

REVOLUTIONISING EMBEDDED COMPUTING

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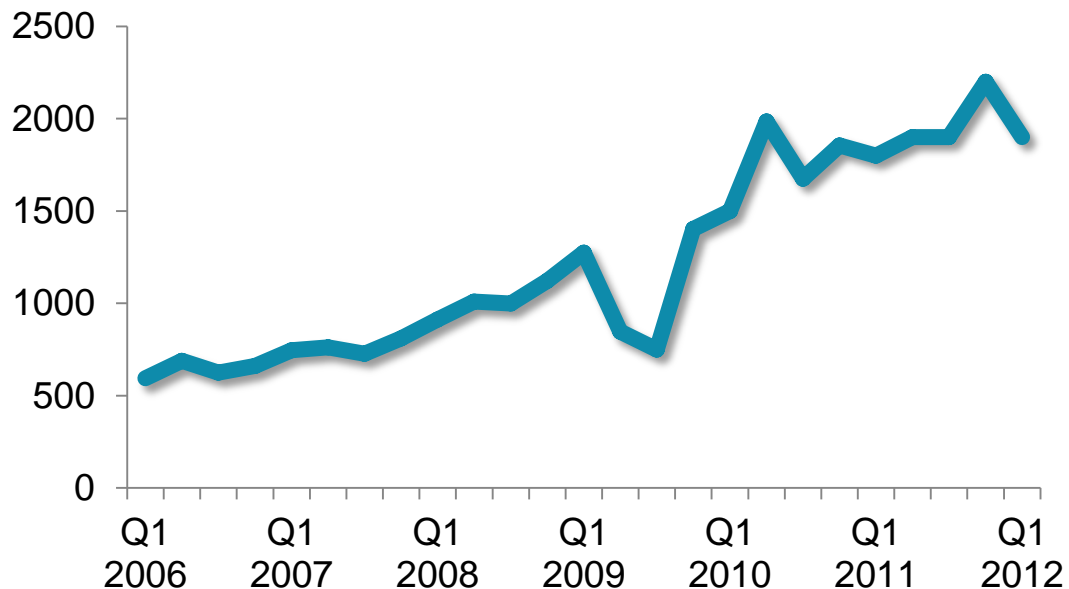


ARM[®]



ARM® Partnership Momentum

Millions of units shipped per quarter



2002

1 Billion

2010

25+ Billion

2020

150 Billion

#1 Architecture by volume

Over 4 Billion people connected
via mobile phones

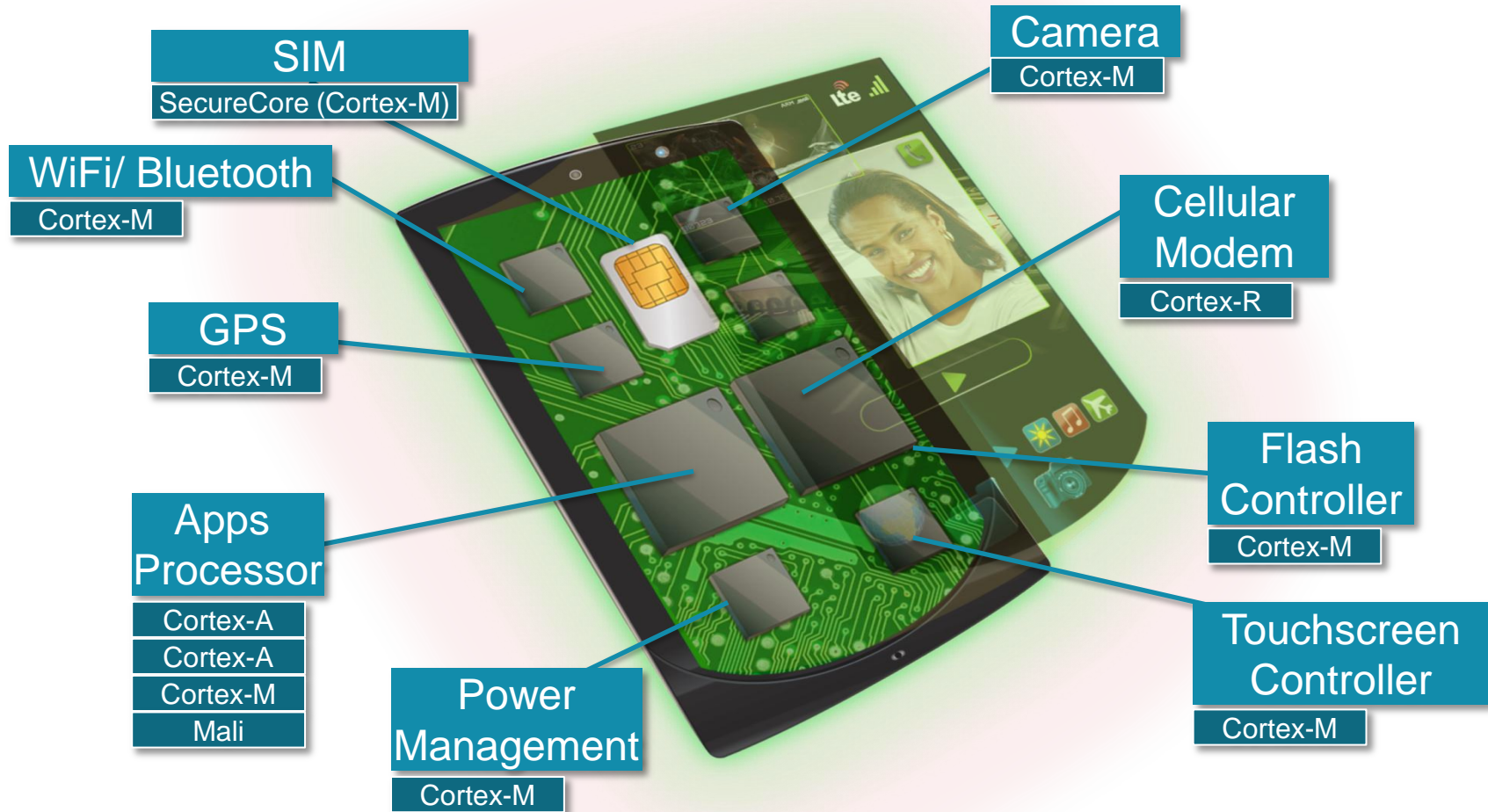
Smartphones will
leapfrog over the PC
in the developing
world

Smartphone data
traffic will exceed PC
traffic in 2014

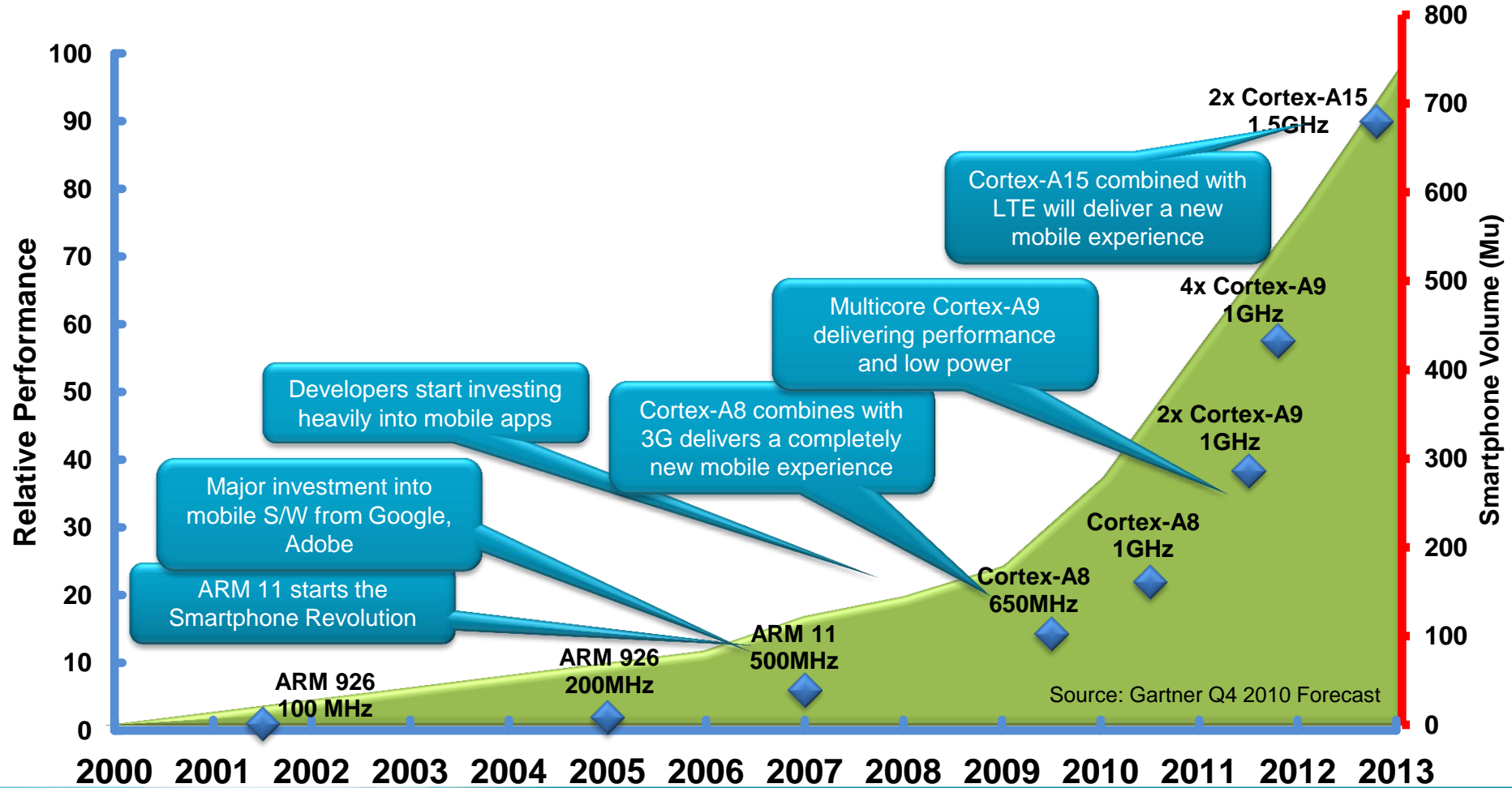
Over 95% of all
mobile phones have
an ARM core

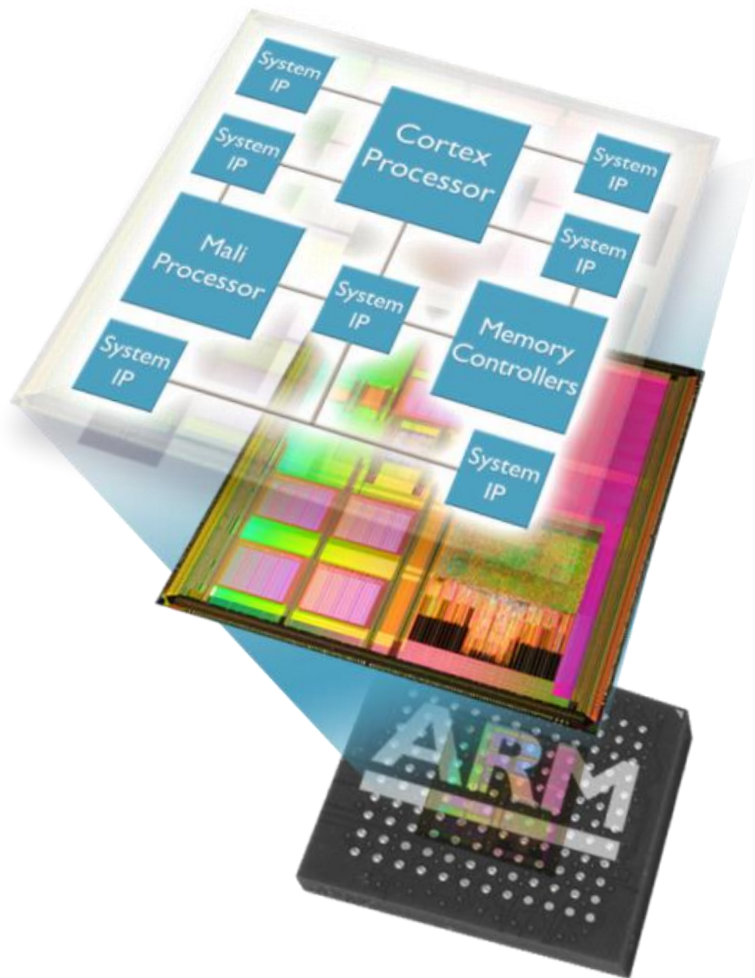
BIG NUMBERS!

Total system efficiency



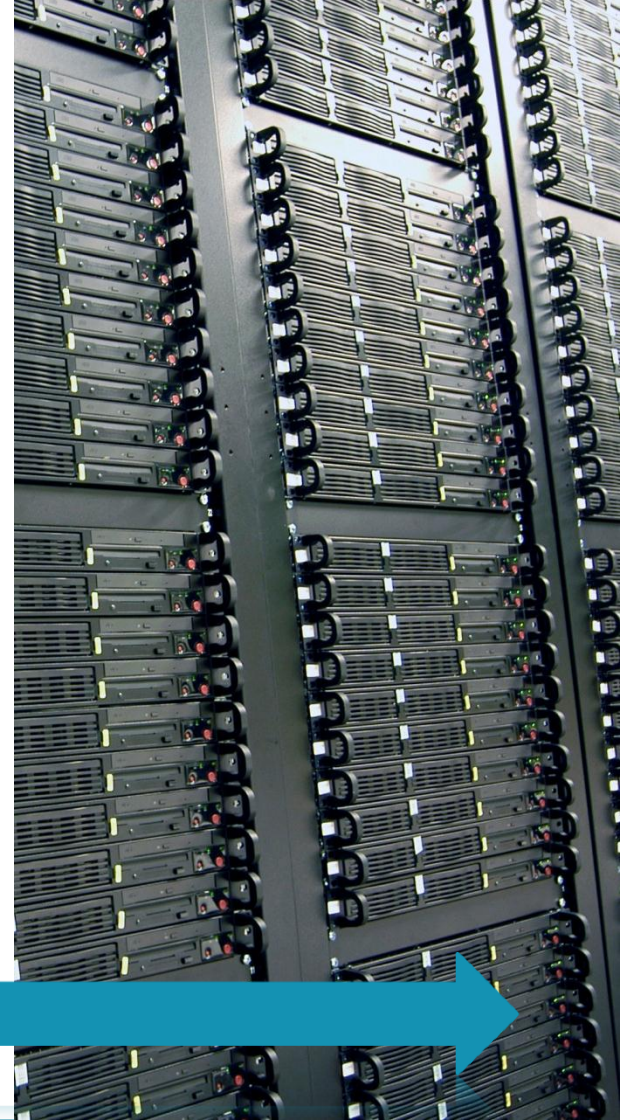
Smartphone Innovation Accelerating With ARM





NVIDIA.





SCALE



THE AVERAGE ANNUAL RUN RATE OF IP TRAFFIC BY THE END OF 2015

Annual Global IP Traffic

966 Exabytes

2015

Monthly Traffic

80.5 Exabytes =



AVERAGE GLOBAL INTERNET TRAFFIC PER MONTH

1 zettabyte

15 billion



2020

3 Billion

GLOBAL INTERNET USERS

14.6 Billion

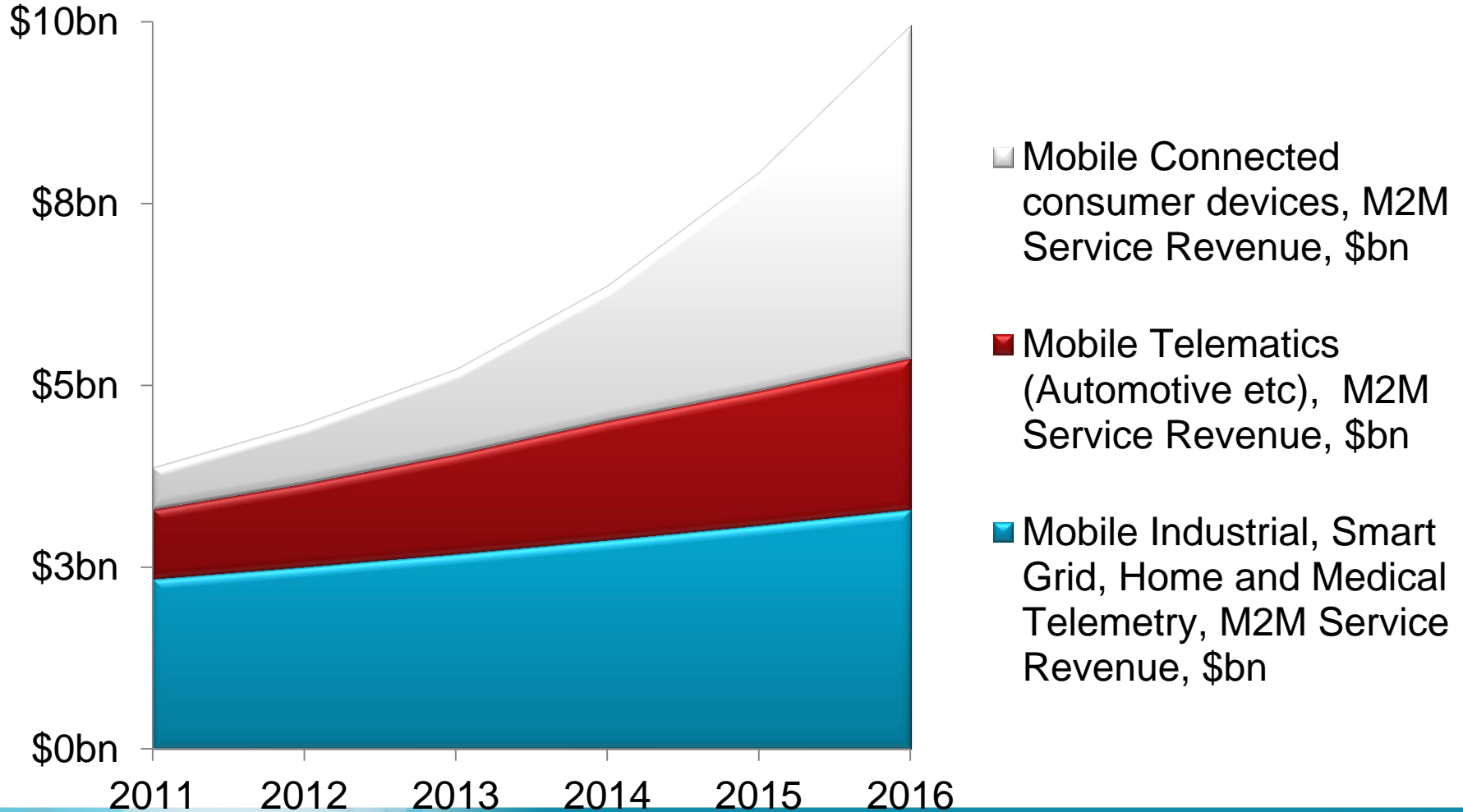
GLOBAL NETWORK CONNECTIONS

50 billion



DEC 2015

Areas for Growth



A Revolution in Embedded Computing

“**Kontron** makes a strategic entry into ARM architecture addressing customer needs in power consumption, performance per watt”

“**Congatec** presents first quad-core ARM module on Qseven form factor”



ULP-COM on ARM

COM market expected to grow to approximately \$883m by 2015 - VDC Research

Energy efficiency

- Performance per watt
- Simpler power electronics
- Reduced heat
- Battery powered
- Lower running costs
- 5V vs 12V supply



System implications – an example

	Intel® Atom™ Panel PC	ARM Cortex™-A8 Panel PC
Voltage	12V	5V
Power	25W	→ 13W
Depth	40mm	→ 20mm
Weight	800g	→ 517g



Heat

- Fans: noise and maintenance
 - Heatsinks: weight and bulk
 - Increased cost, larger form factor
-
- Reduce heat, reduce cost
 - BOM, transport and installation
 - Broader application space



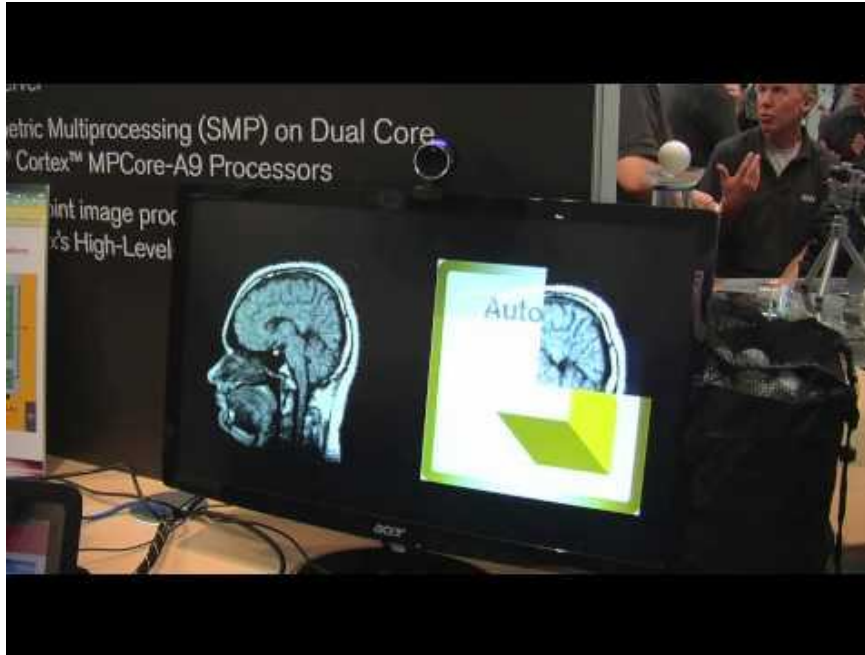
Avoid that sinking feeling

Medical example

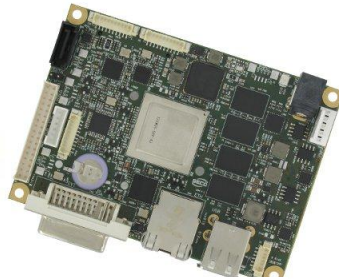
- Patient infotainment system
- Lower cost of deployment
- Improved customer experience

Silicon choice

- **Embedded computing spans diverse applications**
 - Peripherals to meet application needs
 - Competition and constant innovation



Board Choice



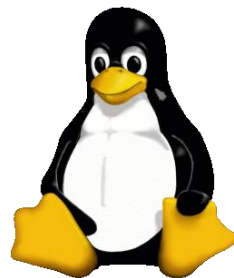
Common Benefit – Cost Reduction



- **Reduced power**
 - Reduced operating expense
 - Lower cost of heat sink, fan, enclosure, power electronics
- **Choice**
 - Competitive end products, maximum ROI
 - Niche applications

Software ecosystem

- **Consumer interface expectations in embedded**
 - Trend to lower cost faster development cycles
 - Touch screen support.



Software ecosystem future?

HTML





MEDICATION REMINDER

take one
LOPRESOR
tablet

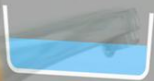


hold bottle
here to
confirm when
dosage has
been taken

ORDER

DOCTOR

6:52am



on / off



1:23pm

Facial recognition + secure ID verified: Anne Dickens

Consultant: Dr Parsee



D.O.B: 18.03.57
Height: 1.67m
Weight: 72kg

Cervical spine range of motion:
Flexion 40/60 with moderate
discomfort on the left.
Extension 40/60 with moderate
discomfort on the left.
Right lateral bending 40/45 with
moderate discomfort on the left.
Left lateral bending 40/45 with
moderate discomfort on the right.
Right rotation 70/80 with moderate
pain in the left.
Left rotation 70/80 with moderate
pain in the left.

Medical history



Orthopedic Tests: Axial
compression negative with
moderate pain laterally.
Shoulder distraction negative
with moderate pain laterally.
Maigne's test negative.
Wassery's test normal and
swallow test normal. Heel walk
normal. Toe walk normal. Sit
Sitting rest normal. Sit
normal. Patrick Faber's
normal. Bas. compression
caused moderate pain in the
left.

The patient presents today with neck and low
back pain since an accident on January 19, 2004. The patient was
he was hit behind by a vehicle traveling about
rotated to the right and he stated he saw the car
appropriately. The impact caused his head to be
of his hat. He was not rendered unconscious but
He did not receive medical attention at the scene
today.

RADIOLOGY FINDINGS: X-rays of the cervical and

DIAGNOSES:

1. Cervical spine sprain/strain.
2. Lumbar spine sprain/strain.
3. Tension headaches.

CAUSATION: The patient's symptoms at
the motor vehicle accident consistent with
history, subjective, and objective findings
report that his condition is due to the
factors are present from preexisting condi-
impairment at this time.

PROGNOSIS: The likelihood of nearly com-
plete recovery is excellent. The patient should reach
three or four months.

TREATMENT PLAN: After completing an
status and minimize the possibility of future
chiropractic manipulation, chiropractic pro-
cessing frequency as the patient's
determine whether this patient will have

Current case 12



Silicon Partners



Design Support Partners



Software, Training and Consortia Partners



95+

MOBILE
INNOVATION

INTERNET OF
THINGS

IMPACTING
TRENDS

