

DIGITAL ASIC @ ERICSSON

- Igor Tasevski, Head of HW Design Lund



September 29th 2015

AGENDA

› Introduction

- Me
- This is Ericsson

› Digital ASIC Development

- Ericsson Lund
- Design Flow
- Systemization and Design
- Verification
- Challenges

› Q&A



IGOR TASEVSKI

› Education

- M.SC in Electrical Engineering, major in Telecom
- Several courses within leadership, economics and this one!

› Current Assignment

- Head of HW Design Lund

› Ericsson Experience

- Section Manager, Digital ASIC Implementation
- Section Manager, Digital ASIC System Verification
- Department Manager, Use Case Validation
- Technical Manager, Multimedia validation
- Team Leader, Streaming Services
- SW Development Engineer, Streaming & Video Telephony





ERICSSON

THIS IS
ERICSSON





NETWORKED SOCIETY

A connected world is just the beginning



OUR VISION



““ A Networked Society
where every person
and every industry
is empowered to reach
their full potential””





2014 AT A GLANCE



#1

MOBILE INFRASTRUCTURE
 OPERATIONS & BUSINESS
 SUPPORT SOLUTIONS
 TELECOM SERVICES
 TV PLATFORMS

37,000

Patents

25,700

R&D
Employees

36 B. SEK

In R&D

1 BILLION

Subscribers
managed by us

2.5 BILLION

Subscribers
supported by us

65,000

Services
professionals

228 B. SEK

Net Sales
2014

180

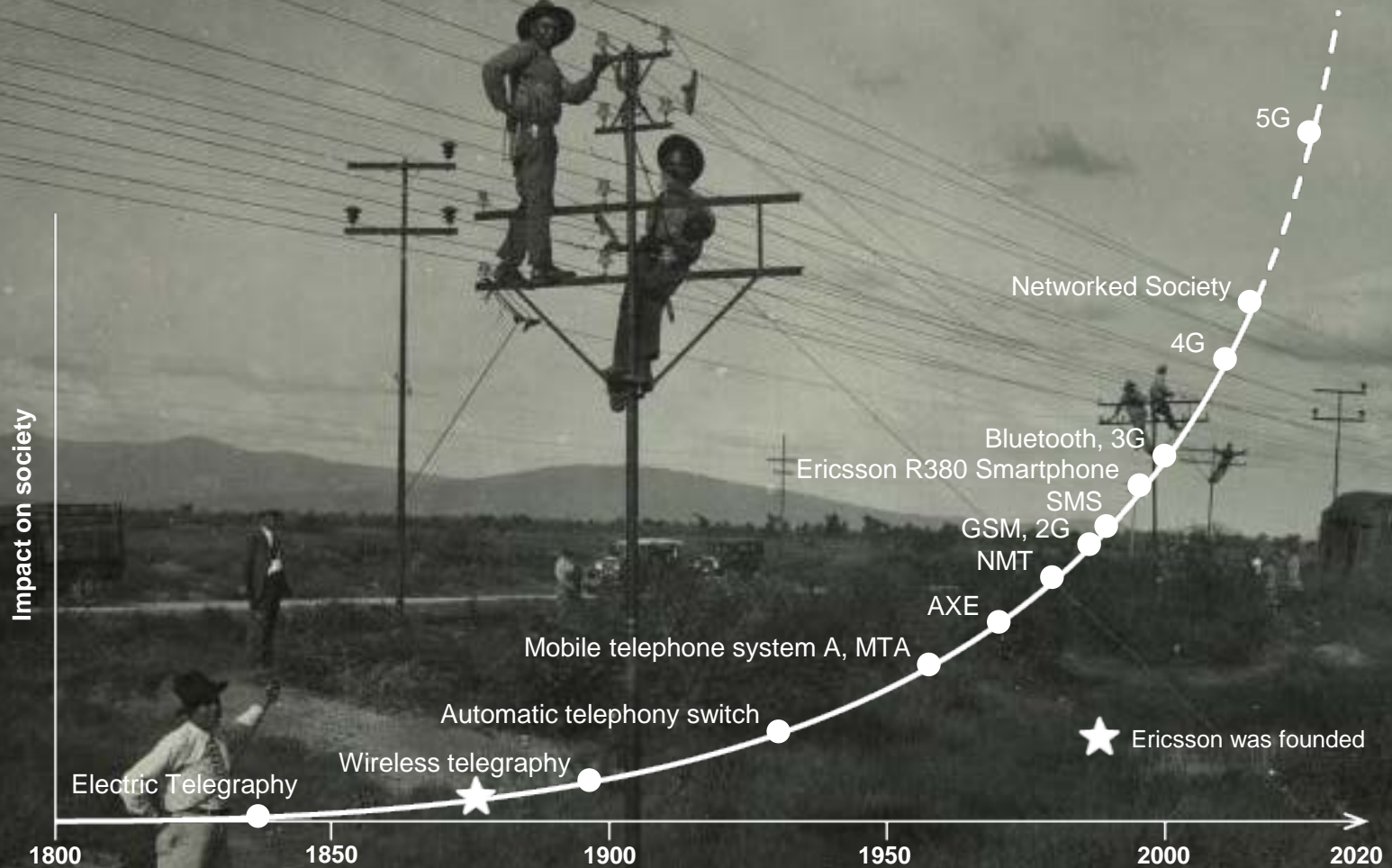
Countries with
customers

118,000

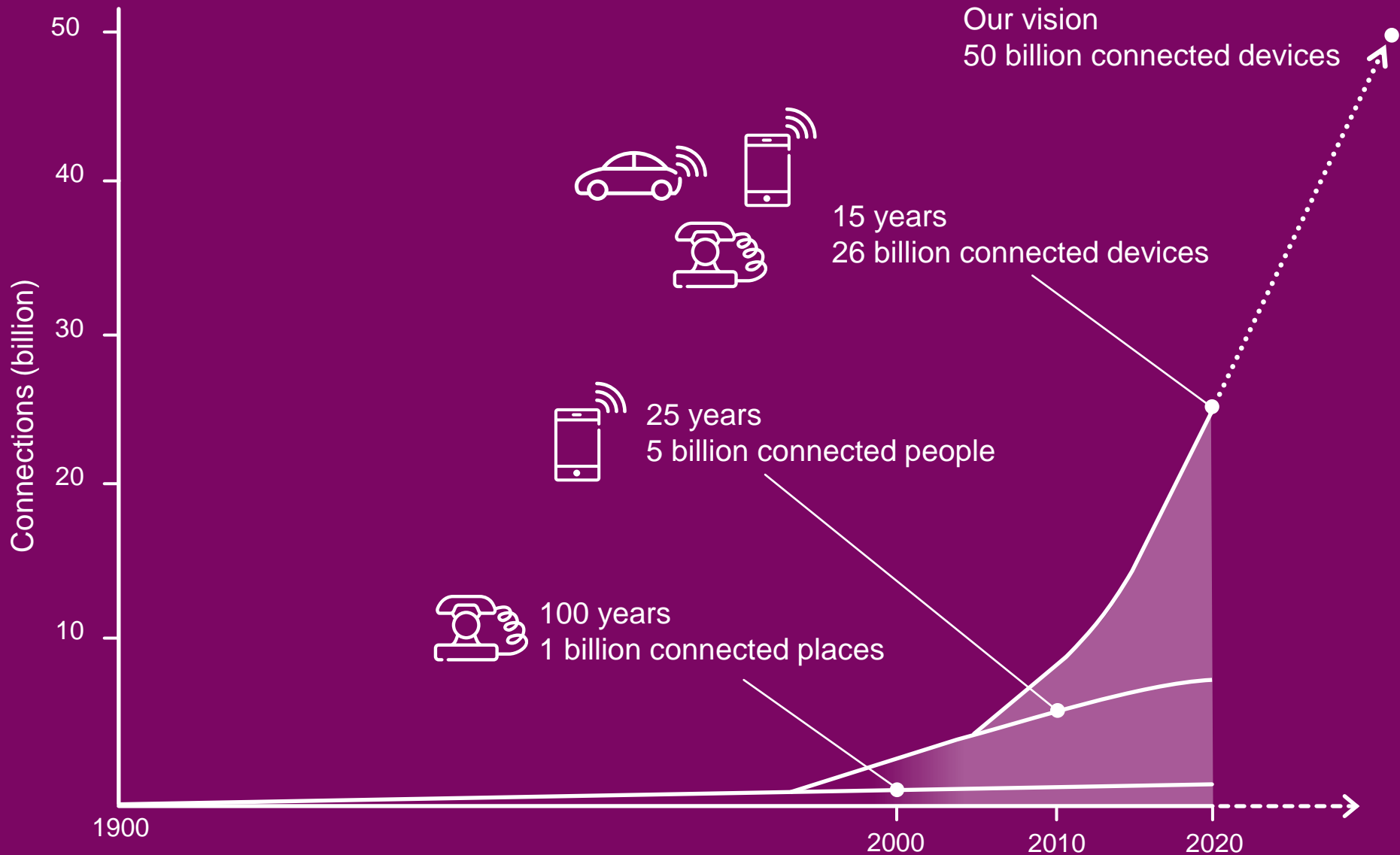
Employees

'COMMUNICATION IS A BASIC HUMAN NEED'

ericssonhistory.com



PACE OF CHANGE





CUSTOMER



TELECOM OPERATORS

UTILITIES

PUBLIC
SAFETY

TRANSPORT

TV & MEDIA

A TALENTED WORKFORCE



118,000 employees



44%

of our employees are
under the age of 35



187

languages are spoken
by our employees



25K

of our employees are
dedicated to R&D

A GLOBAL TEAM IN 145 COUNTRIES



x1,000 employees

4 BUSINESS UNITS TO BEST REFLECT OUR BUSINESS



CEO
Hans Vestberg

GROUP FUNCTIONS

Sustainability and
Corporate Responsibility

RESEARCH



Business Unit
Radio



Business Unit
Cloud & IP

SEGMENT
NETWORKS



Business Unit Support Solutions



Business unit Global Services

Go to market

REGIONS

Engagement
Practices

Operations &
Competence
Center

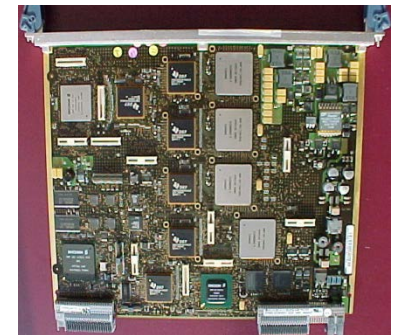
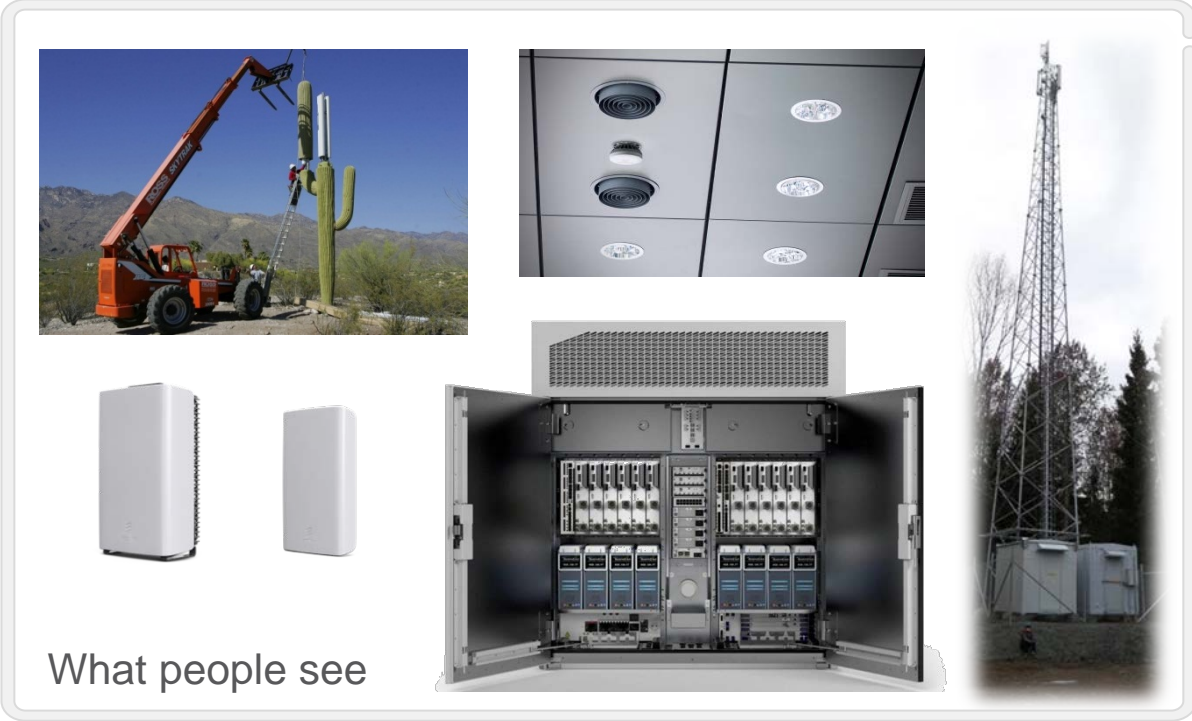
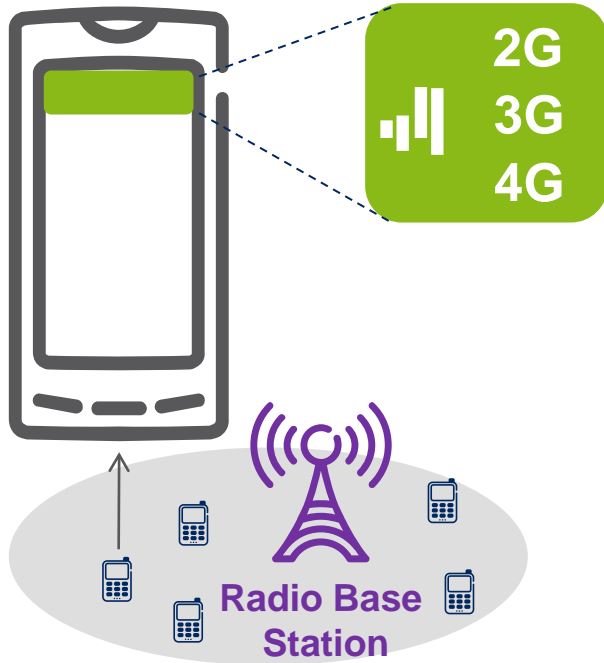
CUSTOMER
UNITS



CUSTOMERS

IPR & LICENSING

ERICSSON RADIO SYSTEMS



DIGITAL ASIC DEVELOPMENT



ERICSSON LUND

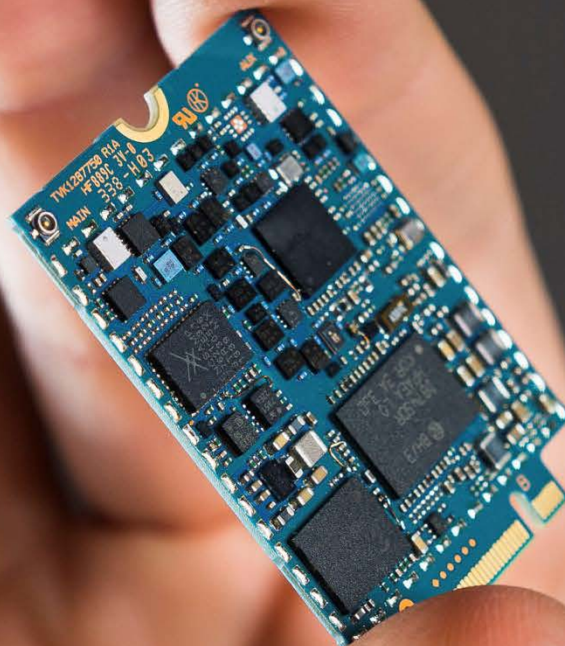
30 YEARS EXPERIENCE IN DEVICES



NMT, GSM,
D-AMPS, PDC

3G devices from Sony, Samsung,
Sharp, Blackberry, ...

Galaxy Note 4



COMPETENCES



**Integrated Multi-RAT
E2E services**

Ways of Working

- Continuous integration
- Agile

Integration

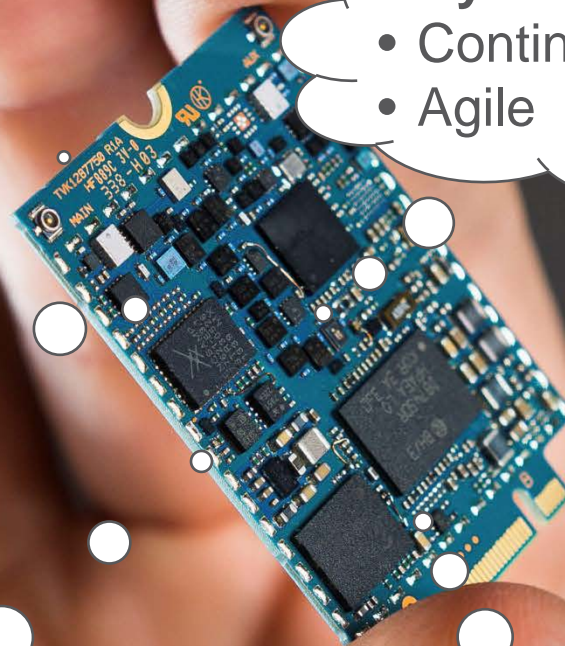
- Single RF IC, >17 bands
- Single Digital IC, all RATs
- Multicore ARM/DSP
- Linux

Energy Efficiency

- Processing and data flows
- 150/50 Mbps at less than 1W
- Idle at few mW

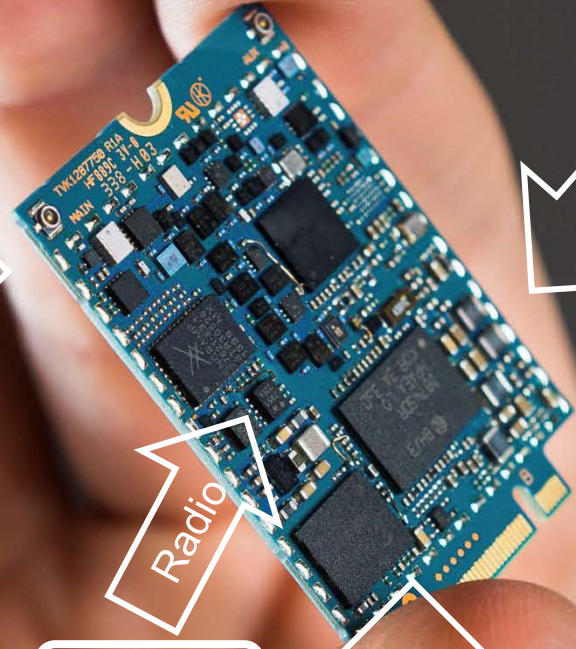
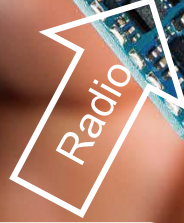
Customer Interaction

- Daily deliveries
- Fast response rate

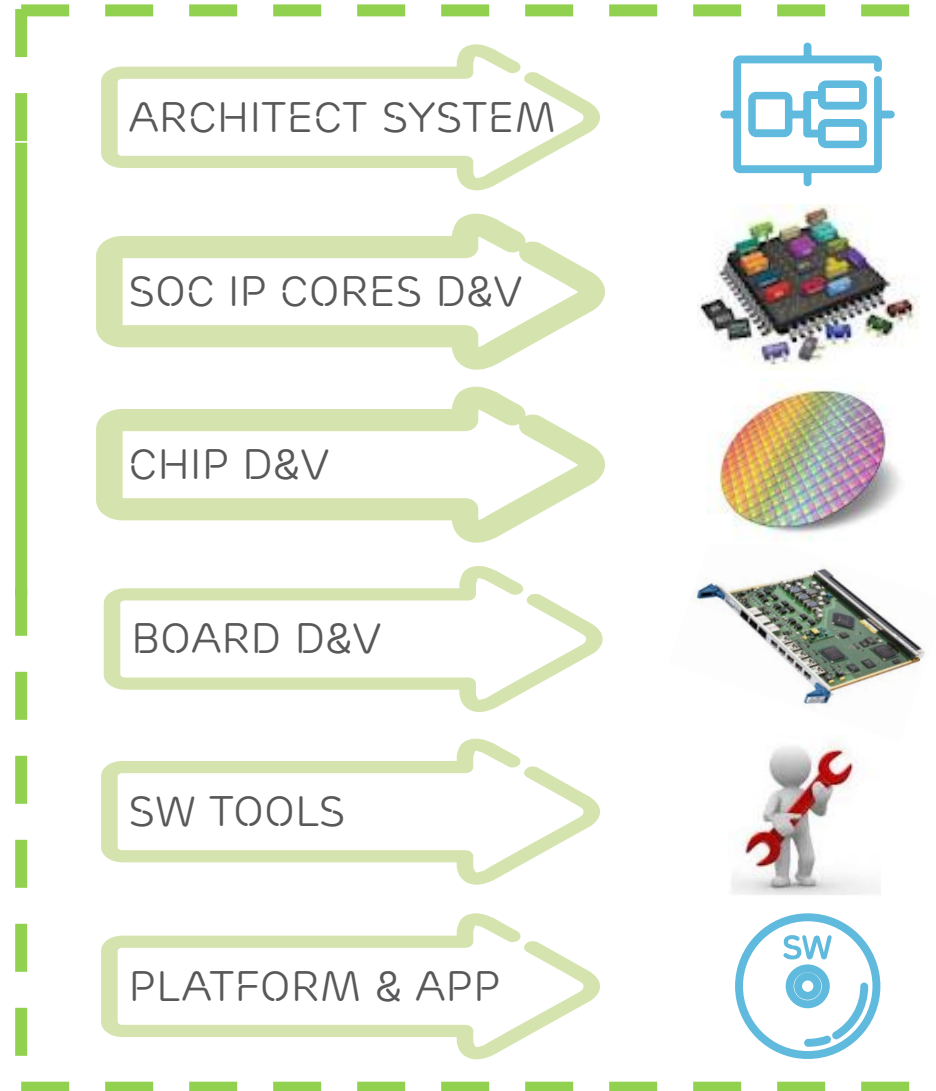




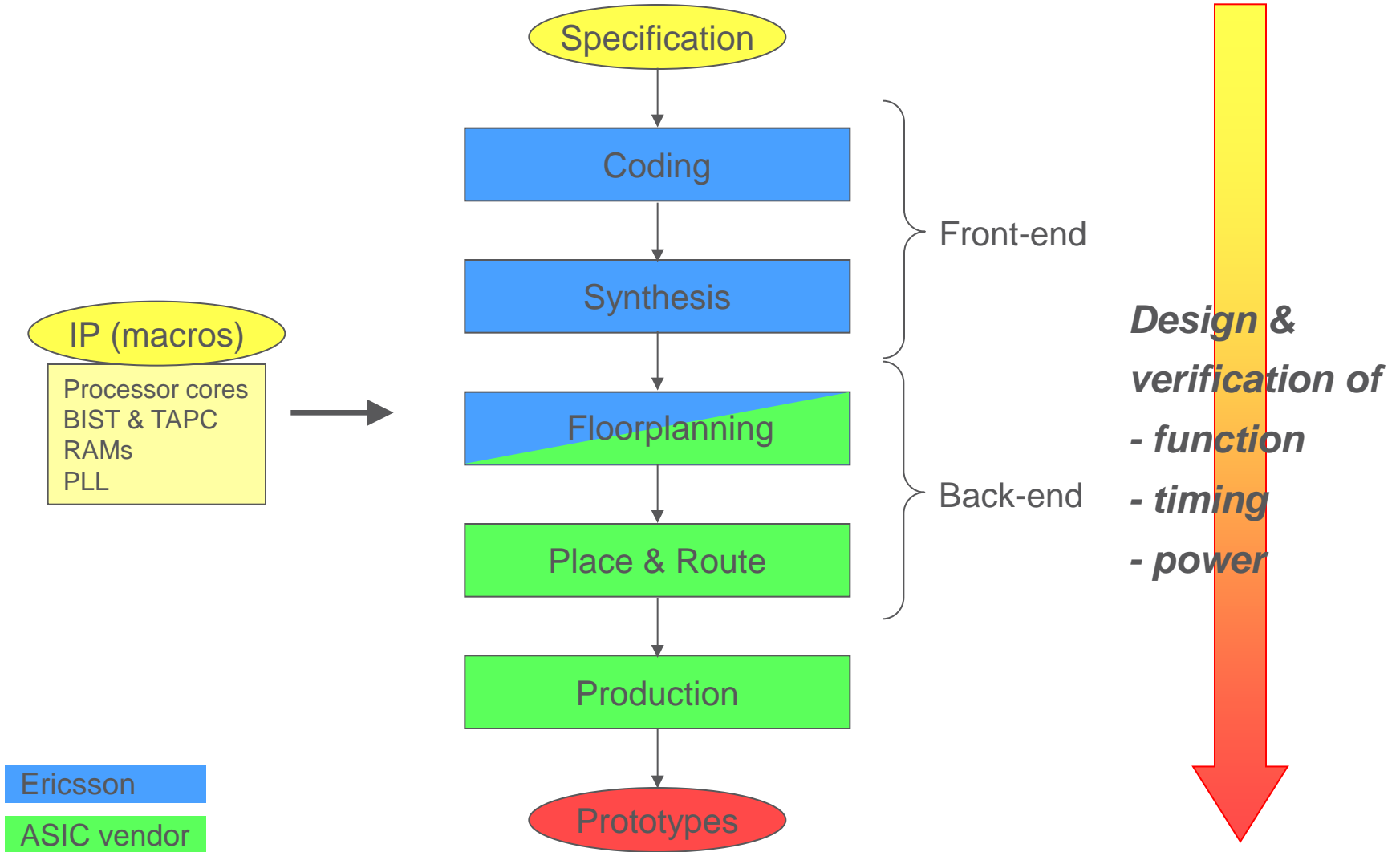
DESIGN FLOW



SYSTEM DESIGN PROCESS



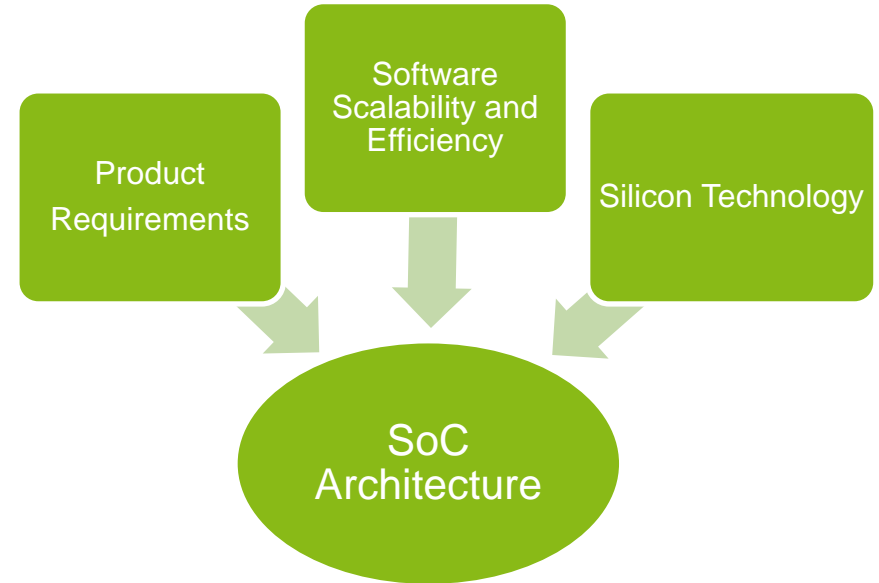
TYPICAL ASIC DESIGN FLOW



KEY DRIVERS



- › Products
 - Scalability from low capacity to large
 - Cost and power
- › Software scalability and programming efficiency
 - Ease of programming
- › Silicon Technology
 - The physics to get performance and efficiency
- › SoC architecture
 - A many-core architecture **evolving** since late 90'



Q&A

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