

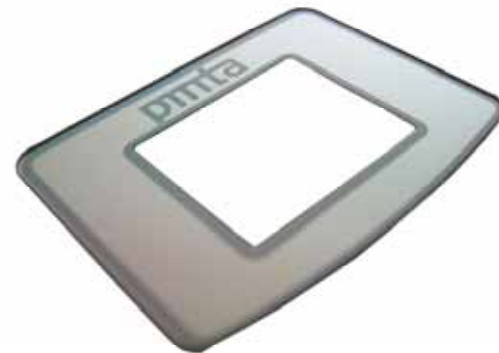
## **Information Needs of a Born Global - *Case Colochrome***

**Ismo Rautiainen**  
**CEO, Colochrome Ltd.**

**Tampere Hall 1.12.2006**  
**ICEB+eBRF Conference 29.11-1.12.2006**  
**TTY**



- Presentation agenda
- Speaker's background
- Born Global companies
- Colochrome company and milestones achieved
- Telecom value arena and market drivers
- Colochrome status as start up company
- Innovation value chain in start up company
- Information needs in innovation value chain
- Conclusions



## ➤ **Career**

- **Colochrome Oy, CEO** 2005 -
- **Perlos Telecom&Electronics, President** 2002 – 2005
- **Outokumpu Copper Products, Senior Vice President, Business Development** 1999 – 2002
- **NKF Group Management Board Member, Communication Networks** 1998 – 1999
- **NK Cables, President** 1998 – 1999
- **NK Cables, Vice President, Telecom Cables** 1997 – 1998
- **Outokumpu Copper Products, Drawn Copper Products Division General Manager** 1995 – 1997
- **Roxon Companies Managing Director** 1991 – 1995
- **Sisu-Auto, Vice President, Operations** 1990 – 1991
- **Sisu-Auto, Financial Director** 1987 – 1990
- **Sisu-Auto, Truck Division Business Controller** 1984 – 1987
- **Delta Plan, Plant Manager** 1982 – 1984

## ➤ **Education**

- **BSc(Economics) HSE 1974, MSc(Economics) HSE 1984**
- **Executive MBA 1989**

## ➤ **Contact**

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- Born Global companies have ambitious growth objectives normally targeting for international markets
- Small fraction, 3-5 % of all new companies create three-quarters of all jobs provided by these companies
- Depending on the definition only 0.2-3 % of Finnish companies are growth companies
- The number of growth companies has clearly decreased during last years in Finland
- Born Global companies face great risks but may potentially reap great benefits - that's why studying them is important

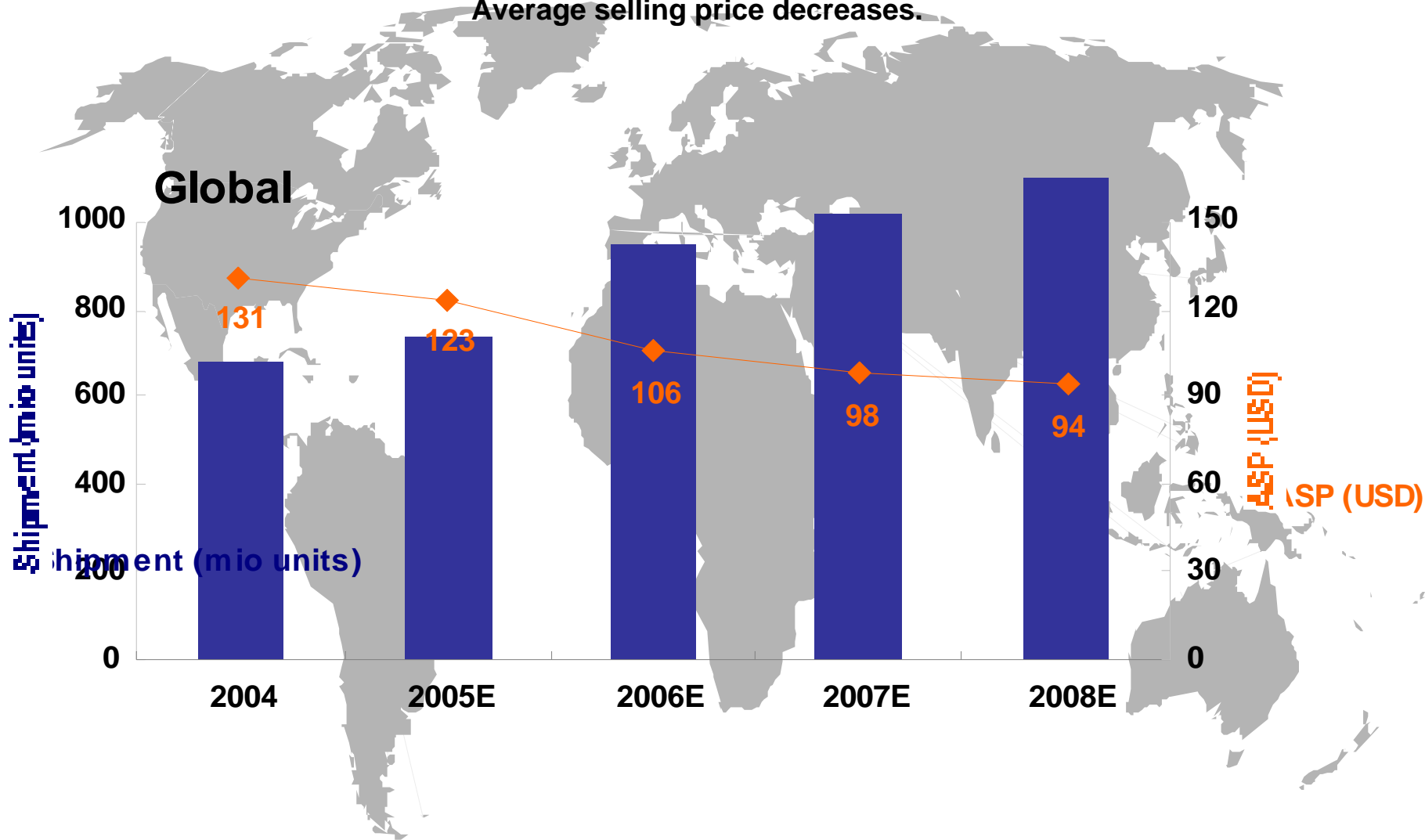
Sources: Erkko Autio: Born Global Start Ups (TEKES 2006), Elinkeinoelämän keskusliitto: Rahoitus tukemaan vakautta ja kasvua (2006)

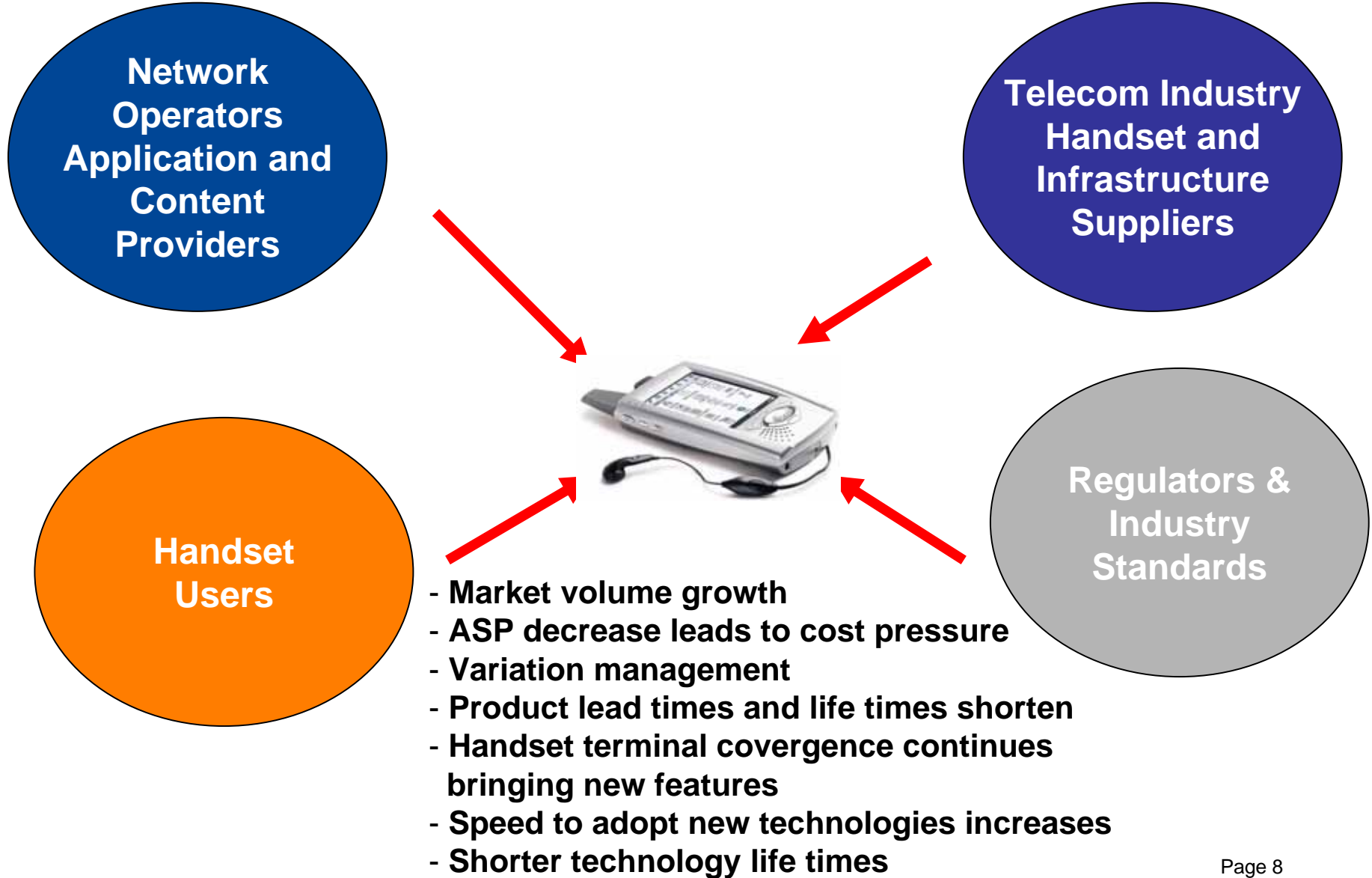
- Radical process innovation based on existing technology modified for window manufacturing purposes
- Streamlined for very high-volume & low-cost – yet high quality optical plastics manufacturing
- Integrated manufacturing unit including in-line molding, metallization, printing and hard-coat treatment together with cutting and packing
- Business models will be product sales, co-production with customers, licensing and integrated production line sales
- Objective is to reach 10 % global market share in mobile handset flat protective windows by year 2010
- Key elements patented for window manufacturing by Colochrome
- We have clear value proposition to the client: better windows with significant cost advantage based on continuously developing manufacturing technology

- A Finnish company founded in 2002.
- Seed funding from TEKES 2003-2006.
- VC funding from Eqvitec and Creandum and senior funding from OKO in 8/2006.
- Pilot line started October 2nd 2006.
- Production and customer deliveries 12/2006
- Ramp up of 1st production line in 1-3/2007
- Monthly capacity of 1 million display windows 6/2007
- Visible parts of innovation protected with 10 patent applications
- First patent approved in Finland 10/2006
- 13 persons working in the company at the end of 2006



Mobile phone market growth continues.  
Average selling price decreases.





# PINTA™ OUTSIDE The problems with conventional windows



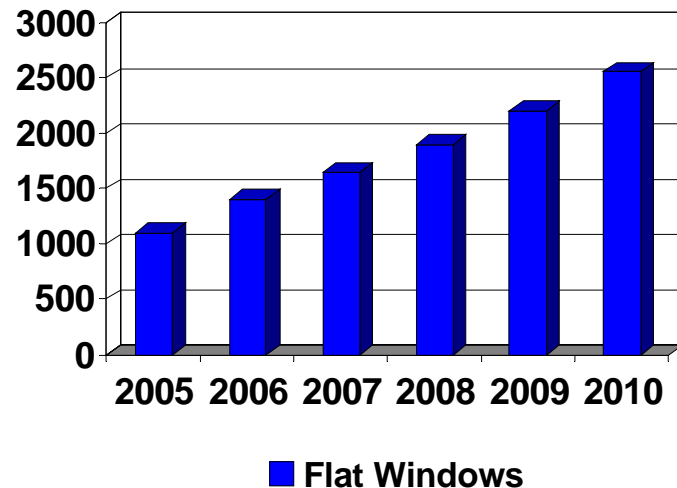
- Windows scratch easily
- Windows crack easily
- Poor visibility in sunlight and other distractive light sources
- Poor quality/cost ratio



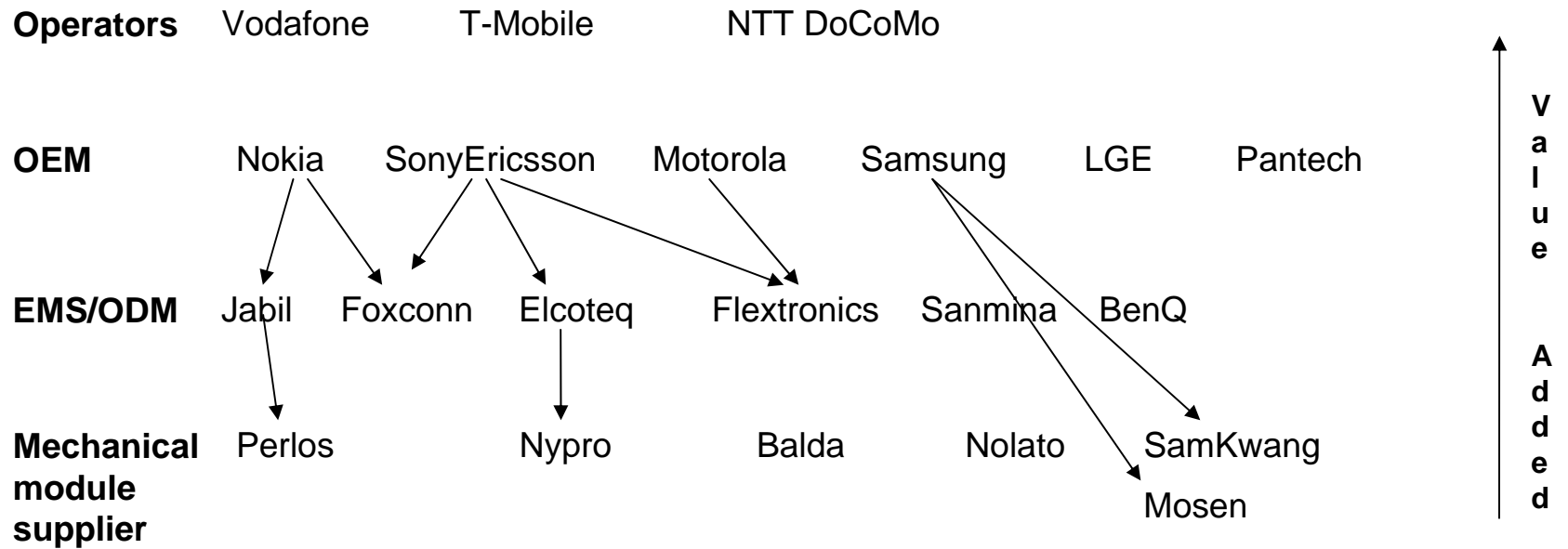
# PINTA™ OUTSIDE High Demand for Better Windows

- Demand for protective windows will increase by 30% annually
- Multi-colour displays spread rapidly
- Better resolution displays and cameras require better windows
- Multimedia services need better window quality
- Windows per handset increase - average number of windows will be three in 2007 new models
- Window size is growing
- Better windows = less battery power

Million units

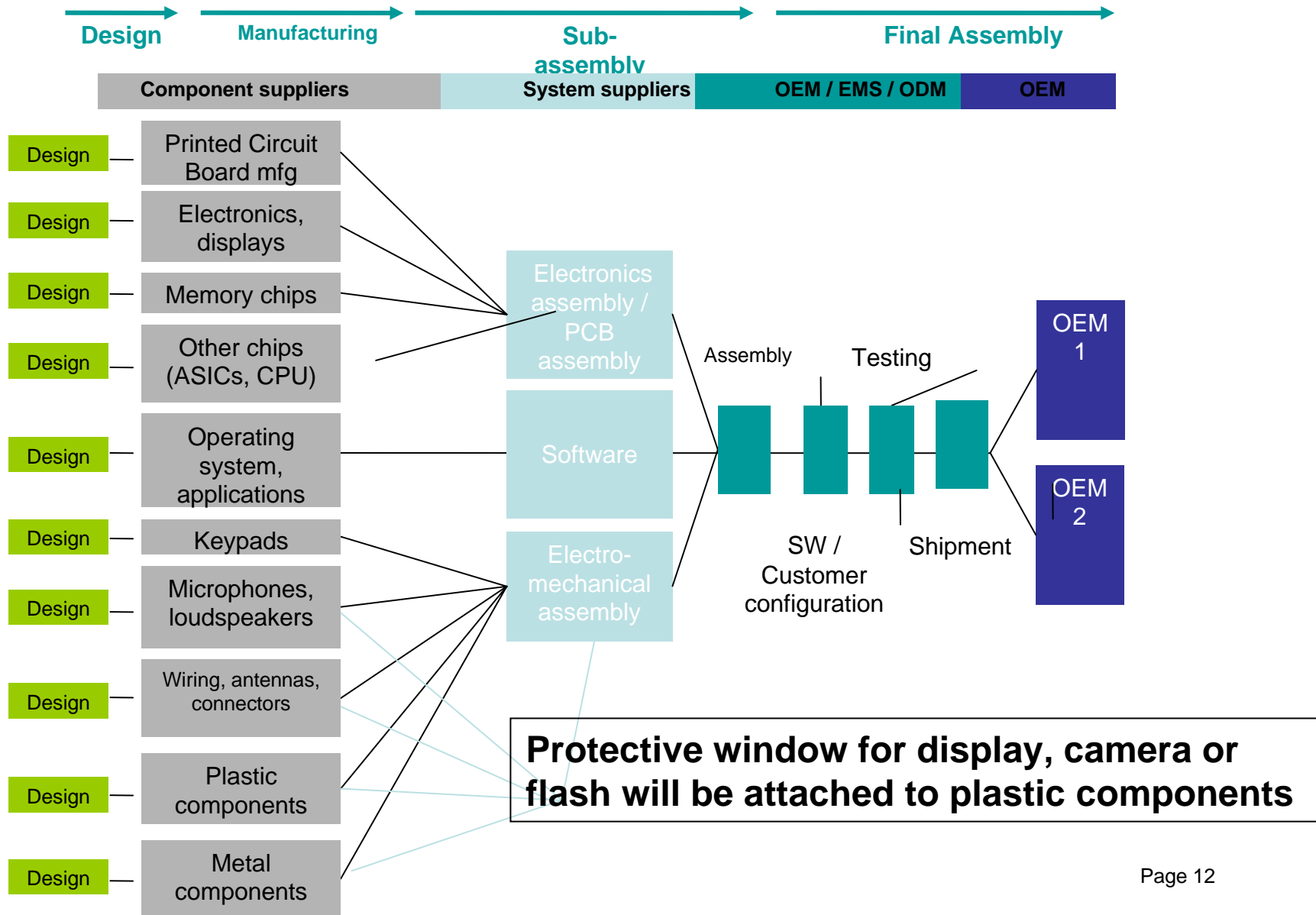


Source: Novintel



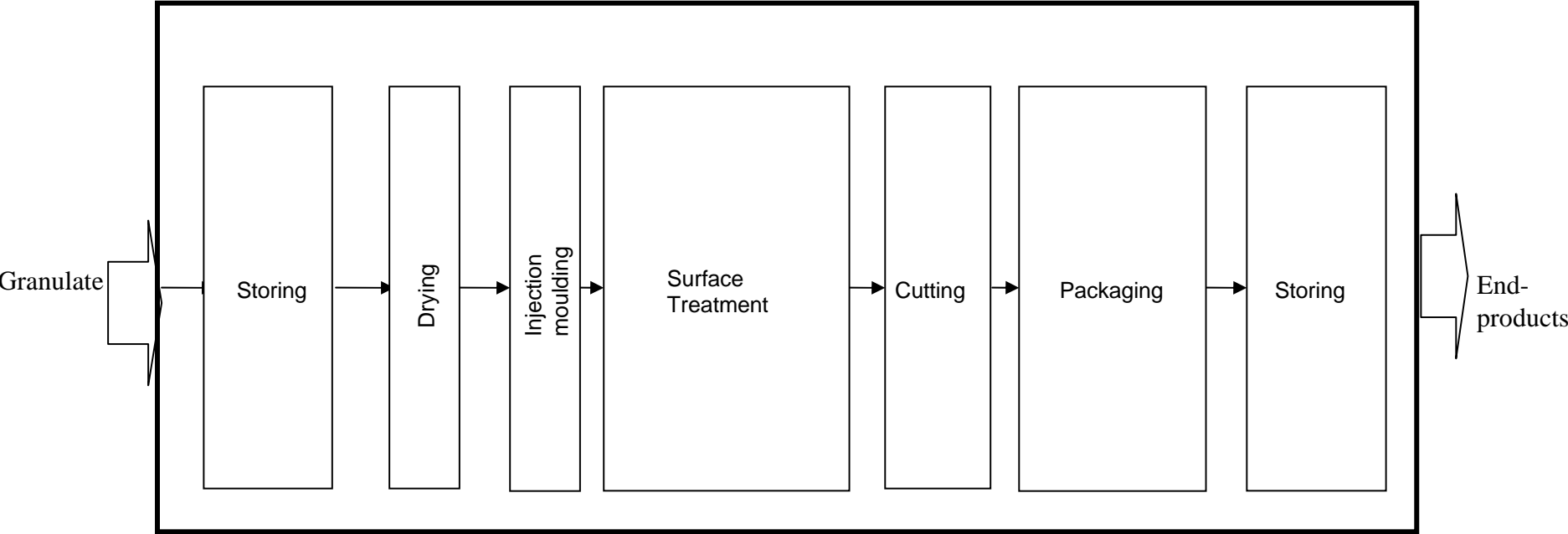
**Discussions mainly with OEM's, EMS's, ODM's and mechanical module suppliers**

Known business relationship →



<p>Total Optical Quality</p>	<p>High-quality and stress- free molded discs                  Excellent Optical characteristics                  Functional surfaces</p>
<p>Total Mechanical Quality</p>	<p>Scratch Resistance                  Chemical and Environmental resistance                  Abrasion resistance</p>
<p>Metallizing &amp;                  Decorative Options</p>	<p>Wide variety of metallized colors                  Choice of metal layer thickness                  Holographic design options                  Tinted lenses                  Color printing</p>
<p>Base Material Options</p>	<p>PC or PMMA                  Thickness range: standard 0.5- 2.5 mm</p>
<p>Other Options</p>	<p>Traceability on disc or window basis                  Identification for fraud protection</p>

<b>Customer Need</b>	<b>Injection Mould</b>	<b>Sheet Window</b>	<b>Pinta™ Process</b>
<b>Time to market</b>	<b>4-8 weeks per test round (mould, jig, tools)</b>	<b>3-6 weeks per test round (milling, tools)</b>	<b>1 week per test round</b>
<b>Scalability</b>	<b>Capacity 1,5 million per line (year)</b>	<b>Capacity 1,5 million per line (year)</b>	<b>Capacity 12 million/line (year)</b>
<b>Model Variations</b>	<b>1 work shift/ product change</b>	<b>0.5- 1 work shift/ product change</b>	<b>1 hour/ product change</b>



Raw material handling

Drying unit, Automatic material transfer

Injection moulding machine

Surface treatment unit including integrated metallising, hard coating and printing.

Automatic inspection.

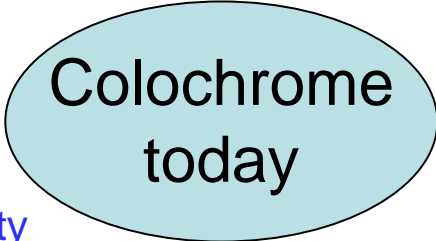
Cutting unit

Packaging unit with integrated final inspection

End-product handling

# PINTA™ OUTSIDE Colochrome company development

- Idea
- Kitchen table discussions
- Founders' commitment
- Pullout from employer
- Business plan creation
- Filling management team
- Raising seed capital
- Closing capital & incorporation
- Finding a home
- Starting up operation
- Developing high volume production capability and credibility
- Global scaling and technology transfer
- Product and technology development road maps update
- Revisiting business model
- Expansion to other businesses
- Trade sale, initial public offering or other exit

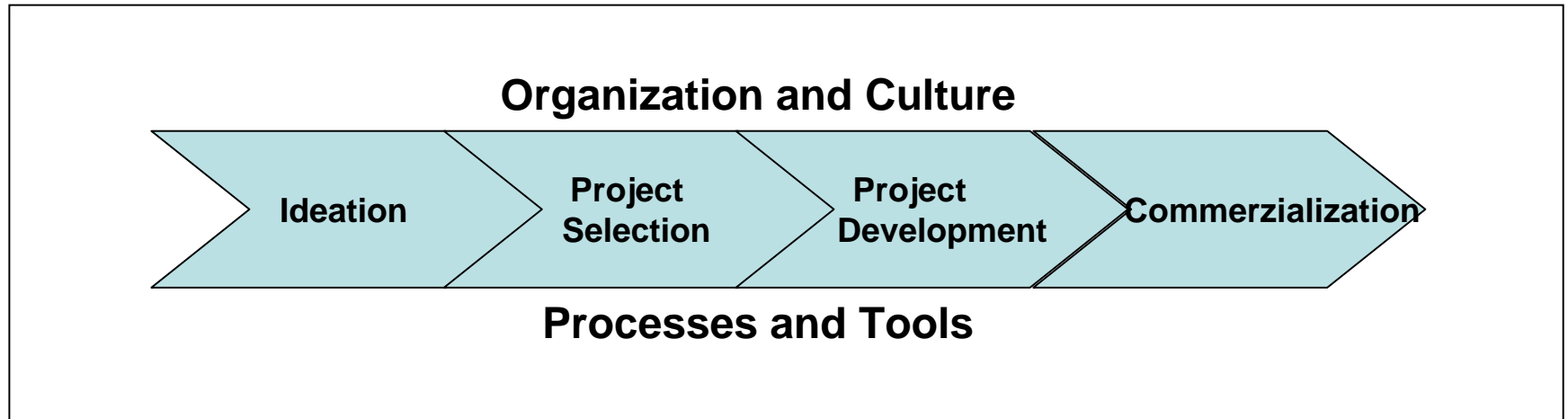


Colochrome  
today



- The myth that higher R&D spend translates into competitive advantage has been around for decades...
- There are no significant statistical relationships between R&D spending and the primary measures of financial or corporate success
- Among the Global Innovation 1000 a select group: the 94 companies across industries that have found ways to consistently get better returns on their innovation investment
- They focus on building multifunctional, company wide capabilities
- Innovation masters have an edge – each stage of the process becomes a platform on which the next stage can be built
- Born Global start up company needs to follow the same path!

Source: Booz Allen Hamilton: The Global Innovation 1000 (2006) and Money Isn't Everything (2005)



**The Ideation process – basic research and conception**

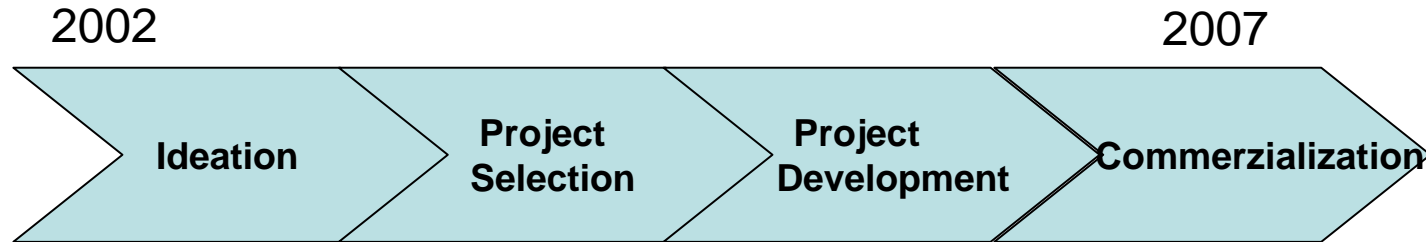
**Project selection – the decision to invest**

**Product development – in tune with the rest of the organization**

**Commercialization – bringing the product or service to market and adapting it to customer demands**

Source: Booz Allen Hamilton

**Colochrome innovation process information needs**



- Global value arena and market trends**
- Technologies and processes**
- Team members and competencies**
- Protection**
- Network creation**

**Customer needs**

**Financing sources**

- Understanding global value arena and its drivers is essential
- General level information is easily available
- Trends, business model changes and power play require company insight
- Meaningful information connected to strategic and operative decisions difficult or very expensive to get
- Personal experience and contact network valuable source
- Double check information always
- Ask the question – what this means to us?

- Process related information difficult to get from normal BI sources because it is company specific
- Competing technologies continuous development
- Economical performance evaluation requires team work and cross checking
- Company specific process performance information is confidential
- Core technology understanding and access to deeper knowledge
  - Optics and optoelectronics
  - Polymer chemistry
  - Coating
  - Mechanics and automation
  - Laser technologies
  - Injection molding
  - Visual inspection
  - Cutting and milling
  - Packing
  - Information systems

- Team members have accumulated over 150 years experience in telecom and other industries
- Challenge is in continuous learning and unlearning
- Competencies should be supporting and balancing
- Continuous discussion in management team
- New team members profiles should close identified gaps
- Possibility to create new company culture based on best practices
- Processes and competencies are the key

- Global protection know how very limited
- How to combine protection process, juridical and business perspectives in protection?
- Global mindset important but expensive
- Telecom business respects IPR's widely - Asia is challenge
- Protecting innovations crucial for start up companies
  - Patenting, trade marks
  - Confidentiality and Non Disclosure Agreements
  - Job Contracts
  - Process, competence and know how protection
  - Recepies, operating parameters
- Protection strategy important to define

- Networks are important in global business
- Latest information available from networks
- Credibility first based on vision
- Challenge to create win-win situations and benefit from networks
- Personal networks
- Company networks
- Utilization of both personal and company networks simultaneously is important

- Customer needs are changing rapidly
- Challenge to match expected and provided value offering
- What is the triggering feature for customer to buy
- Credibility is built in small steps
- Flat organization can be very agile and fast moving
- Better products with lower price
- Decreasing customer complexity in material tourism
- Shorter lead times and change over times
- New features for design
- Important to get access to real customer projects

- Founders' share capital and input
- Private investors and business angels
- Negotiations require experience and tactics
- Public industry policy financing
  - TEKES
  - TE-keskus
  - SITRA
  - Finnvera
- Technopolis Ventures
- Venture capital funds
  - Domestic
  - Scandinavian and European
  - International
- Debt financing
  - Banks
  - Leasing financing

- Born Global business environment is global value arena
- Globalisation is requiring open and holistic approach in Born Global information needs
- Information management processes are more and more important – challenge for small company is in resources
- Latest information is available in networks
- Uncertainty is increasing and disruptive technologies are challenging existing processes
- Higher clockspeed requires better information management
- Credibility creation for small company is management challenge – keep your promises and proceed step by step with high clockspeed!
- Keep your eyes open – change is always a business opportunity!
- Utilize your flat organization and all internal and network competencies!

# PINTA™ OUTSIDE



Makes your world brighter.