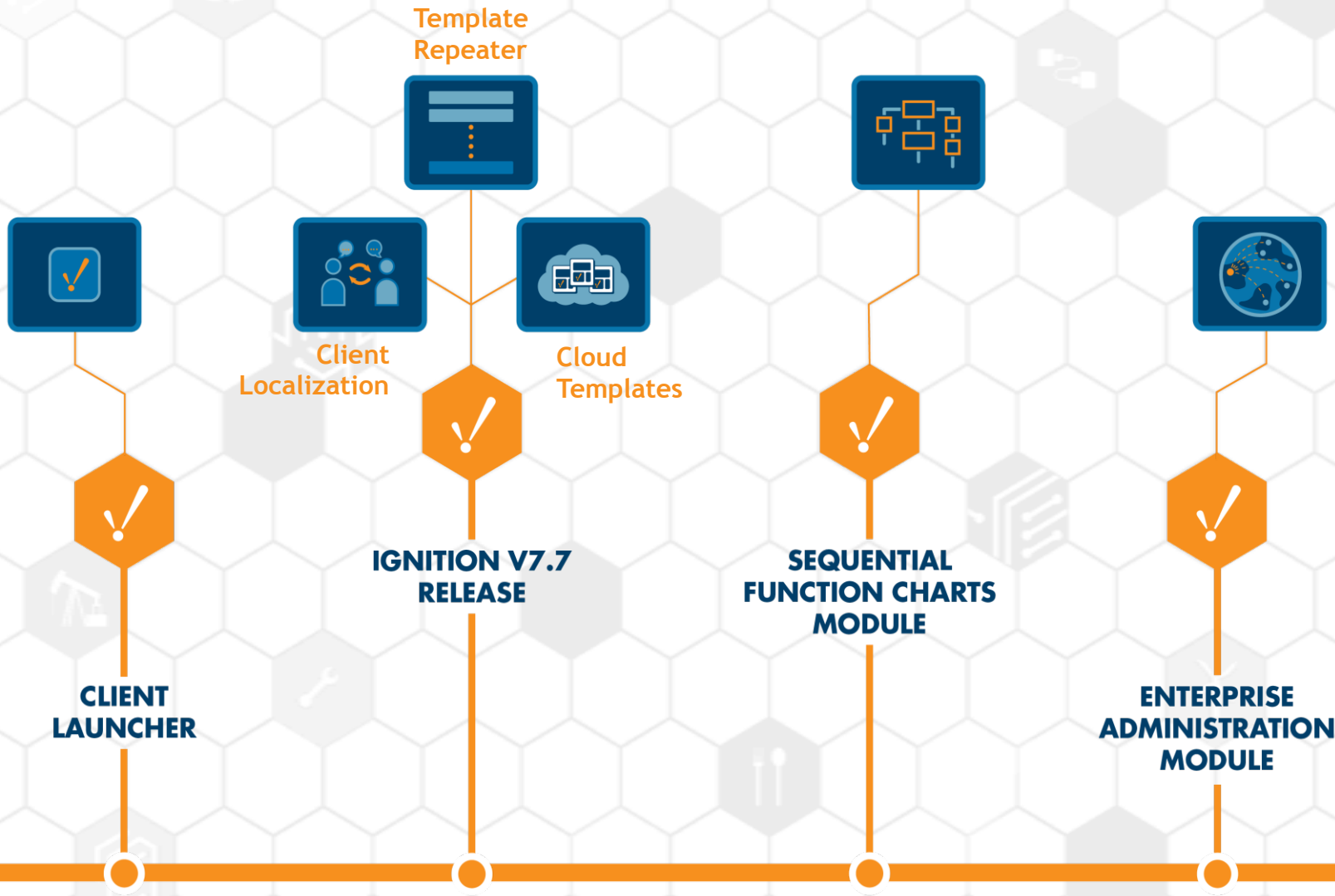
- Querying database, gateway to client messaging, writing to tags
- Script events that run in parallel

SFC Benefits

- See which step is active and has run
- Makes debugging of charts easier

Adding SFC to Ignition makes it more than just SCADA

HMI / SCADA ROADMAP



ENTERPRISE ADMINISTRATION MODULE

ENTERPRISE ADMINISTRATION

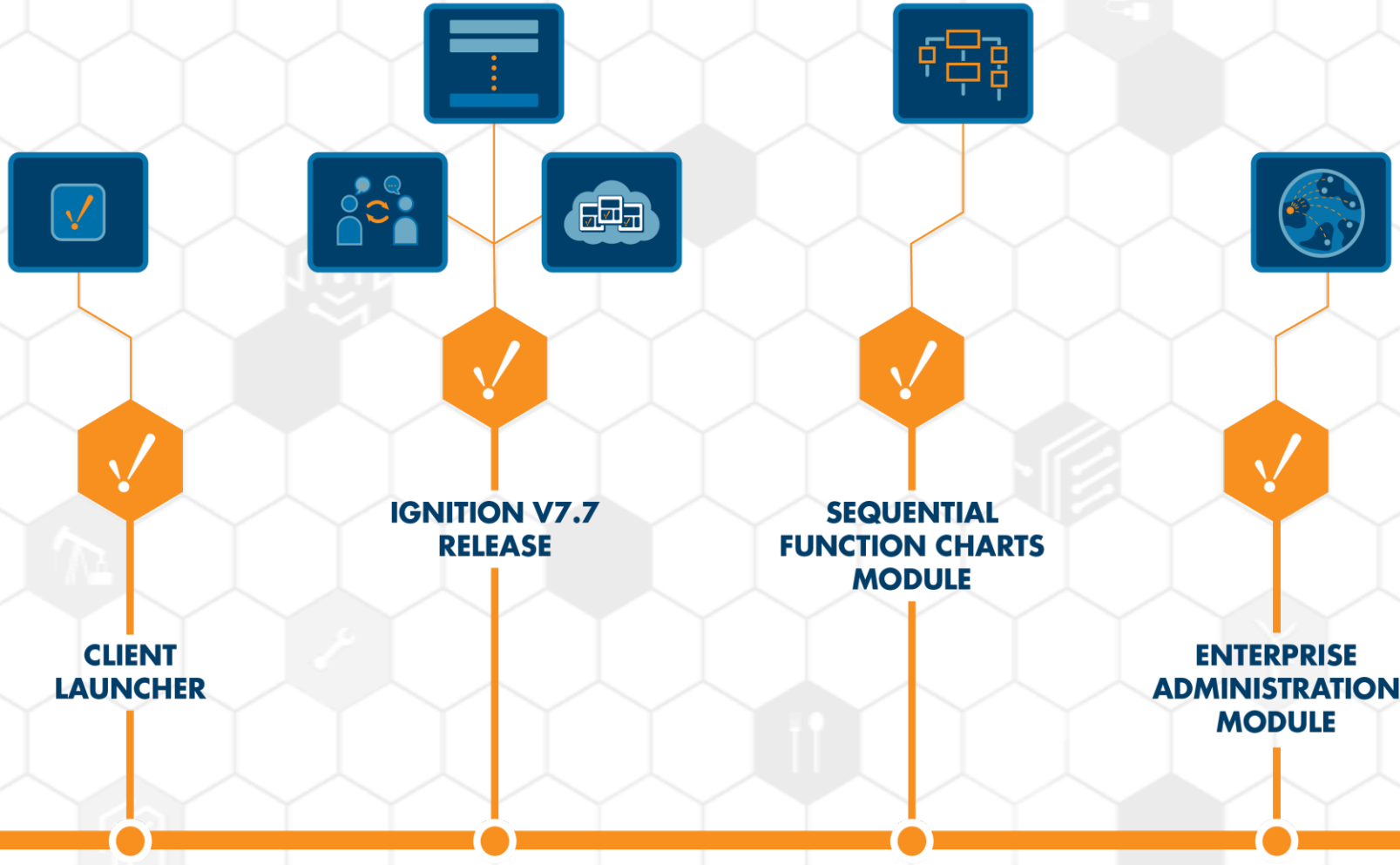
Module features:

- Automatic, centralized backup and licensing management
- Get alerts right away
- Scheduled upgrade rollout

Benefits of the module:

- Manage huge installations with one person
- Save man-hours and money
- Peace of mind: get running again with latest backup

HMI / SCADA ROADMAP



INTRODUCING

Kevin McClusky

Director of Design Services

Ignition! Demonstration

by inductive automation

Google Glass Module

INTRODUCING

Tom Hechtman

MES Product Manager

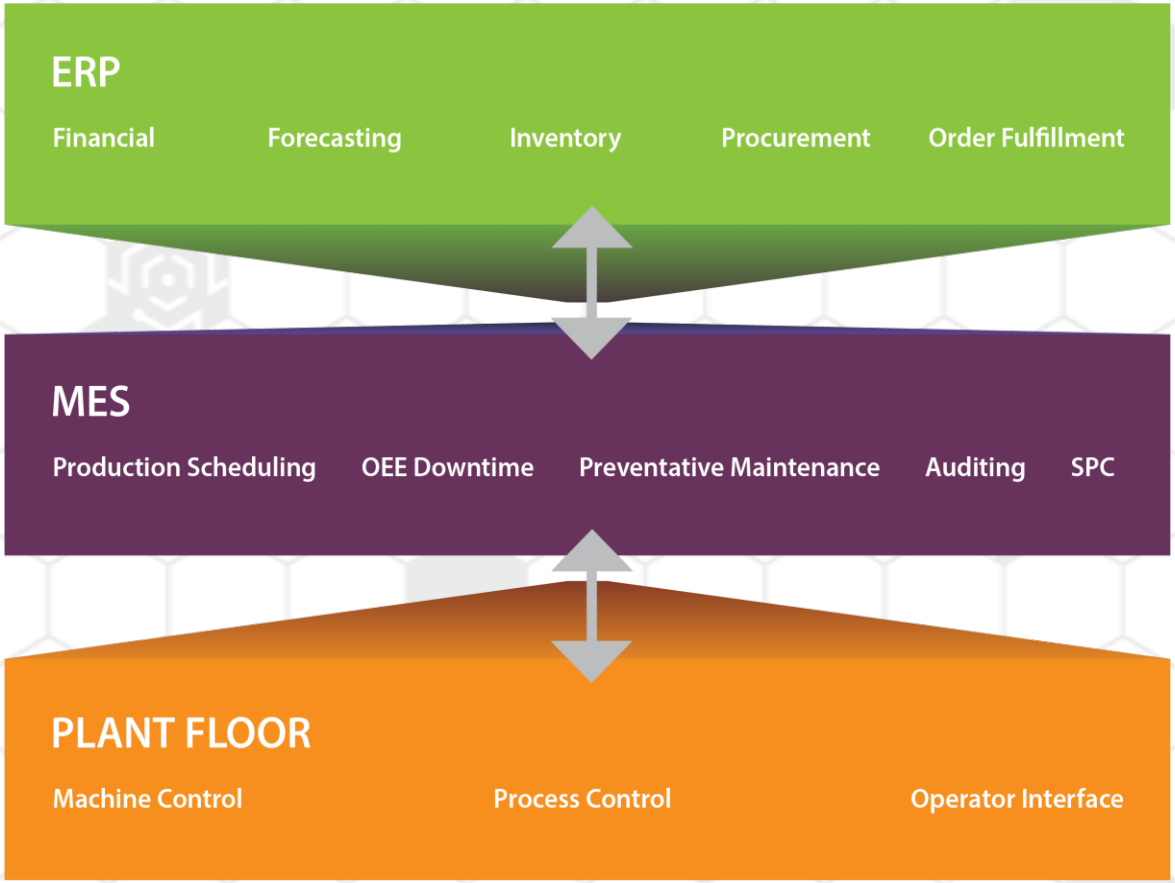
What is MES?

- Manufacturing Execution System

What MES is Not

- Not the plant floor control system
- Not the Enterprise Resource Planning (ERP) system

MES LAYER


ERP
Financial
Forecasting
Inventory
Procurement
Order Fulfillment
MES
Production Scheduling
OEE Downtime
Preventative Maintenance
Auditing
SPC
PLANT FLOOR
Machine Control
Process Control
Operator Interface

What MES Does

- Real-time monitoring & control
- Scheduling
- Tracking efficiency
- Quality
- Batch processing
- Preventative maintenance

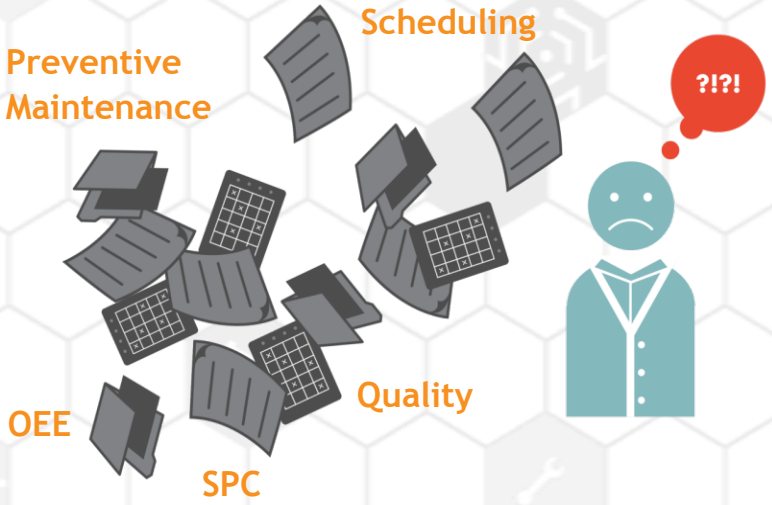
What ERP Does

- Order processing
- Product cost accounting
- Shipping
- Long-term scheduling & planning
- Marketing & sales
- Procurement

What is Your Company Doing Today?

- Do the QA and OEE systems integrate w/ SCADA system or track-and-trace?
- "What track-and-trace system?"
- Is traceability info on paper? How long does it take to zero in on issues?
- Are settings managed at local operator interfaces?
- Are spreadsheets involved in managing production schedules?
- Are scheduling between production & maintenance done verbally?
- And so on ... you get the idea

DATA CONFUSION



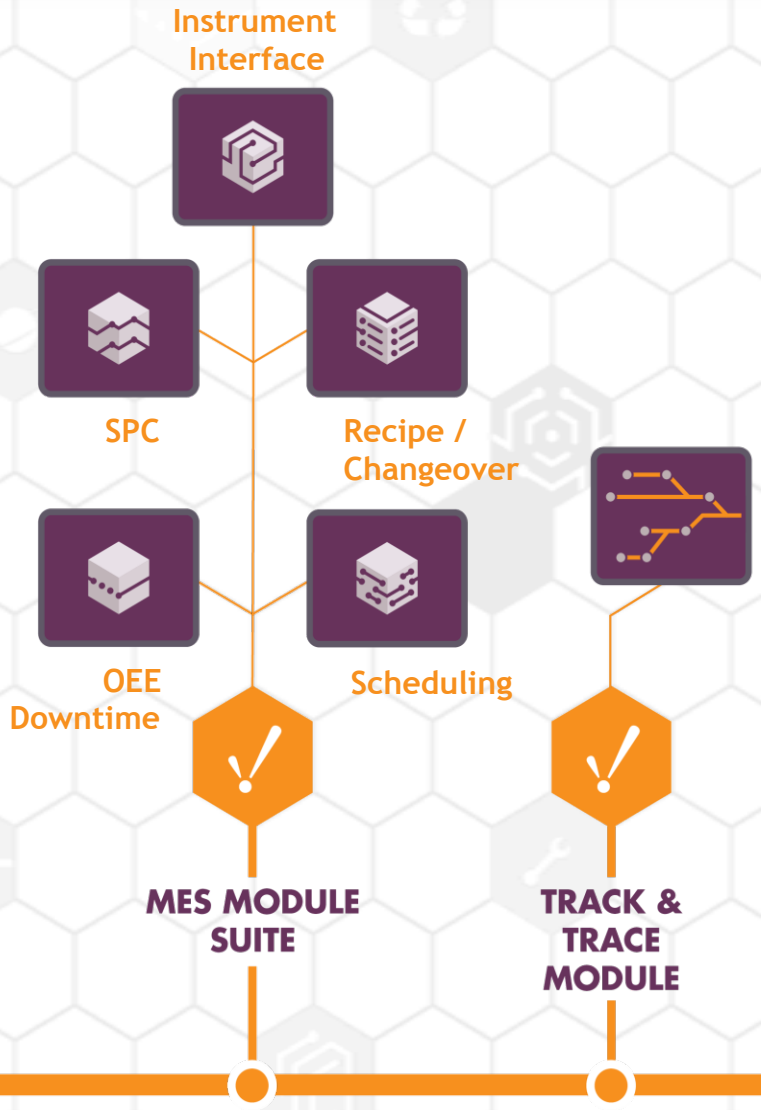
- All this data from different sources is confusing
- Systems that don't work together cause frustration
- The result is lost time and money
- **What's missing?**

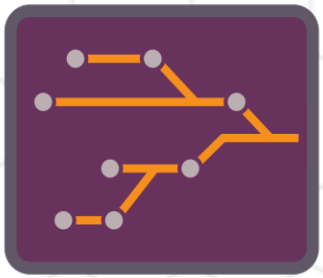
INTEGRATED MES SOLUTION

What if you had a system capable of:

- Being friendly w/ ERP systems
- Sharing production schedule w/ all dept's
- Reviewing numbers, info, various types of data in a unified system
- All w/o comparing paper reports
- Avoiding human mistakes by using WIP
- Standardizing across all sites & all dept's

MES ROADMAP


Instrument Interface
SPC
Recipe / Changeover
OEE Downtime
Scheduling
MES MODULE SUITE
TRACK & TRACE MODULE



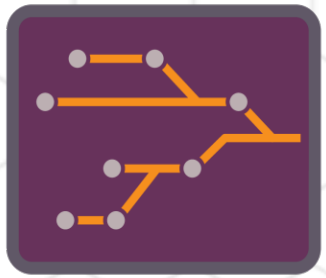
TRACK & TRACE

What the Module Does

Brings all this information together in one interface

- OEE
- SPC
- Recipe
- ERP

TRACK & TRACE MODULE

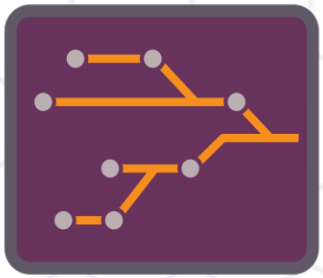


TRACK & TRACE

WIP = Work in Process

- Track & Trace and WIP normally separate packages
- WIP also tied in w/ Track & Trace Module.
- Track & Trace records where product is.
- WIP defined the routes needed to produce product.

TRACK & TRACE MODULE



TRACK & TRACE

Track & Trace Module will also have genealogy (birth certificate)

Tracks all data on the origins of the product

- Production line
- Quality test
- Raw material vendor
- And more…

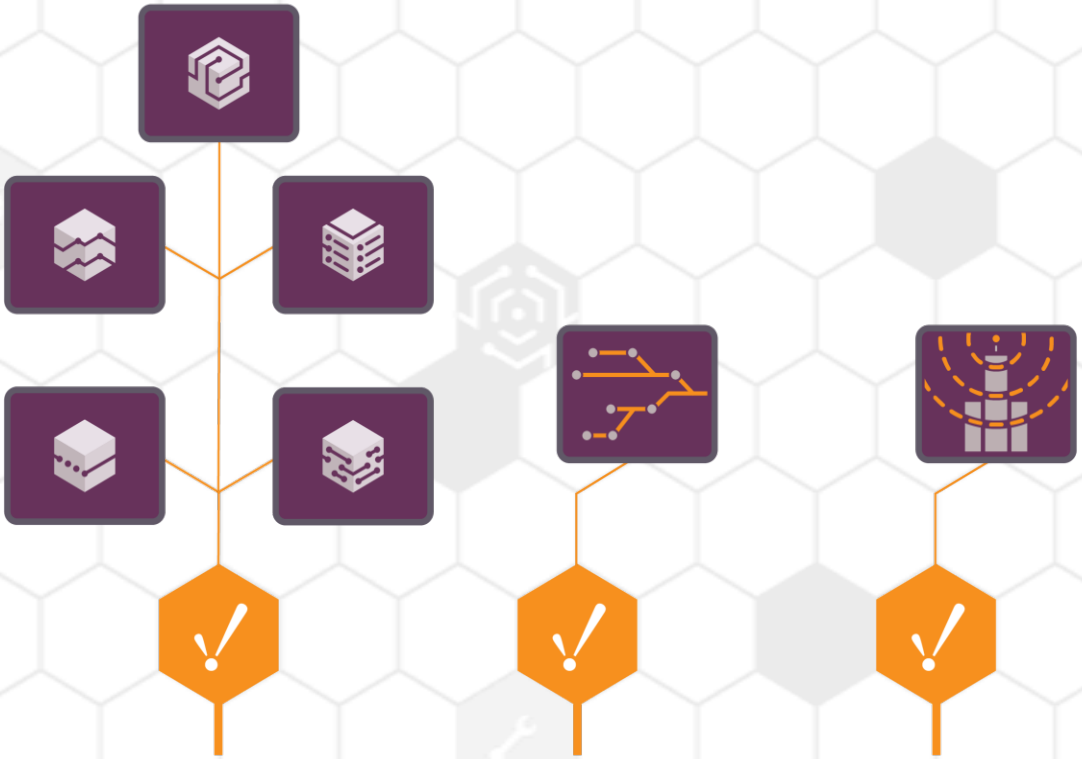
MES Track & Trace Module due in late 2013

Ignition! Demonstration

by inductive automation

Track & Trace Module

MES ROADMAP



MES MODULE SUITE

TRACK & TRACE MODULE

WEB SERVICES MODULE

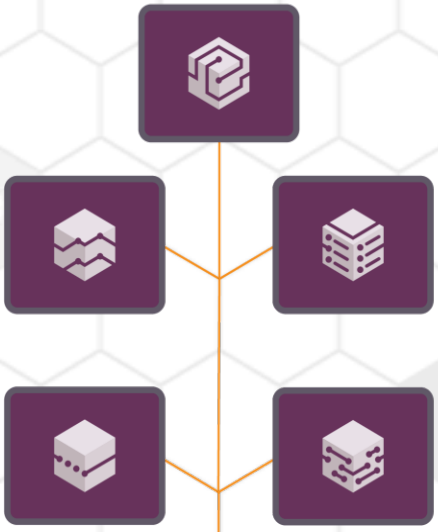
WEB SERVICES MODULE

WEB
SERVICES

What the Module Does

- Allows connection to systems providing web services, w/o scripting
- Allows reading & writing of data between Ignition and other web services
- Identifies & converts various data types for you
- Initiate a web service from SFCs, timed interval or script

MES ROADMAP



MES MODULE SUITE

TRACK & TRACE MODULE

WEB SERVICES MODULE

MES ENTERPRISE MODULE

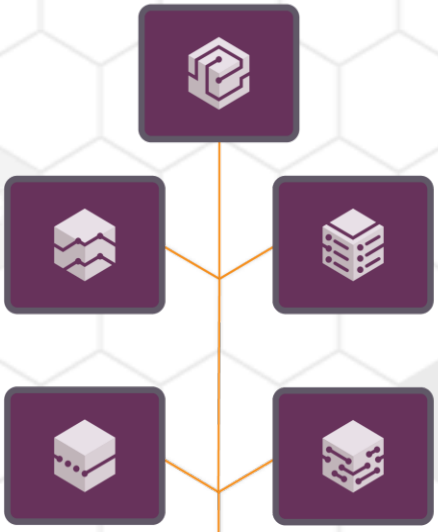
MES ENTERPRISE MODULE

MES
ENTERPRISE

What the Module Does

- Centrally configure multiple Ignition Gateways on an enterprise MES system; coordinating behind the scenes
- Changes auto-pushed to appropriate MES Remote Gateways
- Monitor your remote MES Ignition Gateways centrally
- Changes to schedules, product details, etc. auto-propagated to appropriate Ignition Gateway within MES Enterprise
- Finally - a true enterprise MES system

MES ROADMAP



MES MODULE SUITE

TRACK & TRACE MODULE

WEB SERVICES MODULE

MES ENTERPRISE MODULE

PREVENTIVE MAINTENANCE MODULE

PREVENTIVE MAINTENANCE MODULE

PREVENTIVE MAINTENANCE

What the Module Does

- Instead of maintenance schedule, it can set up anything in Ignition to trigger maintenance
- When triggered, maintenance tasks appear on schedule
- Will have inventories
- Will track info, like meantime between failures

MES ROADMAP OVERVIEW

CONCLUSION

Don Pearson

Chief Strategy Officer

FIREBRAND AWARDS

TODAY'S SCHEDULE

- 11:00 a.m.—Noon, 3 concurrent sessions
- Noon—1:30 p.m., catered lunch and networking time
- Blocks of concurrent sessions at:
  - 1:30—2:30 p.m.
  - 2:50—3:50 p.m.
  - 4:10—5:10 p.m.
- This evening, we'll have dinner and networking at The Palladio:
  - 5:00—6:15 p.m., shuttles to The Palladio, appetizers served
  - 6:15—7:30 p.m., BBQ dinner / networking time
  - 7:30—8:15 p.m., dessert and office tours

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