

ITU Workshop on the “Internet of Things - Trend and Challenges in Standardization”

(Geneva, Switzerland, 18 February 2014)

Making Money in the IoT Open Source – A Help or a Hindrance?

**Dr Tony Milbourn,
VP Strategy, u-blox AG
tony.milbourn@u-blox.com**

The Theme of this Presentation

The Internet of Things is **big** and important

However it is more complex, cluttered and confused than cellular telephony

u-blox is (just) a component supplier into IoT systems

We want to see rapid take-up and growth, but we don't control everything

SO

We are interested in standards and open technology as enablers

u-blox at a glance

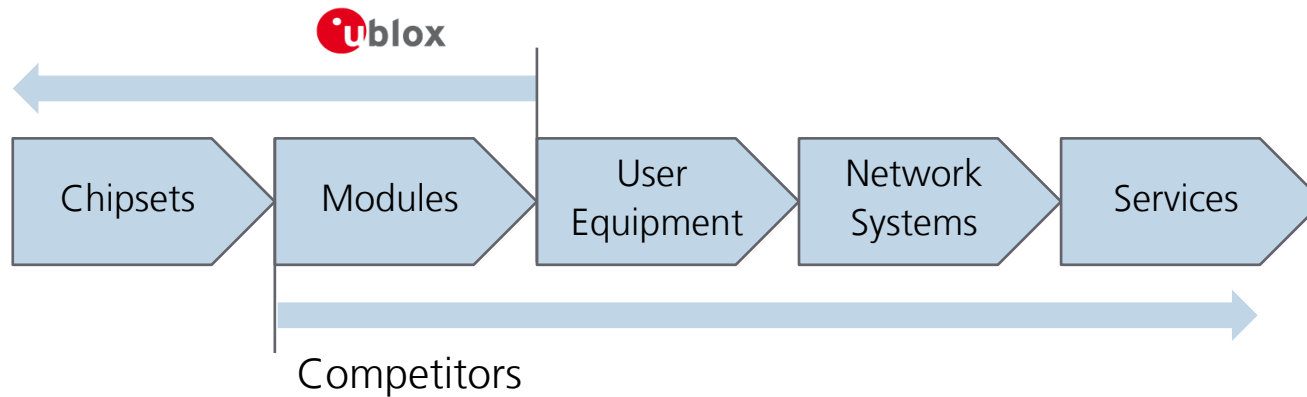
- **Swiss semiconductor company**
 - Founded in 1997
 - Listed on the SIX Swiss Exchange since 2007 (SIX:UBXN)
- **Core competencies**
 - Satellite based positioning technologies
 - Cellular wireless communications technologies
- **Product offering**
 - Integrated circuits - the foundation of our solutions
 - Modules - fully implemented, drop-in solutions
 - Services – delivering added value to our solutions
- **Market focus**
 - Consumer – mass market ICs and modules
 - Industrial – durable components for professional electronics
 - Automotive – robust, automotive grade products
- **Business model**
 - Fabless operation
 - Commercial, off-the-shelf products



Strategically Different

Control the Core Technology

Allow space for customers to add their value and differentiation

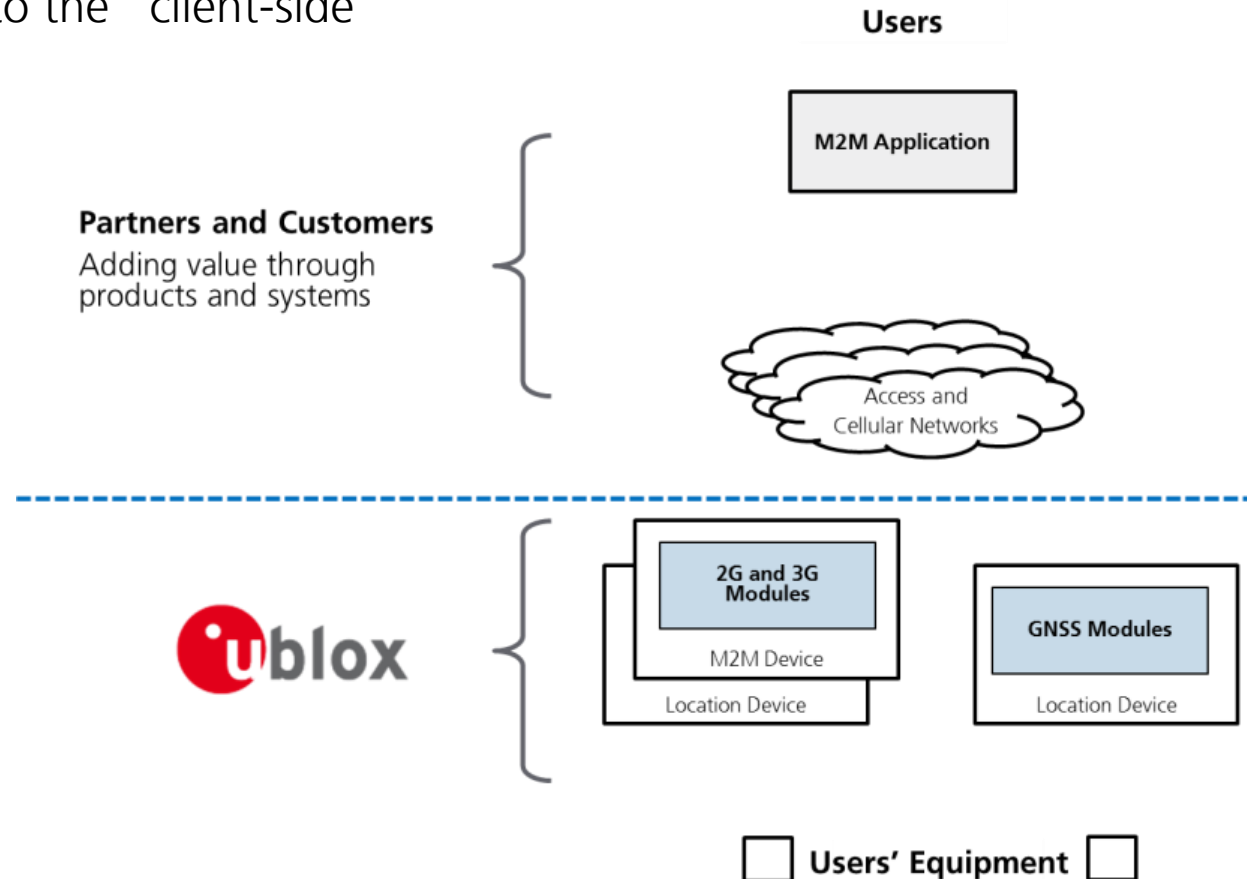


Access opportunities others can't reach without changing their silicon

Strategically Different

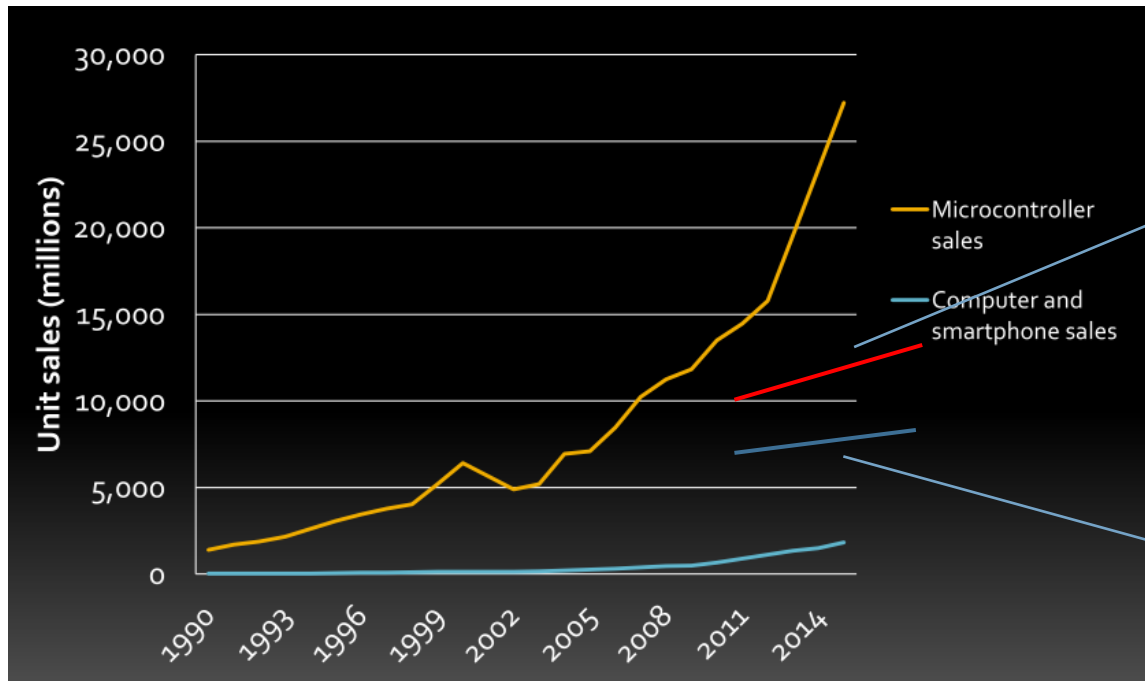
Control the Core Technology

- We have decided to supply **only** the components that go into the “client-side” of the system



Internet of Things

So it's a big market



Source: Thanki/ICSS 2013

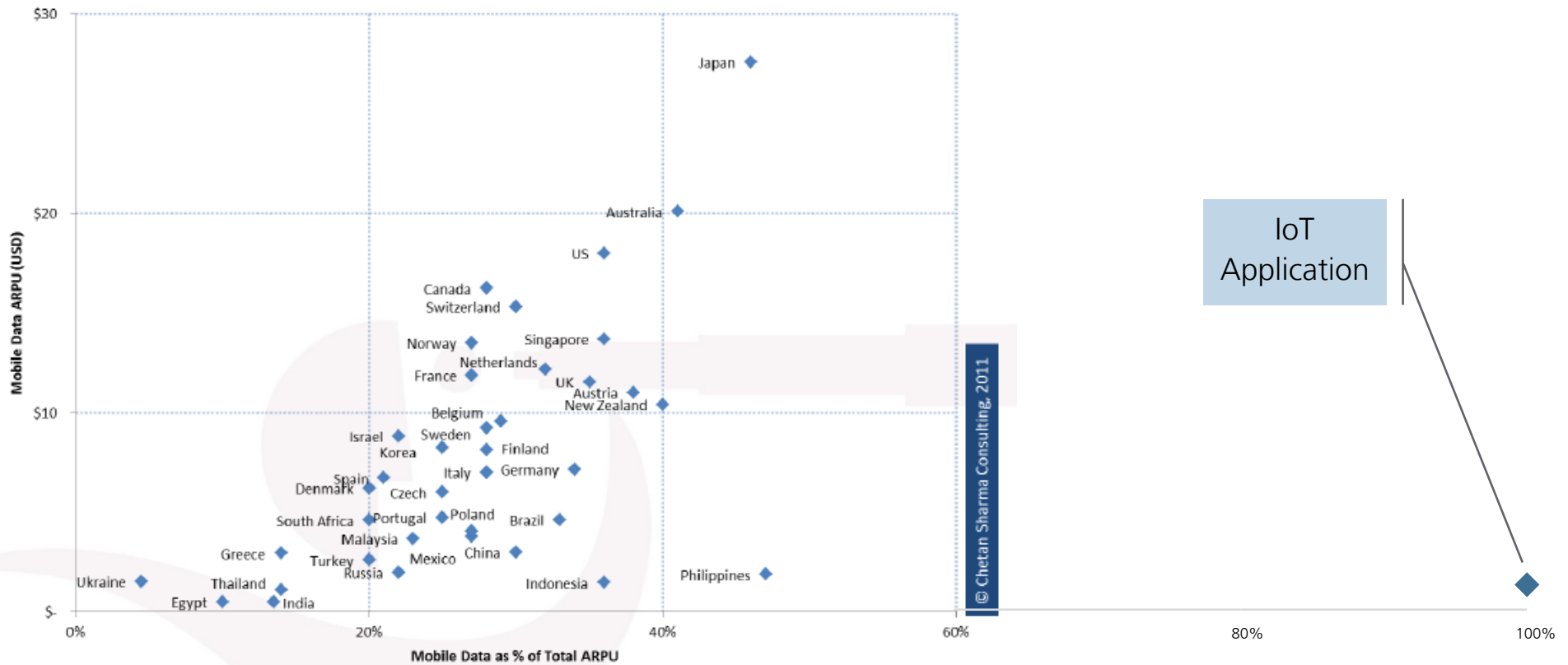
Electric Motors
9.8bn 2010
12bn 2018

Population
6.9bn 2010
7.7bn 2020

Internet of Things

..but it is a different market, especially for cellular operators

Mobile Data in Major Global Markets (2011)




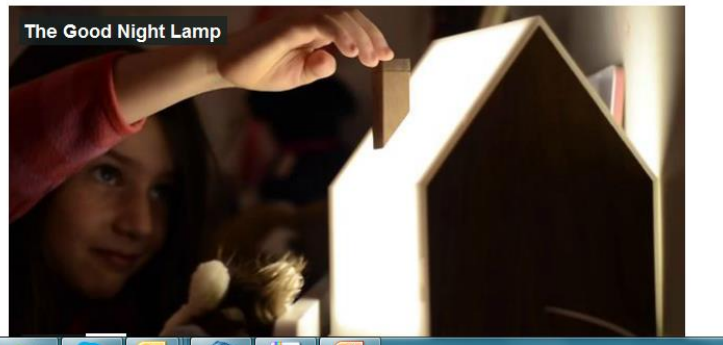
Volume needs Innovation

 Good Night Lamp Shop (in beta)

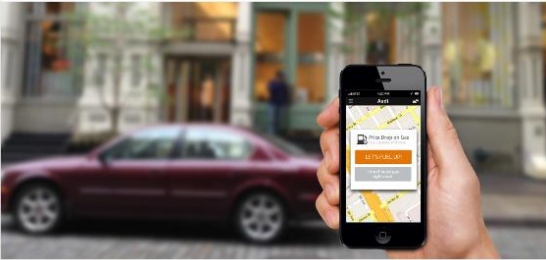
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OUR STORY




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Cosm is now Xively. [Read more](#)

xively PLATFORM SERVICES ECOSYSTEM DEVELOPER CENTER LOGIN [GET STARTED](#)

NEWS Xively Executive to be Featured Speaker at the Harvard Innovation Lab

The Internet of Things is Open for Business.

Build your connected product, here and now.

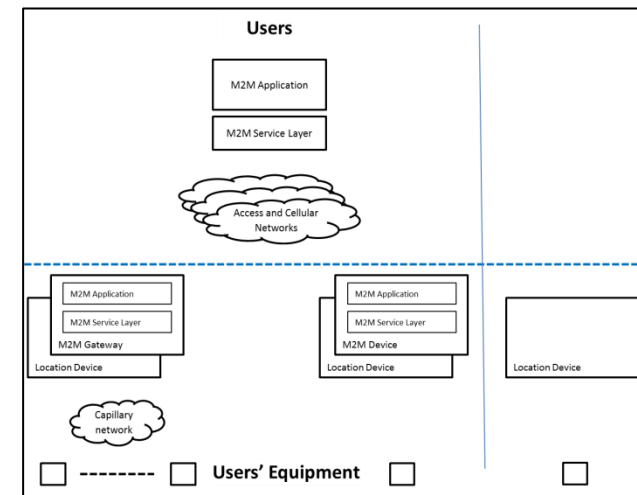


[GET STARTED >](#)

Four Important “Interfaces”

Places where we interact with others

- GNSS
 - Strongly standardised
 - GPS, Glonass, Galileo, Beidou
- Cellular
 - Strongly standardised
 - 2G, 3G, 4G, local variations and RF bands
- Short-Range Radio
 - Less strongly standardised
 - WiFi, Bluetooth, Zigbee, etc
- M2M Systems
 - Becoming standardised
 - OneM2M; OMA LWM2M; MQTT
 - De facto standards



Radio

“Just Software”

No Silver Bullet

Complexity of our own making

“At the heart of the argument is the distinction between accidental complexity and essential complexity.”

Accidental complexity relates to problems that we create on our own and which can be fixed; for example, the details of writing and optimizing assembly code or the delays caused by batch processing.

Essential complexity is caused by the problem to be solved, and nothing can remove it.”



“No Silver Bullet – Essence and Accidents of Software Engineering”, Fred Brooks, IEEE Computer, 1987

Four Big “Interfaces”

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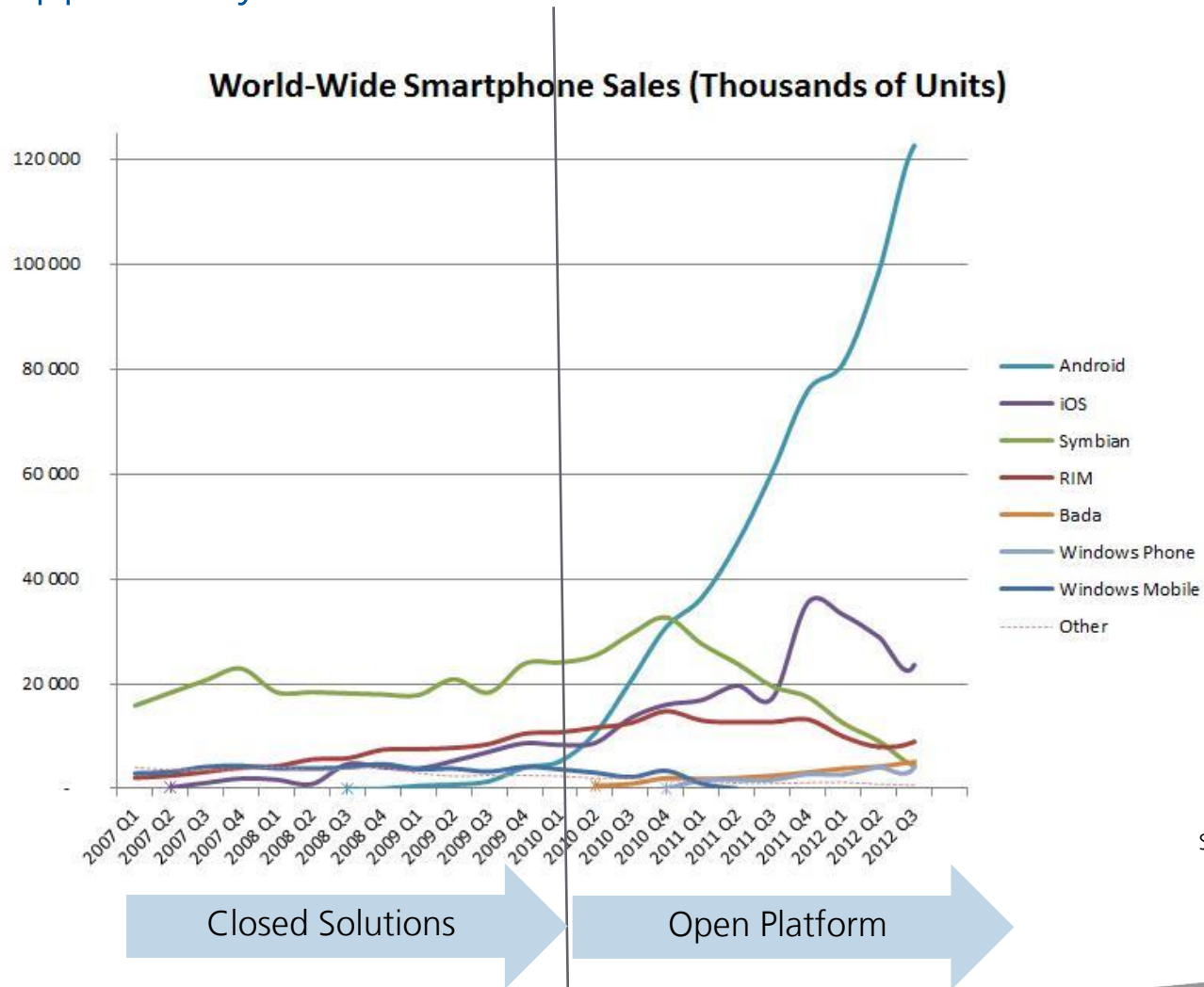
What is the role of standards and open source?

What does u-blox want to see?

- A clear and consistent set of standards: architecture, APIs, services
 - To allow us to concentrate on what we do well
- A benevolent dictator that ensure that things happen quickly
 - Because democracies take a long time and we can't wait
- Very low-cost hardware and software components
 - Because IoT is a numbers game: very large numbers of "end points" with very small revenue per end point

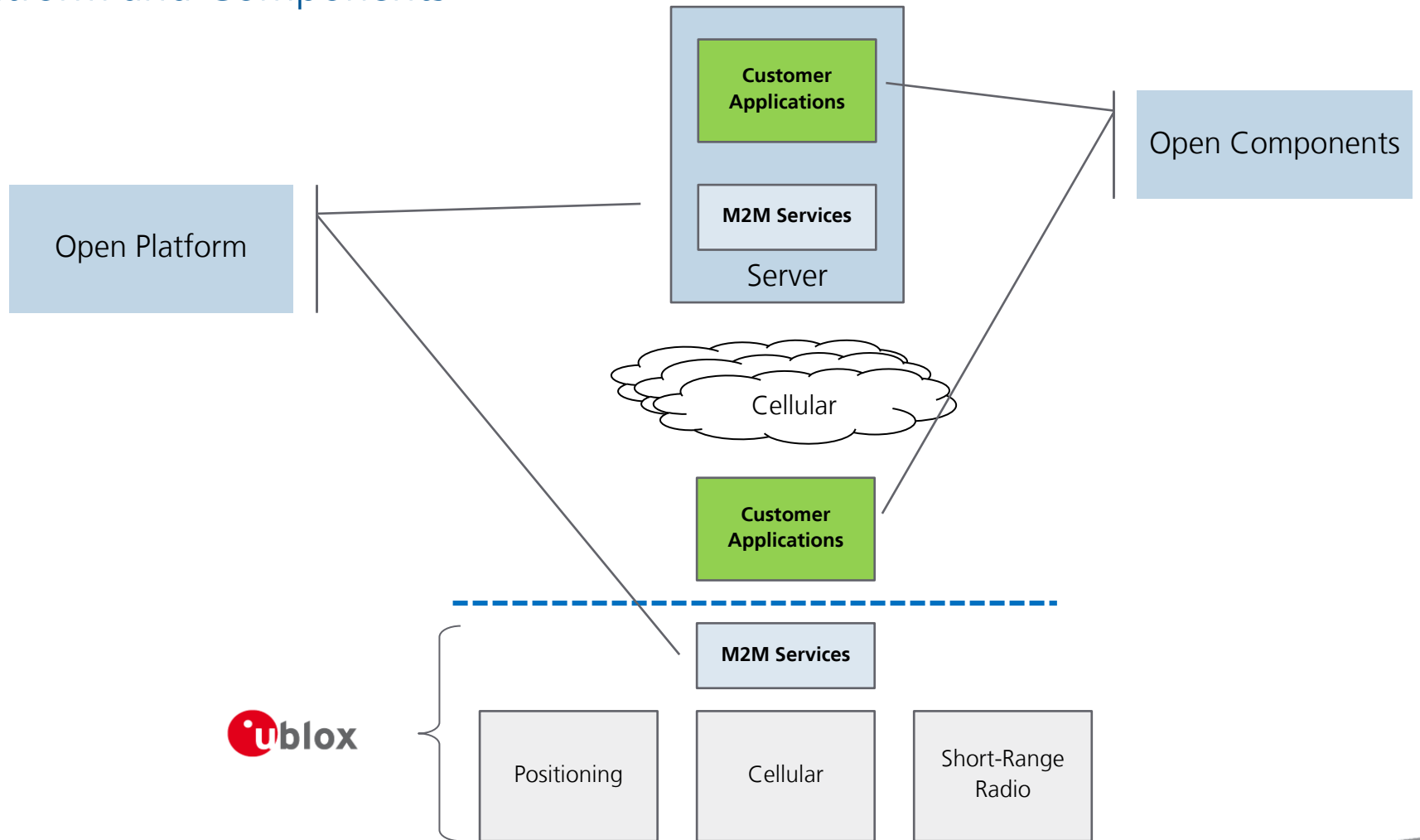
The Benevolent Dictator

Building the Opportunity



M2M Systems

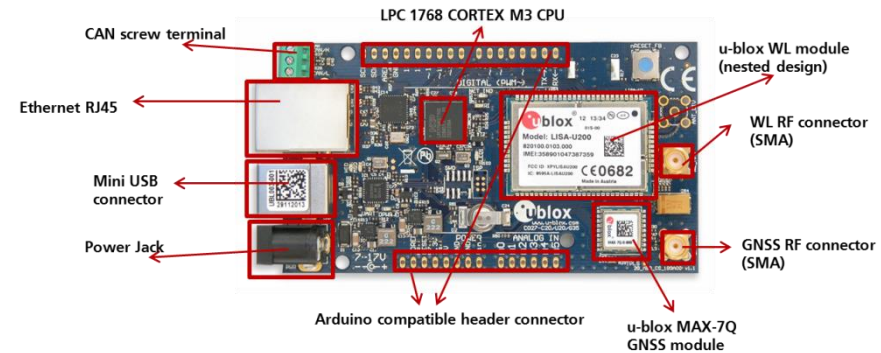
Open Platform and Components



So what is u-blox actually doing?

Promoting a “bread-on-the-water” program with ARM mbed

<http://www.u-blox.com/c027-internet-of-things-starter-kit.html>



Piloting OMA LW M2M



Piloting ETSI M2M/OneM2M



Supporting ad hoc vertical systems where appropriate



Conclusion

- What we would like to see is the rapid agreement and acceptance of ONE platform/standard that allows us to play our role in IoT and cooperate painlessly with others
- IF OPEN Source promotes the creation and proliferation of an OPEN Platform solutions for machine-type communications and the Internet of Things, then great
- We are (in danger of) inhibiting the growth of this fantastic opportunity by introducing accidental complexity

locate, communicate, accelerate

Thank you

tony.milbourn@u-blox.com

