



# **ADB Group Technology day**

November 7, 2006

Zielona Gora, Poland

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# Agenda



Introduction	8:45	F. Pogodalla
R&D in Poland (& Ukraine)	9:00	J. Szajna
R&D: the DNA of ADB Group	9:20	K. Kolbuszewski K. Bilinski
Coffee break	10:05	
Demonstrations and site visit	10:20	
Buffet lunch	12:10	
Project Management at ADB	13:00	E. Jumelet
Customer Care at ADB	13:20	R. Rauper
Conclusion	13:40	A. Rybicki
Bus departure	14:10	

# WHY A TECHNOLOGY DAY?

1. See how and why we do what we do

2. Touch and feel the technology

3. Enjoy



## **R&D in Poland (& Ukraine) an HR perspective**

**Prof. Janusz Szajna**  
Regional President, Poland  
Executive Vice-President

HR story of ADB R&D  
is simple:  
'fighting for Talents'

- **1989 – end of Communism** (first democratic government in Soviet Block)
- **2004 – EU membership**
  
- **38 M of people** (Germany – 82, Italy – 58, Spain – 42)
  
- **75% – private sector**
- **19 % – corporate tax**
  
- **1.2% – inflation - the lowest in EU** (Sep'05 – Sep'06)
- **5.5% – GDP increase** (2006 forecast)
  
- **Very good education in science**
- **Big improvement in English**
- **Hungry to work on international / global scale**

**before ADB**

# Lucky chain (+ hard work)

1. Fashion for Computer Engineering/Science

- The most popular subject of study in Poland (from 1970s)

2. Excellent Computer Engineering College

- The best secondary school in the city (organized by A. Jeske)

3. The Computer Guru comes on-board

- Prof. F.Wagner employed at local Uni in 1970s (prof. of CERN, Lausanne, etc.)

4. 'Cream' of the young people from the region

- The best students from the region decided to study Computer Eng at local Univ.

5. The best graduates of each year stayed as lecturers

- The best staff at Comp. Eng & Electronics Dept. organized by prof.J.Szajna

6. The Dept was made 'international'

- 7-year-long cooperation with Bristol University, England (under EU program 'Tempus' headed by prof. E.Dagless)

- Study in England:

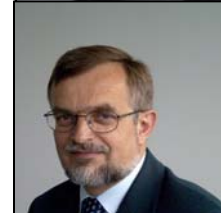
- 4 PhDs (3 years)
- 15 second MScs (1 year)
- 1/2 year at Inmos ST R&D



A.Jeske



prof. F.Wagner



prof. J.Szajna



prof. E.Dagless



7. That TEAM formed **CORE GROUP of ADB Poland**

# Tempus - going international

We brought from England :

- knowledge of working on international scale,
- industrial contacts

Contracts:

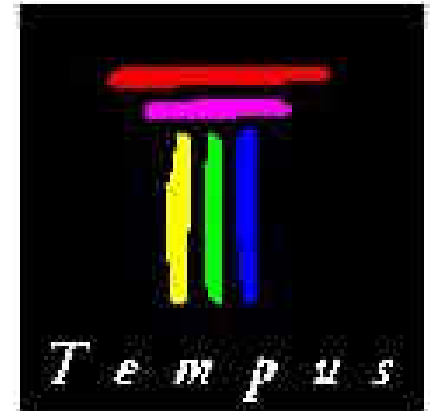
- software models of TV chips for ST in Grenoble
- e-learning system for British consortium EDEC



ST's Inmos R&D center



Bristol Univ., England



## A key meeting (1995)



Resulted in a contract between the University and ST in Singapore  
(DTV software for Japanese companies Uniden & Maspro)



Andrew Rybicki  
Director S&M at SGS Thomson (ST)  
in Far East



Janusz Szajna  
Director of the Comp. Eng & Electronics Dept  
at Zielona Gora University

**An independent company  
is born**

Company founded in 1995



Andrew  
Rybicki



Janusz  
Szajna



Krzysztof  
Kolbuszewski



Mariusz  
Walkowiak

13 people left University to join ADB

# ADB Polska development path



R&D Headquarters  
(since 1998)



One floor  
(1997)



Private Building  
(1996)



Local University  
(1995)

## R&D Growth in Poland & Ukraine (ADB & Osmosys)



1997 – 13 engineers  
2006 – 333 engineers (ADB & Osmosys)

Offices:  
Zielona Gora,  
+ Katowice + Wroclaw + Poznan + Kharkov (Ukr)

## R&D Education (Poland & Ukraine)



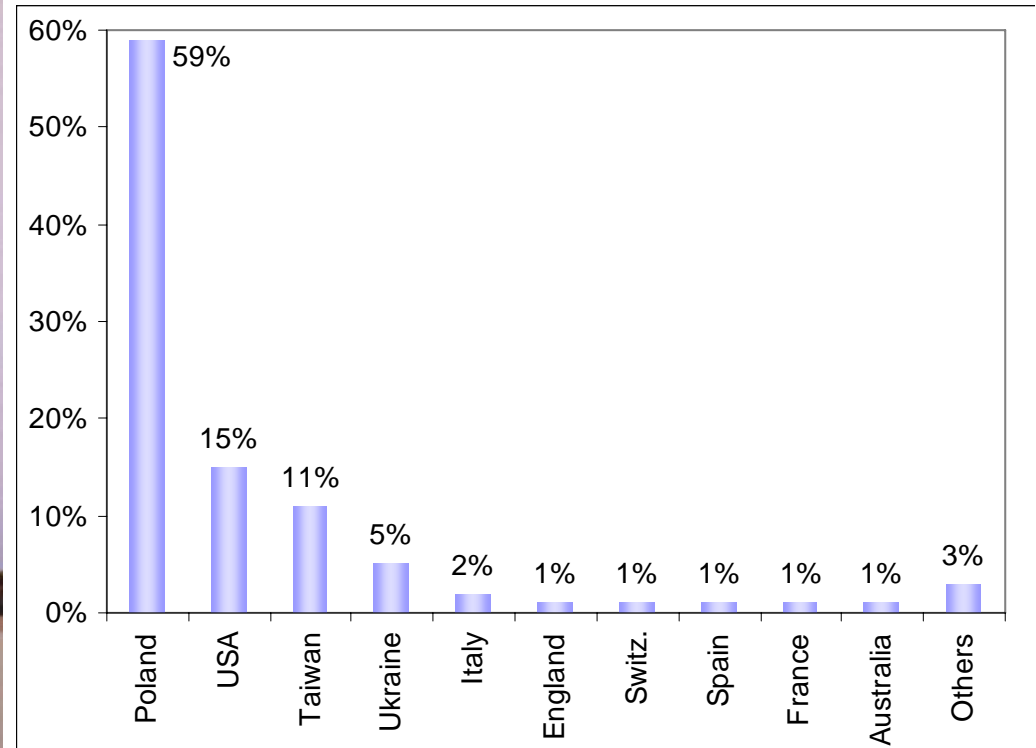
1.	Professors	1	0,3%
2.	PhDs	12	4%
3.	Masters Degrees	231	69%
4.	Students	39	12% (MSc in 12 months)
5.	Bachelors Degrees	39	12%
6.	Others	11	3%
	TOTAL	333	100%

## Staff turnover



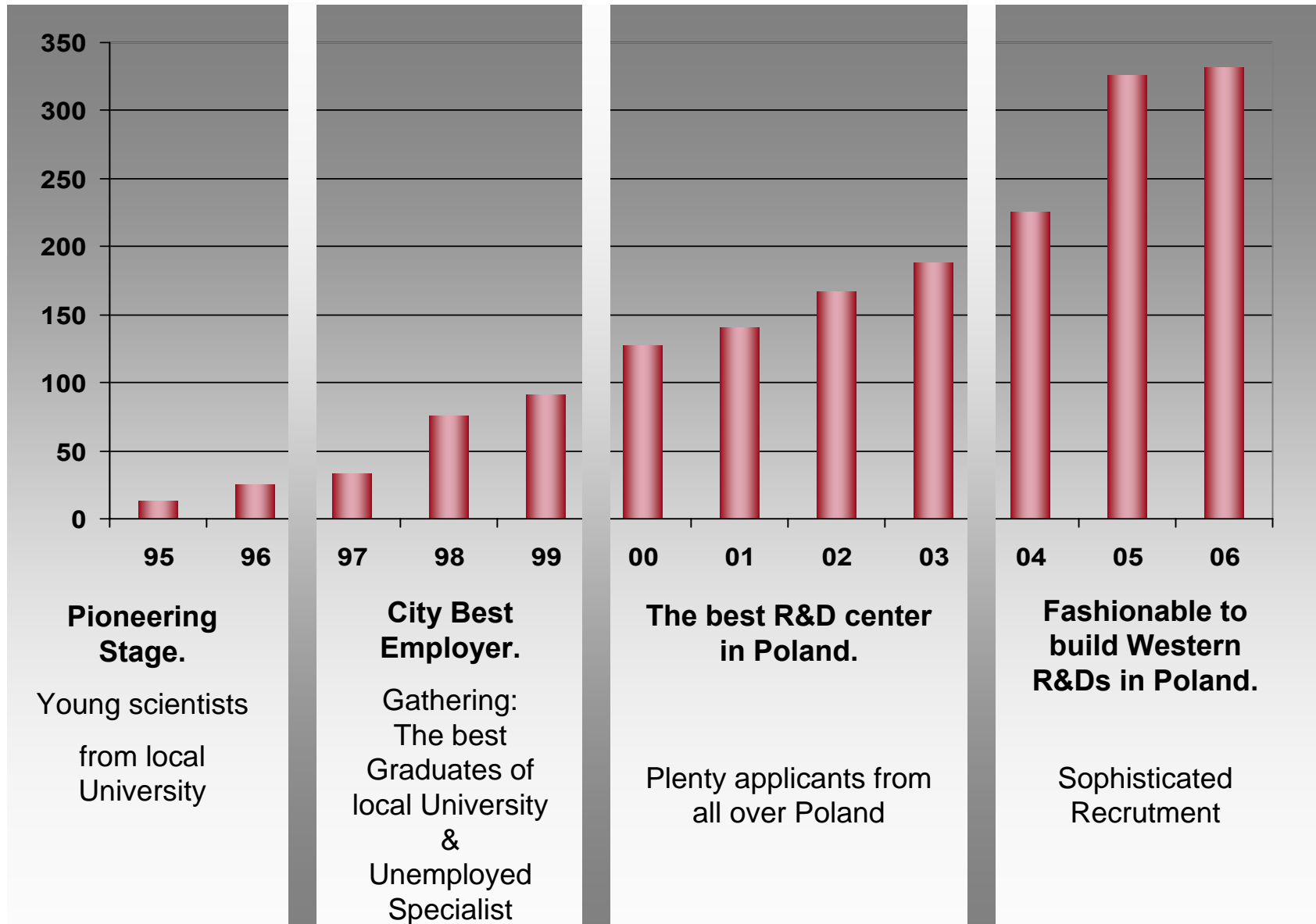
- Consistently low turn-over
- Less than 5% over last 5 years
- Less than 0.5% in management / experts population

# 21 Nationalities (60% of Polish people)



1. Poland
2. USA
3. Taiwan
4. Ukraine
5. Italy
6. England
7. Switzerland
8. Spain
9. France
10. Australia
11. Ireland
12. Russia
13. Thailand
14. Japan
15. Belarus
16. Canada
17. Wales
18. Honduras
19. Portugal
20. Zambia
21. Singapore

# R&D Staff Growth



# (Sophisticated) Recruitment

- a -

**Year-round Working with Students  
&  
Vacation Work (Internships)**

# Targeting Universities



## General goals

- Being present at Universities
- Influencing students' education
- Building effective links with ADB

## Operating mode

- Creating student laboratories for DTV
- Developing some courses
- Conducting seminars by ADB experts

# ADB Days at Universities



Wroclaw University



Gdansk University



Gliwice University

# Internships (Vacation work for students)



- Competition (exam):
  - “Win your work or internship at ADB”
  
- 8 universities
- over 500 participants
- internships for 60
- 2 or 3 months of work during summer vacation



# Vacation work for students

- [60 in 2005](#), 25 in 2004,
- Modern computers & equipment
- Activities *integrating* them with ADB staff
- Good money



**REAL PROJECTS to DO**

## Benefits for the company

- **20 new, excellent employees**  
(30% have become ADB employees)
- A large number of people who want to join ADB

(Sophisticated) Recruitment

- b -

## Algorithmic Contest

# Algorithmic Contest

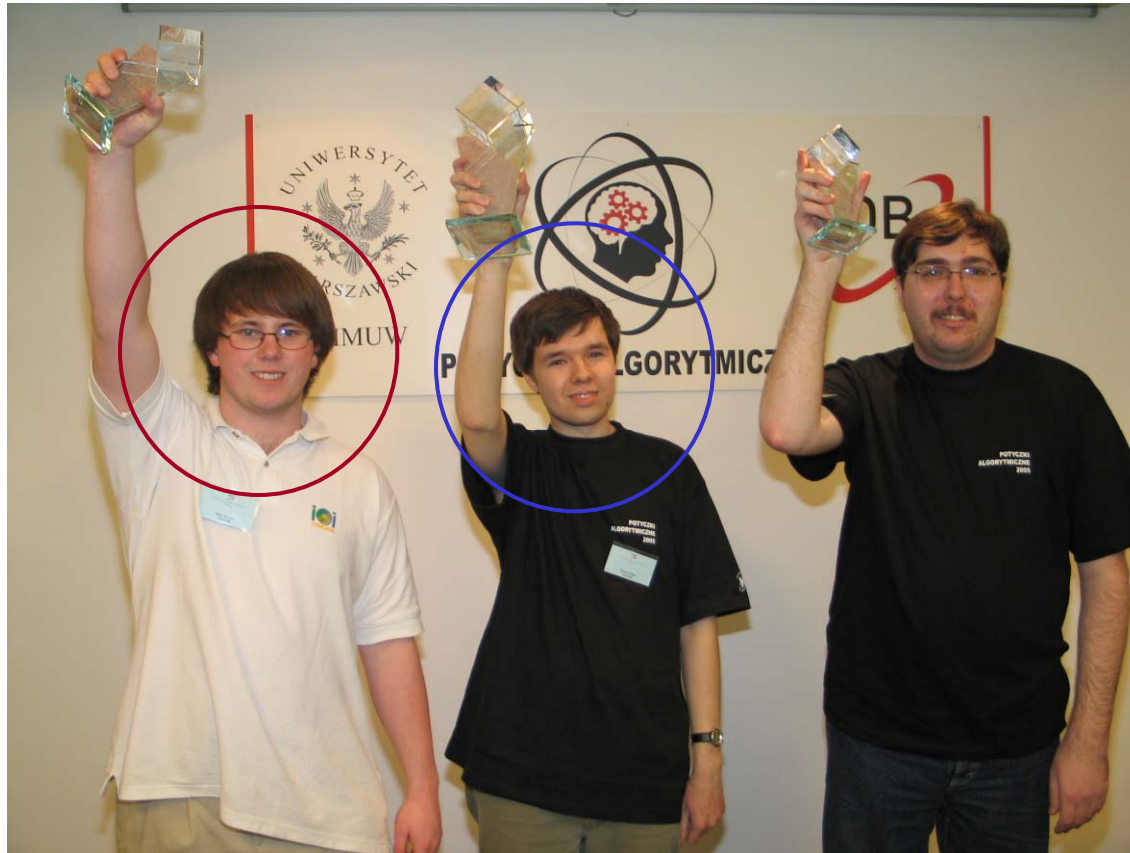
- Cooperation with prof. K.Diks  
father of  
World Programming  
Champions !!!
- National range of Contest



3000 – 300 – 30 – 3



## The best 3



- gold medal in 2006 at Worldwide Olympic in Computer Programming
- gold medal in 2006 at Worldwide Team Programming Contest



POTYCZKI ALGORYTMICZNE  
ADB POLSKA & MIĘDZYNARODOWA

## PASZPORT ADB Przemysław Drochomirecki

Cechy szczególne: geniusz komputerowy (lub coś podobnego)

Niniejszy dokument uprawnia do podjęcia pracy w ADB  
Polska Sp. z o. o. w okresie dwóch lat od daty wydania.

Warunkiem podjęcia pracy jest jedynie krótka rozmowa w dziale HR i uzgodnienie wynagrodzenia.

Data wydania: 11 kwietnia 2005



dr hab. inż. Janusz Szajna  
Prezes ADB Polska

**Advanced Digital Broadcast**

Interactive Solutions for Digital TV

## Benefits for the company

- 12 new, excellent employees
- Very good publicity (country wide & in Software Society)

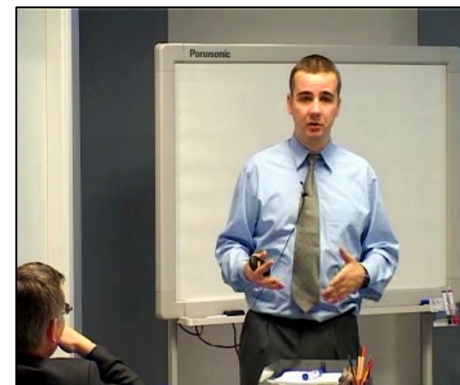


- Systematic, organized approach to staff education
- up to 10% of time can be allocated for study & training
- 80% of knowledge to learn is inside the company  
Goal - spread it
- Ensure several thousands man-hours of training each year  
(without blended learning)

# Knowledge sharing culture



**81 out of 376 (22%)**  
employees gave formal lectures



# Types of Educational Activities



2005 & 2006

- Professional 57%
  - Examples:
    - Software
    - Hardware
    - Project Management
  
- Managerial & Personal Development 12%
  - Examples:
    - Communication
    - Leadership
    - Time Management
  
- English 31%

## ■ E-learning materials prepared by ADB Uni

- 65 units
  - 20 Introduction courses
  - 45 Advanced courses
- 80 hours

## ■ Assumptions

- Simple form (easy to produce)
- Advanced content
- Save experts' time
- Courses should be available when needed

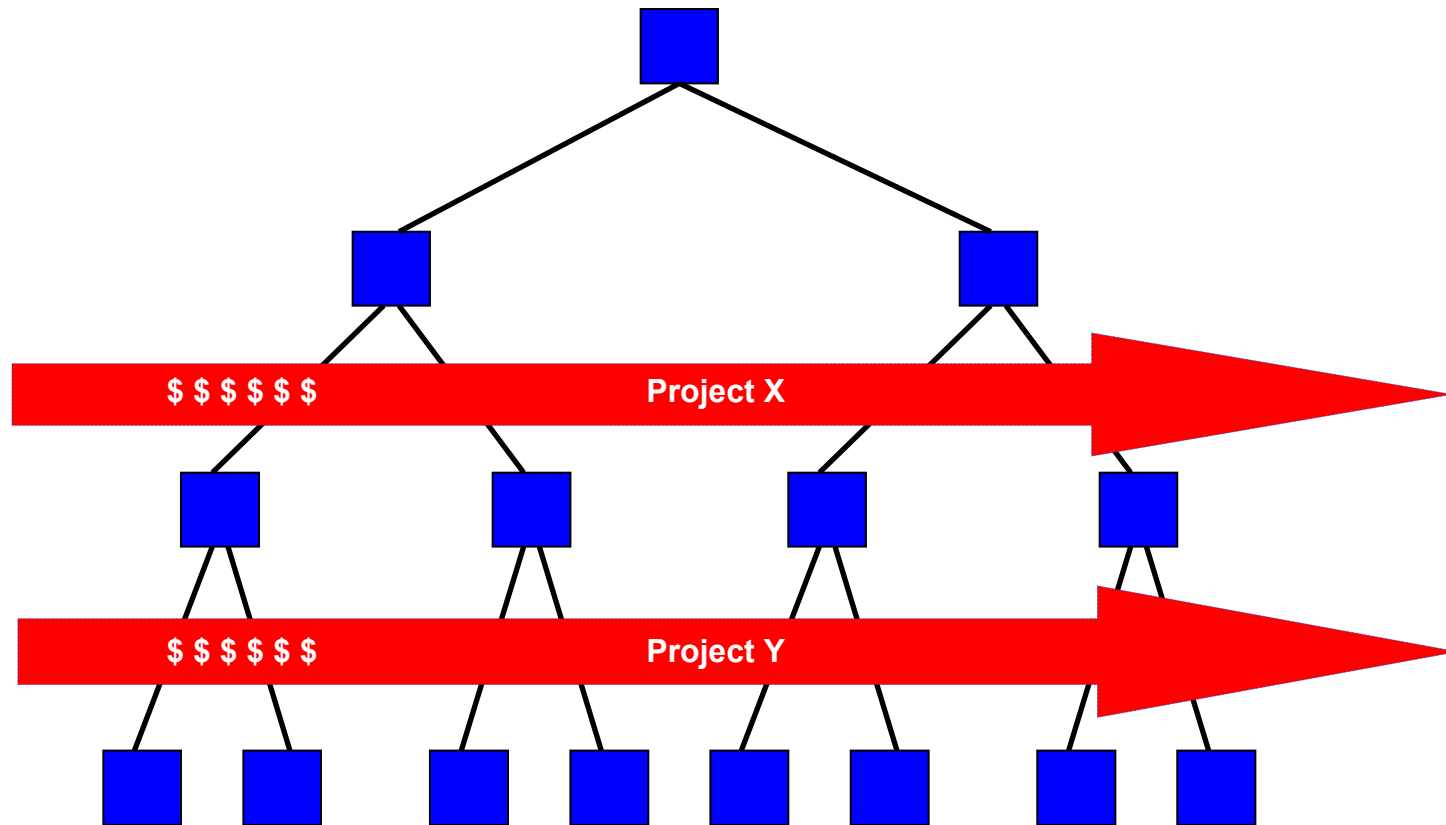
## ■ Blended learning methodology

- Expert's supervision
- Sometimes - Exams

**Pr-IM(e)**

**Project & Innovation  
Oriented  
Motivation System**

# Project Oriented Organization / Motivation



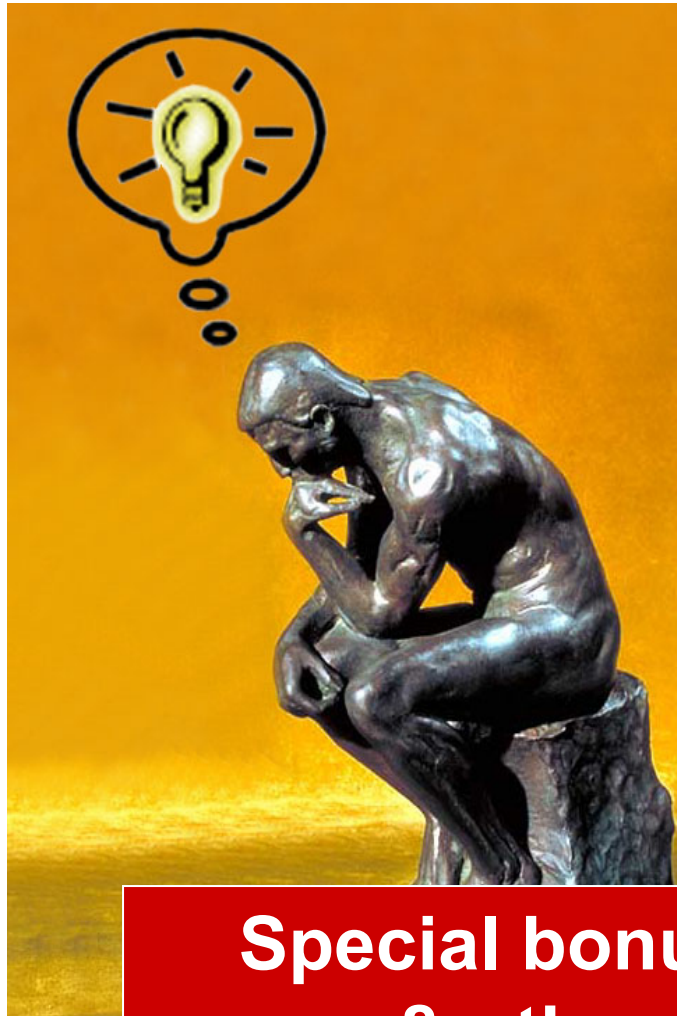
**Linking bonuses to  
successful result of the project**

- Bonus conditions – customer acceptance (manufacturing)
- No manufacturing = no bonus
- Payments in 2 instalments:
  - on manufacturing start
  - after 2 months at customer's site when no problems reported (quality-related)
- For internal projects - internal customer

Identification with the idea:

“I earn when the company earns”

think and act like  
a small entrepreneurial company

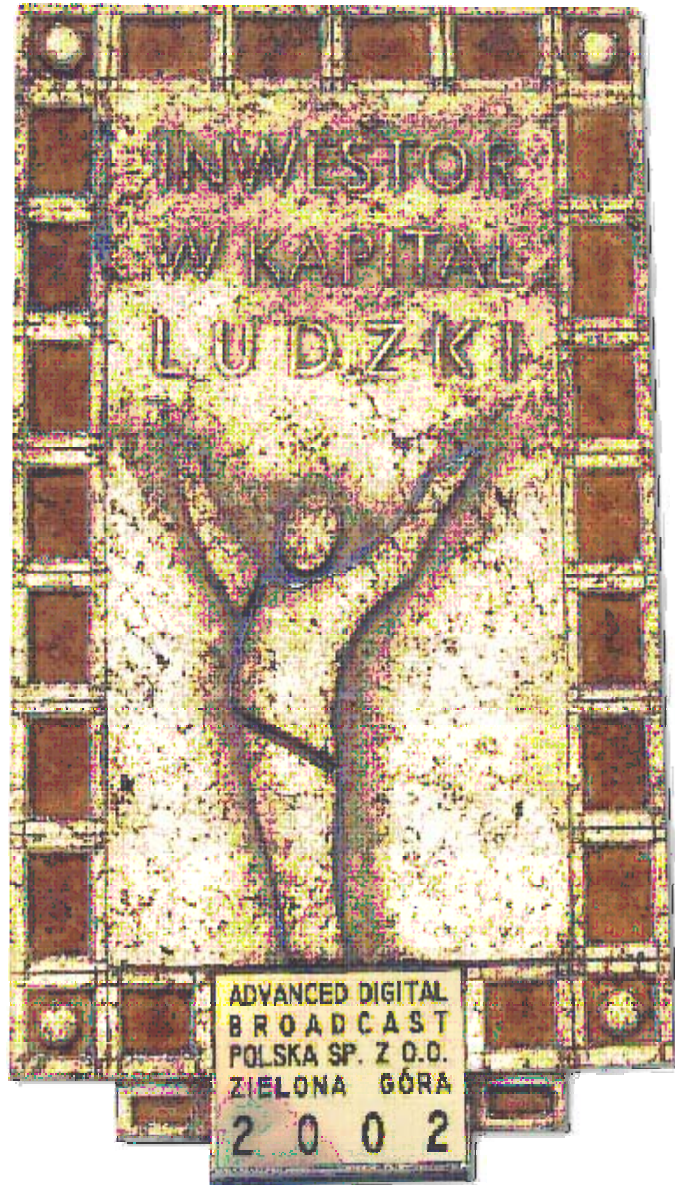


**Competitiveness = f (Innovation)**

**Special bonuses for Innovation  
& other important idea**

# Recognition

# 'Investor in Human Capital'



## Polish State Institute of Management Award

(one of 40 companies in Poland)

## 'Leader in Management'



### Promoted by President of Poland

(one of 14 companies in Poland)

# Janusz Szajna - Polish Entrepreneur of the Year 2004



In one of 3 categories: 'Service'



Ernst & Young  
Worldwide  
Contest



'For successfully keeping talents  
in Poland'

# Visit of First Lady J.Kwasniewska



# Visit of Prime Minister W.Cimoszewicz



# АДВ Україна (ADB Ukraine)



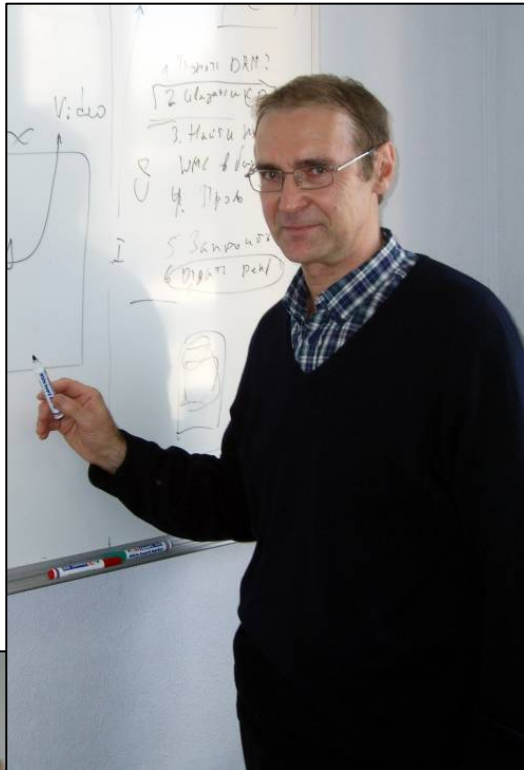
Kiev --

Kharkov 



Kharkov – 1800 km away from Zielona Gora

- **2<sup>nd</sup> largest city in Ukraine**
- **1.6 M people**
  
- **250 k students**
- **23 universities – mainly science oriented**
  
- **in previous Soviet Union:**
  - 3<sup>th</sup> place in industry & science (after Moscow & St Petersburg)
  - Military & space industry (now collapsed)
  
- **General situation – as in Poland 10 years ago**
- **English language – similar to Poland**



prof. Oleg G. Rudenko  
Kharkov University of Radioelectronics



- Janusz Szajna's professors degree earned in Ukraine
- 8 Ukrainian engineers fully employed in Zielona Gora

# President of Kharkov University in Zielona Gora



Prof. M.Bondarenko



# ADB Ukraine - Following Polish paths



- Currently: **23 employees**
  - Prof. Oleg G. Rudenko – President of ADB Ukraine
  
- 2 Engineer Departments (22 Eng)
  - Software Connectivity Dept
  - Software Solutions Dept
  
- Office
  - at University (2004-2005)
  - Rental (2006)
  
- ADB Ukraine works as a part of Software Eng. Unit in Poland
- Within 2 years it can be extended to 100-120 engineers

2005, 2006	
No of people	18
Man-months	40

Most of the current staff trained at ADB Poland

# Building Pride



with Prime Minister W.Cimoszewicz



# Building relationship & trust

Weekend in the Tatra Mountains  
with J.Szajna



# Summary

## **A sophisticated human resources strategy**

1. Strong links with universities
  - Constant interaction with professors and students
2. Spot the best-of-best
  - Nationwide algorithmic contest
3. Continuous education
  - ADB Corporate University
4. Structural motivation
  - Project & Innovation oriented motivation system

## **A sophisticated result**

- Very good, highly educated and carefully selected R&D team
- Very low turnover
- Good start in Ukraine



**Thank you**



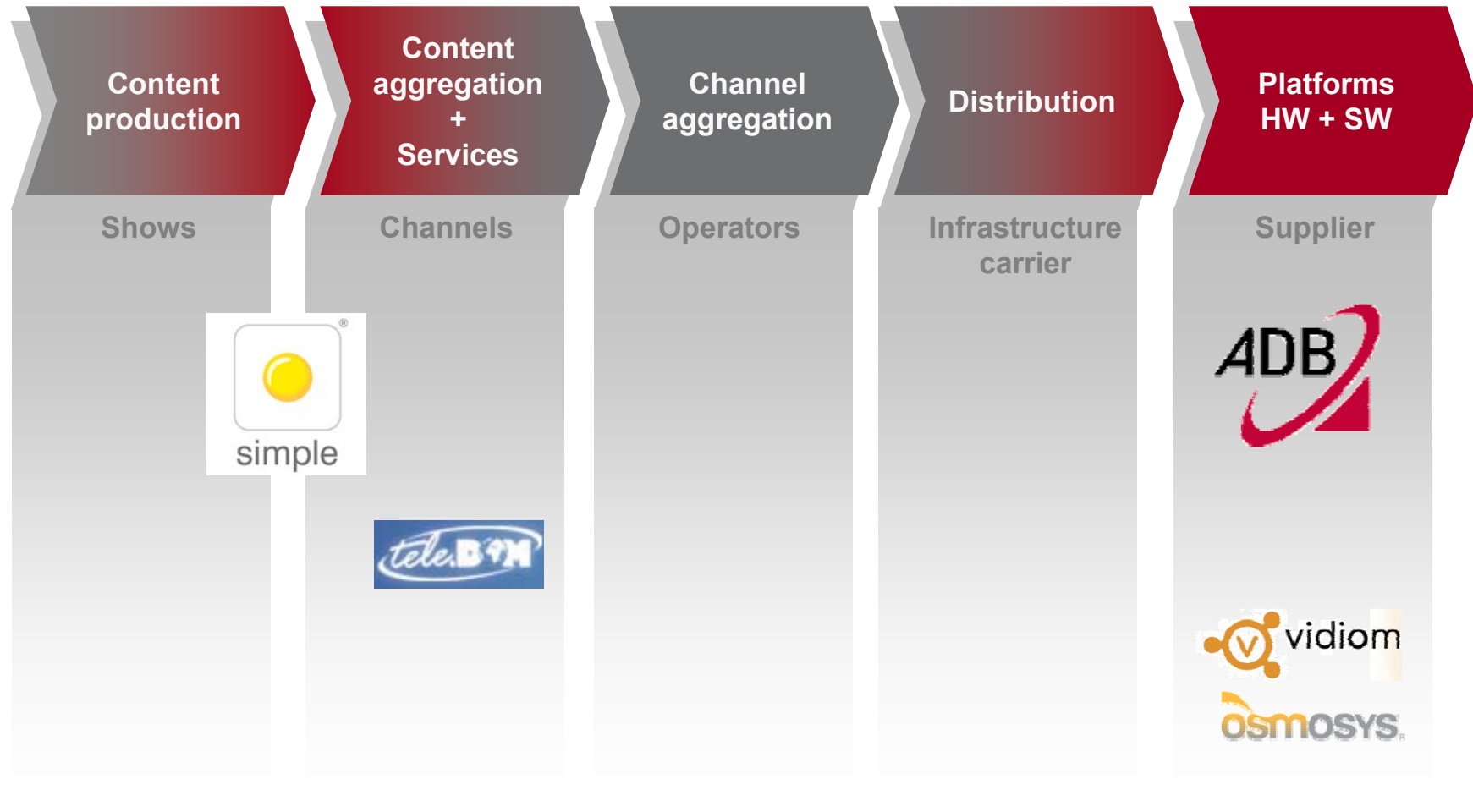
## **R&D: ADB Group's DNA**

Krzysztof Kolbuszewski - CTO ADB Group

Krzysztof Biliński - CTO ADB SA

***Ensure the company's leading technology position in the digital TV and communications industries***

# R&D to serve ADB Group's strategic positioning

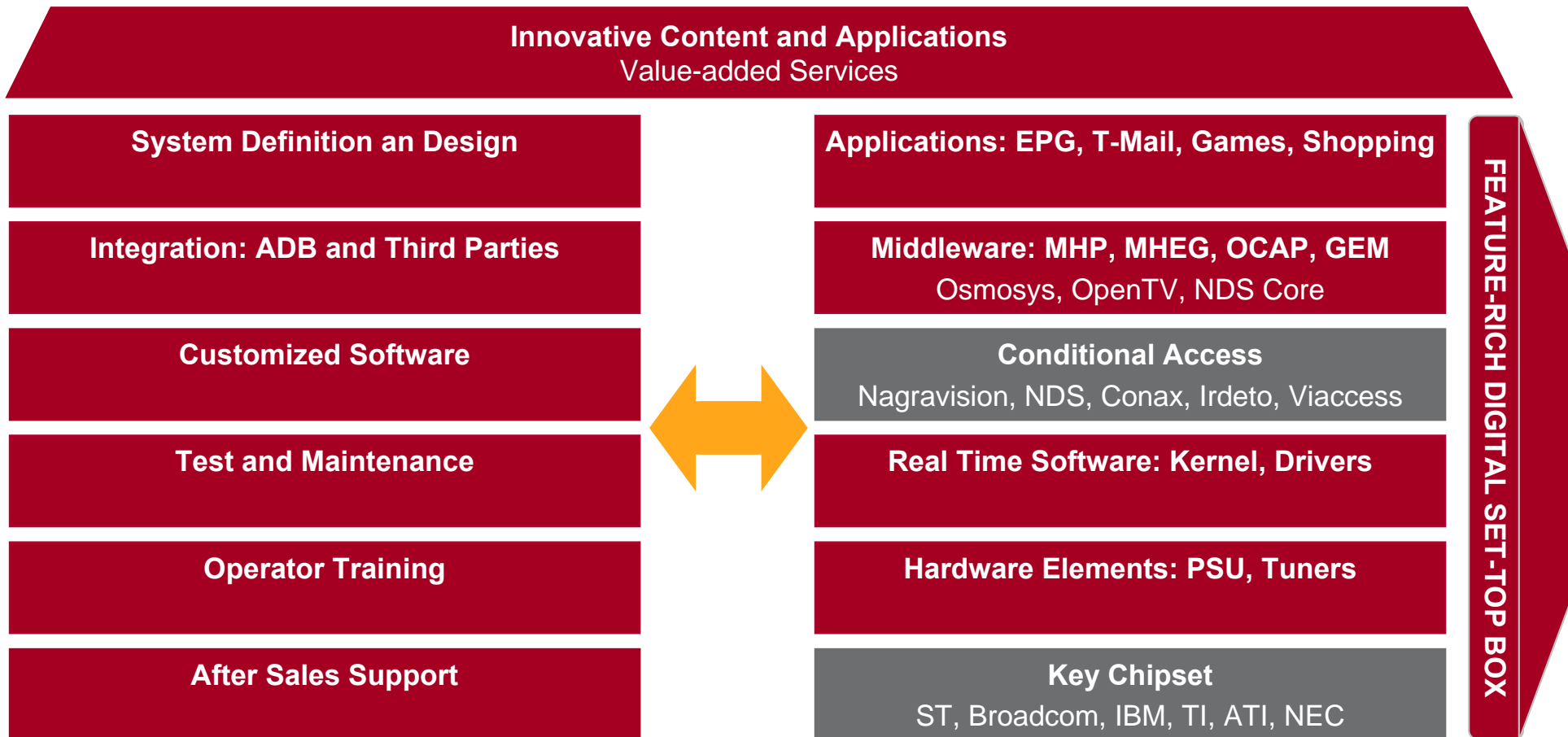


■ ADB Group involvement

## Interactive Network and Broadcast





## Consumer Premises Devices

### Innovative Content and Applications Value-added Services

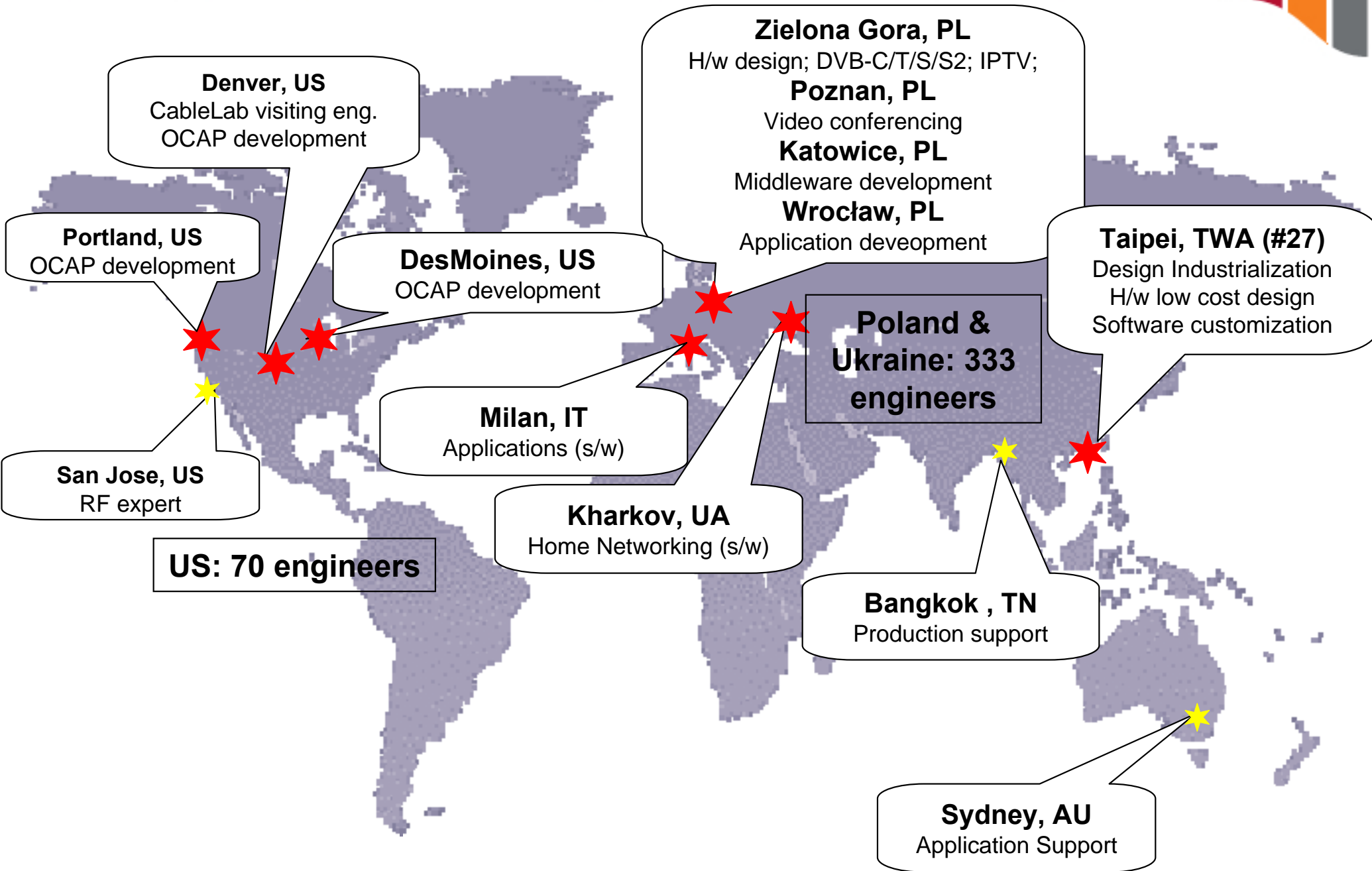


Note:

- ADB Group activity
- ADB Group partners activity

Digital TV Equipment	Software and Services	New Initiatives
Operator Systems      Consumer Products	Software Products	Interactive TV Systems
iDTV Modules	Services	New Content and Media
 322 engineers	 68 engineers   42 engineers	 simple 3 engineers

# Global R&D presence



**CTO**

**Project  
Management  
Office**

**Architect  
Design  
Group**

**Quality  
Control  
Department**

**Quality  
Assurance  
Department**

**STB Unit**

Zielona Gora, Taipei

Full cycle from spec.  
to production

Terrestrial/Satellite/Cable

**IPTV Unit**

Zielona Gora

IP/hybrid STB design,  
Advanced Video Coding

**SW Engineering Unit**

Poznan, Katowice, Kharkov

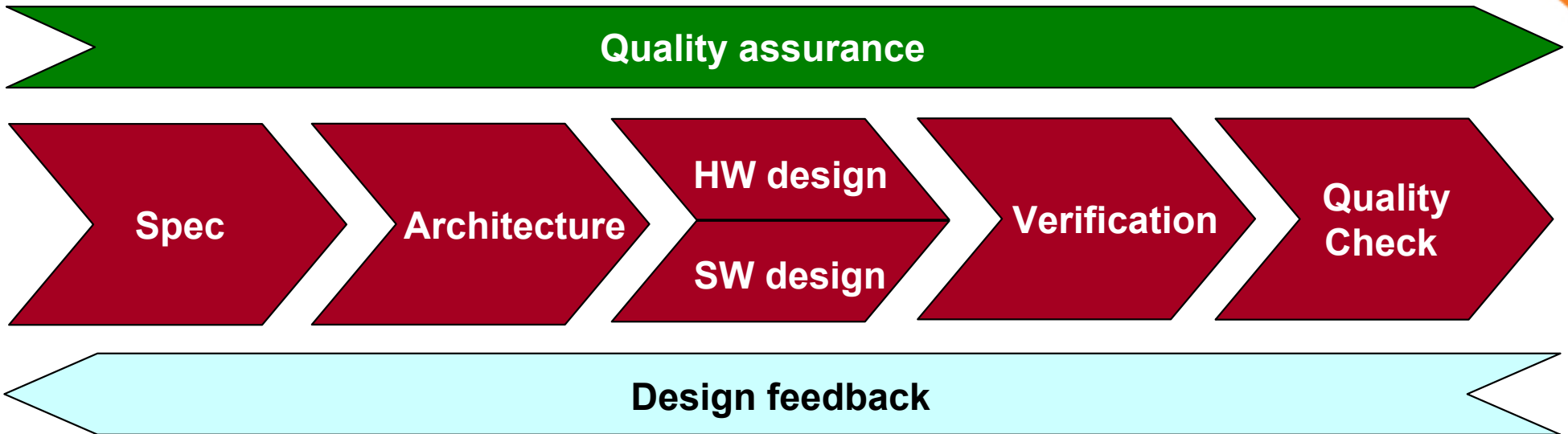
Software modules

322 engineers total of which

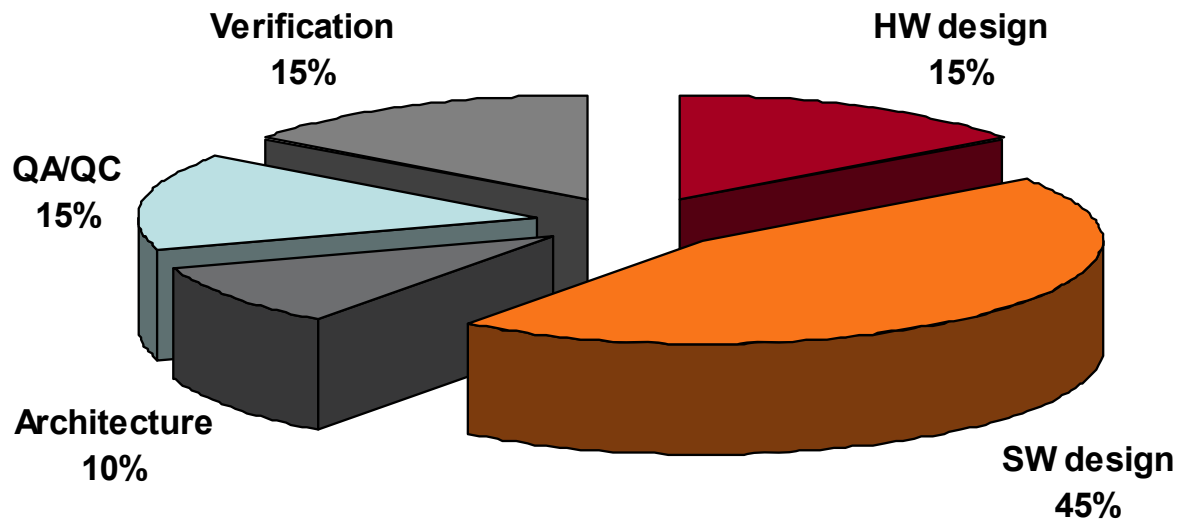
- 203 s/w engineers
- 41 h/w engineers

Education: 13 PhD, 212 MSc

# Typical STB design process



## Typical allocation of resources



## Design and implementation

- Entire STB (from spec to product)
- Head-end system elements
- Audio/video compression - new standards
- Videoconferencing and VoIP
- Interactive systems

## Integration

- 3rd party products (Operating Systems, Drivers, Conditional Access, Middleware, Applications, Hardware platforms)
- Internet protocols and TV solution
- HE e.g. Internet video and middleware server

## Testing/verification

- Conformance to specifications and standards
- Proprietary test suites
- Automation

## Processors

- Time- and resource-constrained environment
- Parallel programming
- Reliability in any usage condition
- Multiple processor support  
STM, IBM Pallas, NEC EMMA, Broadcom, TI

## Audio/Video

- Audio/Video processing on TV
- Real time video processing
- Multiple coding standards support  
MPEG2, AVC, SDTV, HDTV, AC3, Dolby Digital, AAC

## Data comms.

- High speed data communication protocols
- Real-time data processing
- Multiple standards support  
DOCSIS, USB, IEEE1394, IEEE802.11x, Ethernet, DVB-RCC, PSTN

## Operating Systems

- Industry standard OSs
- Proprietary OS –ARTOS
- Multiple OS support  
OS20, uCOS, Linux, Nucleus

## Conditional Access

- Engineering knowledge
- Integration of CA systems
- Verification and certification
- Multiple CA support  
Irdeto, NDS, Nagra, Conax, Latens, S-A, Cryptoworks, Mediahighway, Motorola

## Mechanical design

- Thermal modeling
- Mechanical 3D CAD systems

## Middleware

- Specification knowledge
- Proprietary embedded stack
- Multiple middleware support  
OpenTV, MHP, OCAP, NDS Iconics, Microsoft .Net, WinCE

## Customization

- Extensions to OpenTV middleware – TCP/IP stack extension
- DVR Extensions to MHP middleware
- Non-standard EPG data broadcast over Internet or OpenTV application.
- Customized Added Value Services

## RF design

- RF circuits design –proprietary tuners based on silicon ICs
- RF IC architecture knowledge
- Multiple RF technology; support  
Microtune, Broadcom, STM, Philips, Maxim; RF Magic

## System/Head-end

- Support for Head-End operators in broadcast start-up
- Debugging and integration with 3rd parties
- Field trials

## ■ Drivers, Real-Time Operating Systems

## ■ Digital Signal Processing

- ClariTV – picture improvement (Standard definition video to HD TV)
- Audio/video codecs, e.g. H.264 (MPEG4)
- Transcoding technologies, e.g. MPEG2 into MPEG4
- Performance improvers, e.g. Web browser
- VoIP & Video Telephony

## ■ Hybrid systems

- Multi-medium: Satellite & IPTV, Terrestrial & IPTV, Cable & IPTV
- Multi-OS: OpenTV + IPTV & MHP + IPTV
- Multi-CA: Nagra + Conax + Irdeto

## ■ Advanced technologies

- Video On Demand, Push VOD, Pull VOD
- Home Networking (Multiroom)
- Mosaic
- Open Internet
- Digital Rights Management

## ■ Connectivity

- Delivery Protocols: RTSP/IGMP, HTTP, UPnP/DLNA/WMC
- VoIP, Video Telephony, P2P, Messaging, Skype, ...
- H/W solutions: Wireless, HPNA, HCNA, MoCa, Home-plug

## ■ Middleware

- Imagenio
- Alcatel OMP
- Orca
- MHP
- NDS Iconics
- OpenTV
- Minerva (dev)
- Myrio (dev)

## ■ CA & DRM

- NAGRA
- Irdeto
- NDS
- Verimatrix
- Latens
- Widevine
- Microsoft

## ■ OS

- uCOS
- OS20
- Nucleus
- Linux 2.4 & 2.6
- WinCE

## ■ Browsers

- Mozilla
- ANT
- MHP 1.1

## ■ Video Servers

- BitBand
- nCube
- Concurrent
- SeaChange
- Kasena
- OVS
- Streaming 21
- Thales
- Cisco

## ■ Delivery Protocols

- RTSP/IGMP
- HTTP
- UPnP/DLNA/WMC

## ■ AVC Encoders

- Reference Enc
- Harmonic
- Tandberg
- SkyStream
- Modulus
- Thomson
- Main Concept
- Moonlight
- x264

## ■ AV Codecs

- MPEG2
- H.264,263 Enc/Dec
- VC-1, WMV, WMA
- AAC LC/SBR
- H.261
- G.711 uLaw/ALaw
- G.723.1
- GSM.6.10

- 300+ engineers
- 15,000,000+ lines of source code
- Designing s/w for digital STBs since 1996
- Designing h/w for digital STBs since 1997
- 250+ software releases for ADB products
- 70+ hardware platforms
- Worked with ~60 customers all over the world – real life experience
- Over 200 technology patents applied for to-date

- **Winners of The Cable & Satellite International Product of the Year Award**
  - **“Best Interactive TV Technology” - Mediacast 2003 (London)**
    - ADB's MHP interactive software
  - **“Best Customer Premise Technology” - Mediacast 2004 (London)**
    - 3100TW, MHP Internet Protocol (IP) terrestrial set-top box
  - **“Best Customer Premise Technology” - IBC 2006 (Amsterdam)**
    - 3800TW high definition, AVC IPTV set-top box
  - Several times ADB was runner-up/short-listed or nominated in other categories and years
  
- **Spree-Neisse-Bober Euro region Awards 2003: German-Polish Innovation: 1st Prize**



# In summary, ADB Group's differentiation relies on



## 1. Massive R&D expertise focused on differentiating areas

- Software, integration, testing, QA/QC, customization

## 2. Mastering its own destiny

- From low-level drivers/OS to applications and systems

## 3. Versatility, adaptability

- Mastering a wide portfolio of technologies

## 4. Management of complexity

- Objective: time-to-market and quality

## 5. Innovation

- Defining Digital

- Still some way to go
  - 50% of HDTV screens are not displaying any HD content
  - 58% of households with broadband and multiple PC's do not have home networking
  - 34% of households with Digital Camera never print any photo
  - 74% of households with Digital Camera do not have color printer
  - 78% of households with MP3 player never buy any music online
  - 80% of web enabled phone never use data services
  
- Integration between products and services is required to make a device something more than a piece of plastic

Source: Independent research

Convergence

Technology

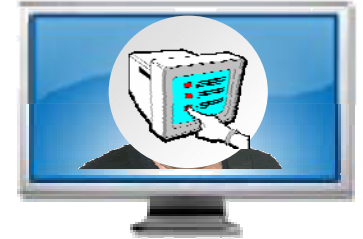
End-user  
convenience

## ■ Music & Video on-demand



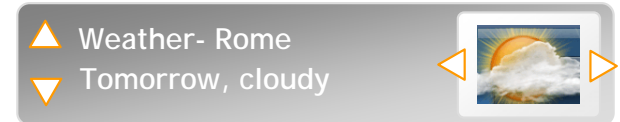
## ■ TV shows / Series

- Chapters on-demand: Archive, Pre-views, Podcasts,...
- Search engine - a search function dedicated to a certain program
- Extended Multimedia information - Video, Photos, text, screensaver, ring tones,...)
- Participation - (Videoblog)



## ■ Widgets Services

- News, Weather Forecasts, Sport, Public services, Community, Traffic information, ...
- Content format conversion – eg Web to TV, TV to mobile,...
- Personal EPG



## ■ New Channels

- Theme channels, e.g. Sketches, History, Community, News, etc.
- Expert/Celebrity Guide VideoMagazine + links
- Community channel – the most voted contents by users
- Videoblog - Peer to Peer



## ■ T-government, T-learning

- e-ID conditional access

- Content Access
  - Broadcast, Multicast, Peer-to-peer
  - Multi-Operator Premium Services
  
- Content Management
  - Multi-Platform User Interface (TV, Mobile, PC/MAC)
    - Remote management
    - Personal Program Agenda (Personal EPG)
  - Editing, formatting, morphing
  
- Content Sharing
  - Personal Networking, multi-platform, multi-site
  - Internet Posting
  
- Remote support
  - Telediagnosys (servicing)
  - Upgrades & Configuration for dedicated services



- **Hybrid and multistack** are mandatory to make convergence happen
  - Connect existing operators with legacy systems to internet by using Multi-stacks
  - Satellite/IPTV, Terrestrial/IPTV, Cable/IPTV, Terrestrial/Sat
  - Transcoding
- Technology is **integrated**
  - Attractive content - (SIMPLE)
  - Advanced middleware (OSMOSYS)
  - User-friendly application (ADB/OSMOSYS/VIDIOM)
  - HE connected servers (ADB/OSMOSYS/VIDIOM)
  - Maintenance services (ADB/OSMOSYS/VIDIOM)
- Technology as **value adder**, not as gadget
  - Advanced communication (e.g. videoconference, VoIP, video messaging): add value to consumer, therefore to operator
  - Peer-2-Peer content distribution system: facilitate distribution, reduce bottlenecks
  - Hyperlinks in content (e.g. TV advertisement), audience metering: increase operator's value proposition
  - Gaming technologies: network, user-generated content

## INTEGRATION + QUALITY + EASY OF USE

- END-TO-END SYSTEMS
  - ADDED VALUE SYSTEMS
  - HOME ENTERTAINMENT SYSTEMS
  - CONNECT TO INTERNET
  - HYBRID AND MULTISTACK
  - ADVANCED FUNCTIONS
- content, security, business model
  - for end-user and operator
  - multi STB per home + HNW+PVR+...
  - more content and services
  - convergence
  - differentiation

**MASTERING A WEALTHY TECHNOLOGY  
PORTFOLIO IS KEY**



**Thank you**

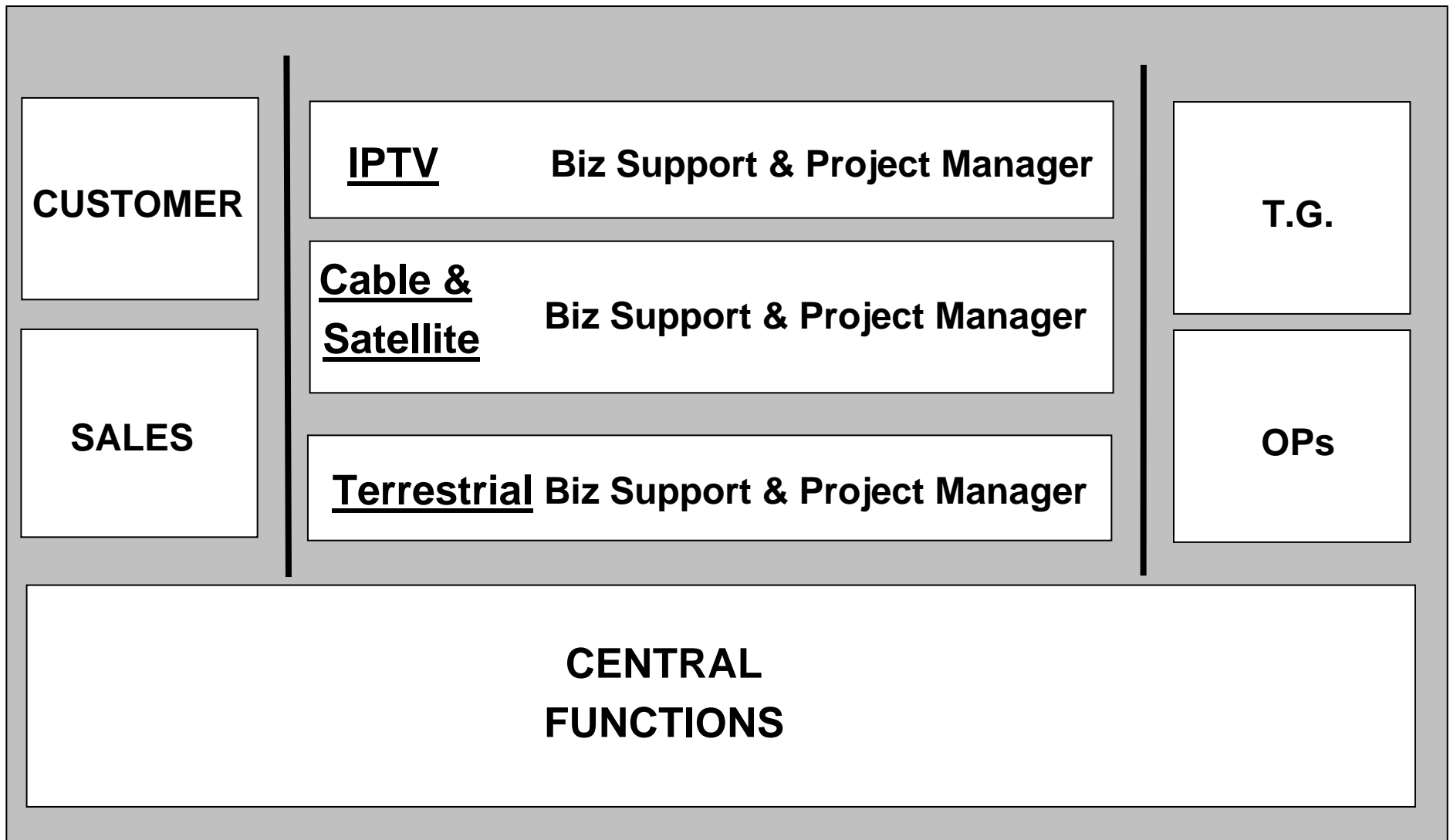


# **Project management at ADB Group**

Eric Jumelet

Vice President, STB Product Group

# STB Product Group : COORDINATION



# An ADB Group product



broadcasting

branded content

electronic guides

navigation tools

application software

systems & middleware

hardware



# An ADB Group project



IP Providers

broadcasting

Quality control

branded content

Component Suppliers

electronic guides

External certifications

navigation tools

application software

Manufacturing subcontractors

systems & middleware

After-sales  
Customer service

hardware

Logistics



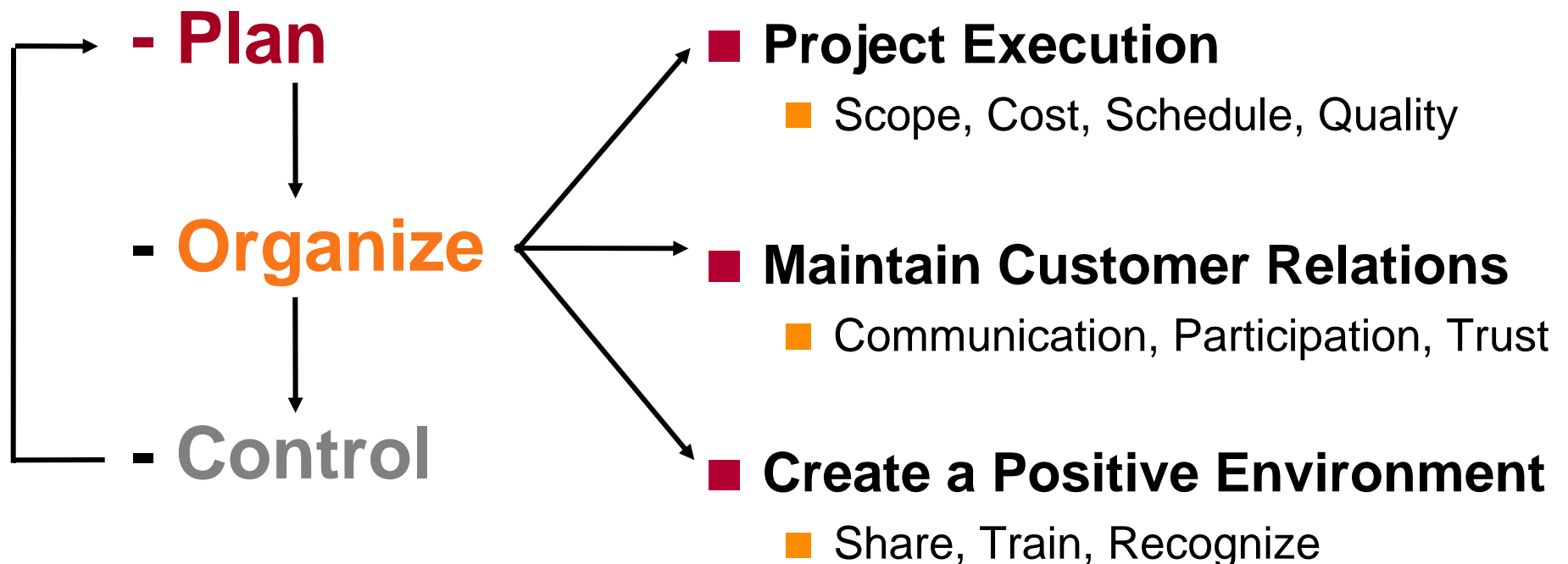
**Project Management is :**

**Causing a Planned  
Undertaking to Happen**

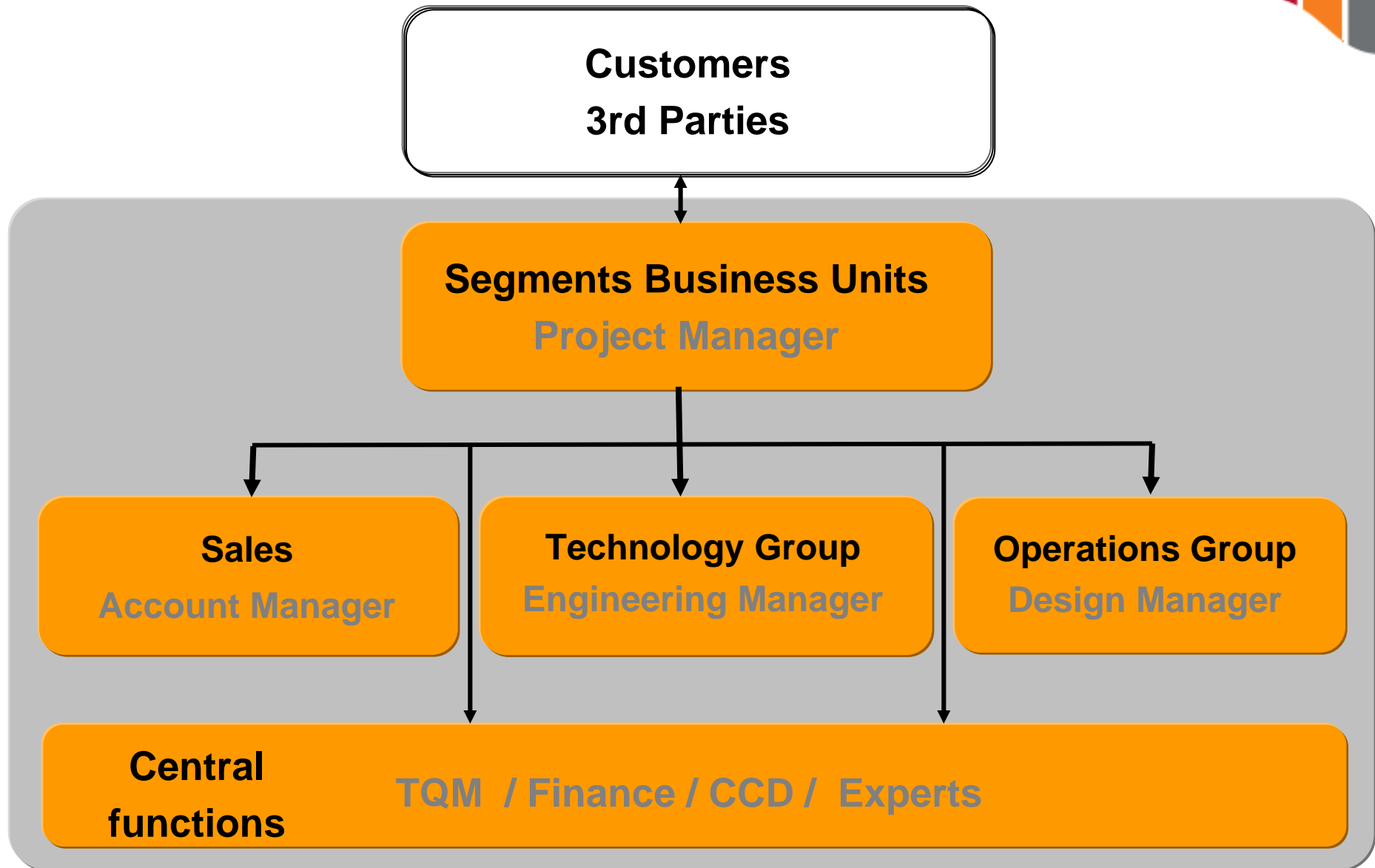
# Why focus on Project Management



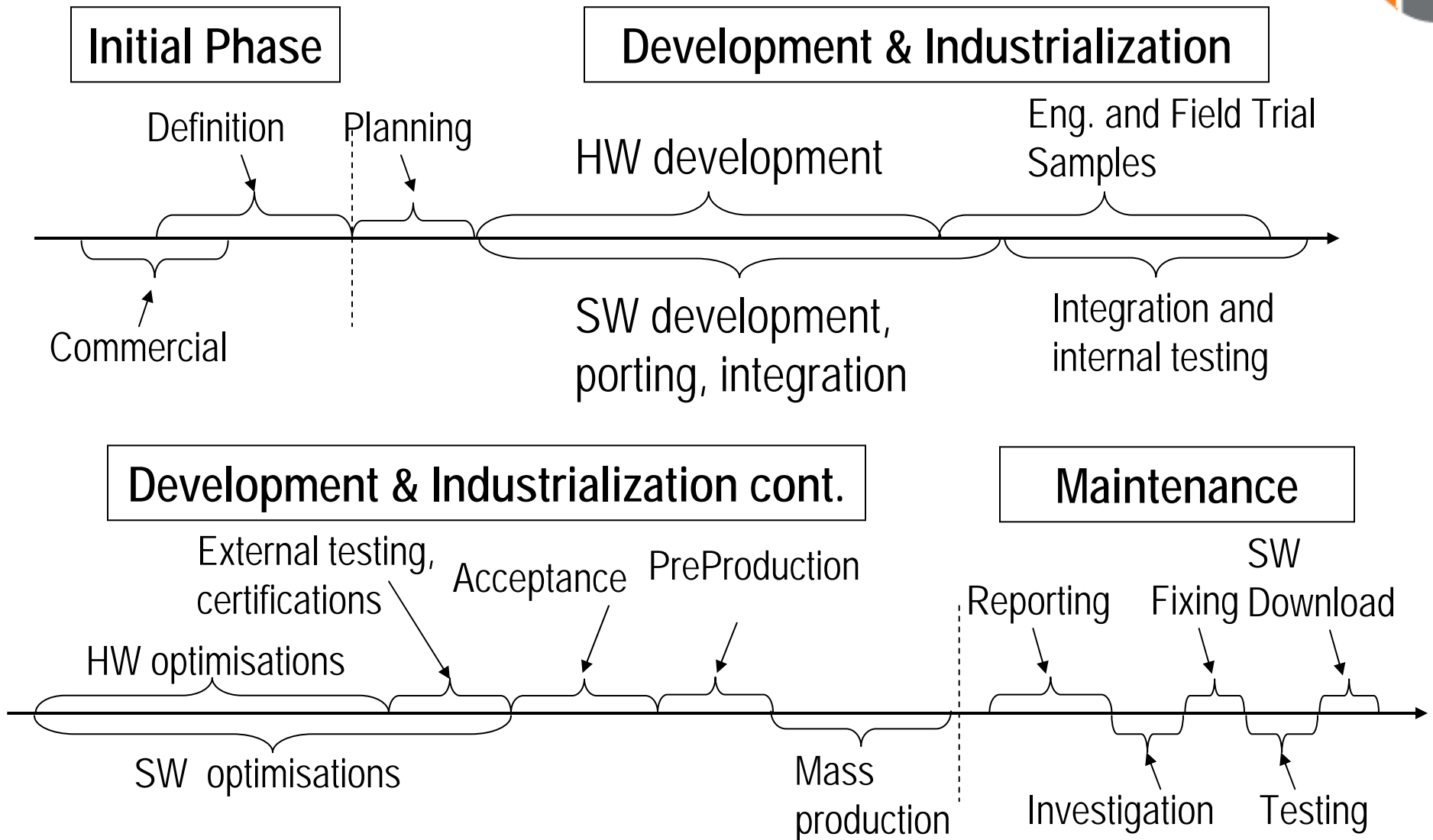
- Optimize overall project cost
- Optimize strain on working capital
- Maximize effective use of resources
- Highest quality of the final product
- Management of complexity
- Accurate management of time



# Project management organization



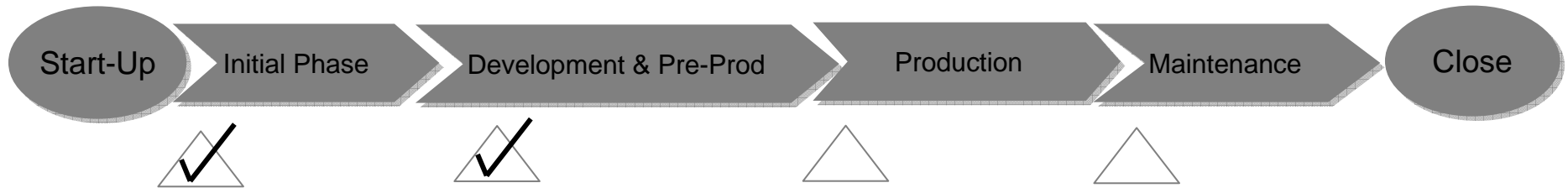
# Project Management Phases - Overview



# A process supported by tools



## Plan, Organize, Control



- Project Opening Form  
( Product Targets,...)

- Project Portfolio  
Management System  
( Shared Status Report)

- Project Opening Form  
( Product Targets,...)

- Product Check Plan  
(Milestones, Sign-off...)

- Product Cost Tracking  
(Cost Monitoring...)

- Inside / Outside On-line  
issues database shared

# One step beyond: project portfolio management system



PPMS Desktop Edition

Program Reports Project management Skins About

Projects overview: PMG Weekly

										Deadline		Workload [mw]			
ID	Unit	Name	PM	EM	DM	AM	Status	Orig.	Curr.	Red	Orig.	Used	Plan.		
1	1400	STB	Product 1	Name	Name	Name	Name	4	RUNNING	07-01-10	07-01-10	0	60	145	156
2	958	STB	Product 2	Name	Name	Name	Name	7	RUNNING	05-10-10	06-11-24	1	220	711	714
3	1304	STB	Product 3	Product 3	Product 3	Product 3	Product 3	9	RUNNING	06-09-15	06-10-20	0	250	466	495
4	1469	SE	Product 4	Name	Name	Name	Name	11	RUNNING	07-12-31	07-09-30	0	500	166	281
5	1305	STB	Product 5	Name	Name	Name	Name	13	RUNNING	06-11-15	06-11-15	0	350	543	594

[Status] In ('DEFINING', 'RUNNING', 'DONE') And Not [Category] In ('General R&D', 'SoM') And [PM] In ('b.bulczynski', 's.capek', 'm.duber', 'd.jaskiewicz', 'p.kedziorek', 'p.kowalik', 'd.leri', 'm.paku')

Details

1304, Hermes-5800S

EM: Name

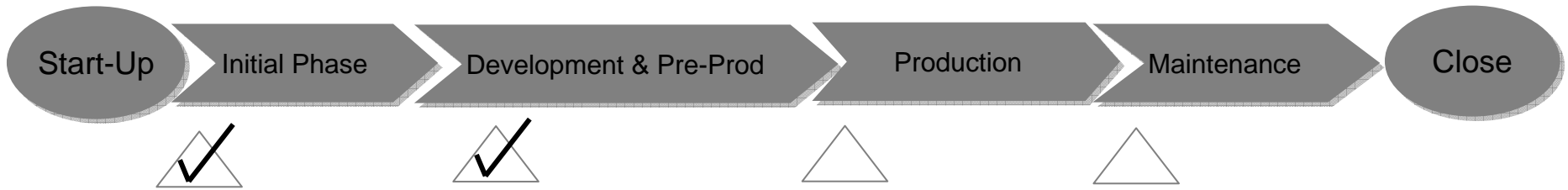
A single tuner satellite STB with MHP.  
New technologies: DVB-S2 (the first ADB large scale deployment) & H.264.

Week	Description
42	More time needed for testing software update with issues listed by Customer during acceptance. Deadline with Customer.
40	The project's deadline has been changed to week for consultation and agreement with the Customer, to allow time required to fix s/w functionality issues. The current version of software deployed in mass production has been accepted by the customer.
30	MPR software has been conditionally accepted. New version for full acceptance is under preparation and

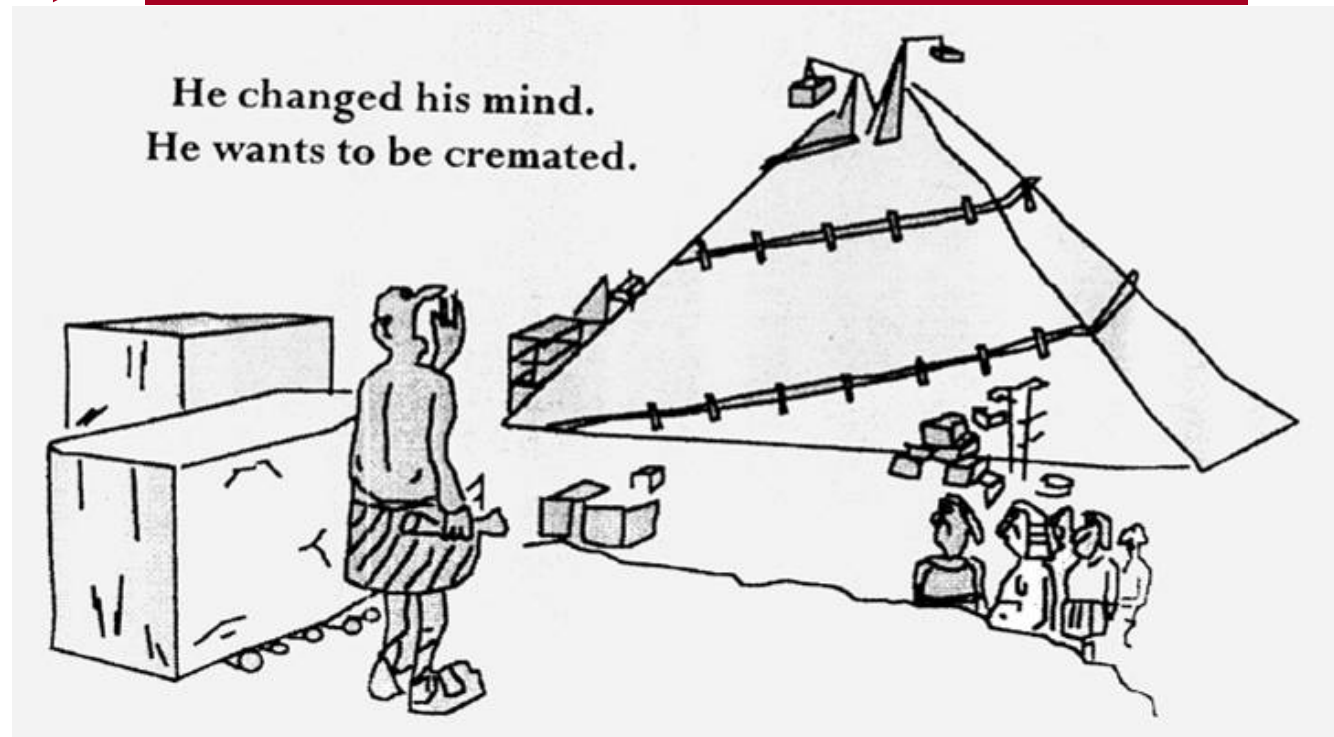
Deadline changes (5) | Risks (1) | Redflags (0) | Budget (total)

# A process supported by tools

Plan, Organize, Control

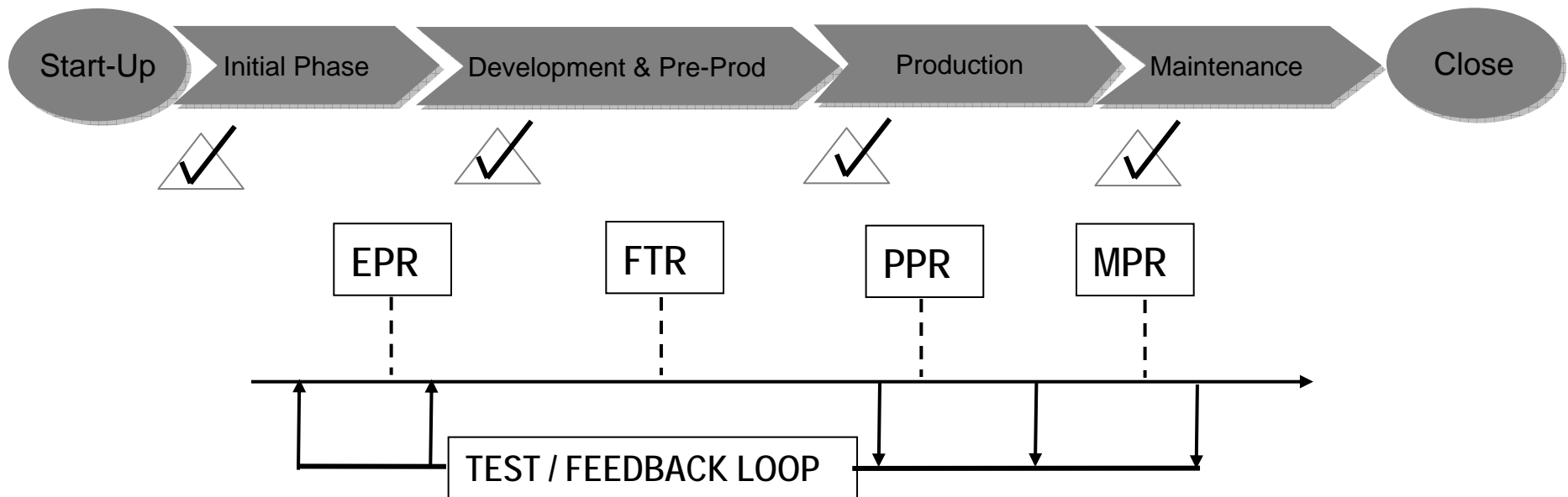


## Acceptance Versus Production start



# A process supported by tools

## Plan, Organize, Control



### Acceptance Versus Production start

- HW Acceptance Test Procedure (RF Parameters, Video,...)
- Field trial
- 3rd parties certification (CA, Middleware, Dolby, HDMI...)
- EMC / Safety
- Type Approval (CE Mark)

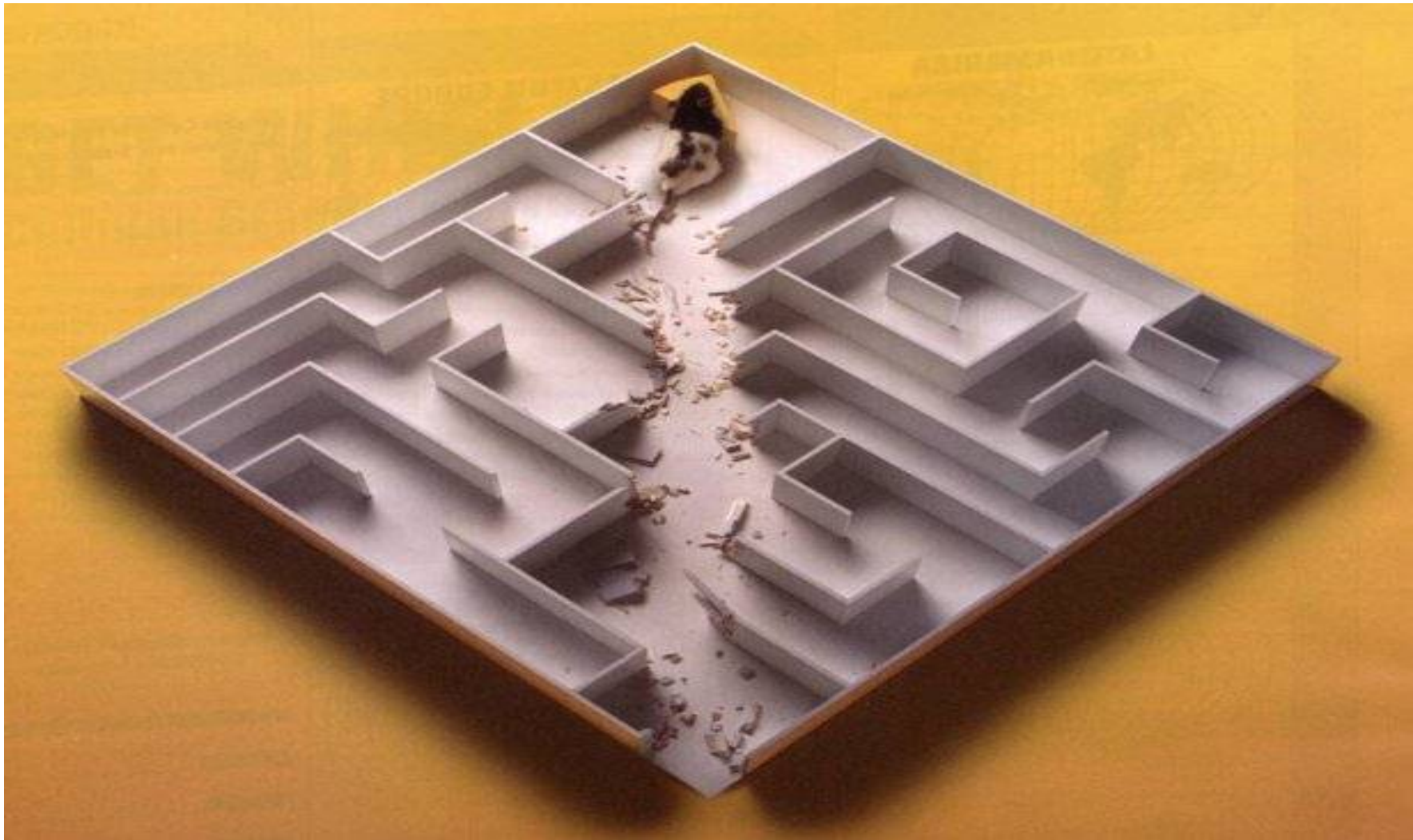
## Plan the Work...

## Work the Plan



- More than 60 customers
- More than 7 million STB deployed
- More than 250 successful projects
- More than 30 participants on average per project
- More than 400 engineers around the world

# Our ultimate project management challenge (take 2)





**Thank you**



## **Customer Care at ADB Group**

Roman Rauper  
Regional Director EMEA & US  
Customer Care Division

## Customer Care Division's Mission



To be recognized as outstanding after sales service organization of STB hardware and software service solutions.

Establish CCD as key competitive advantage and differentiator for ADB Group in the digital entertainment industry world wide.

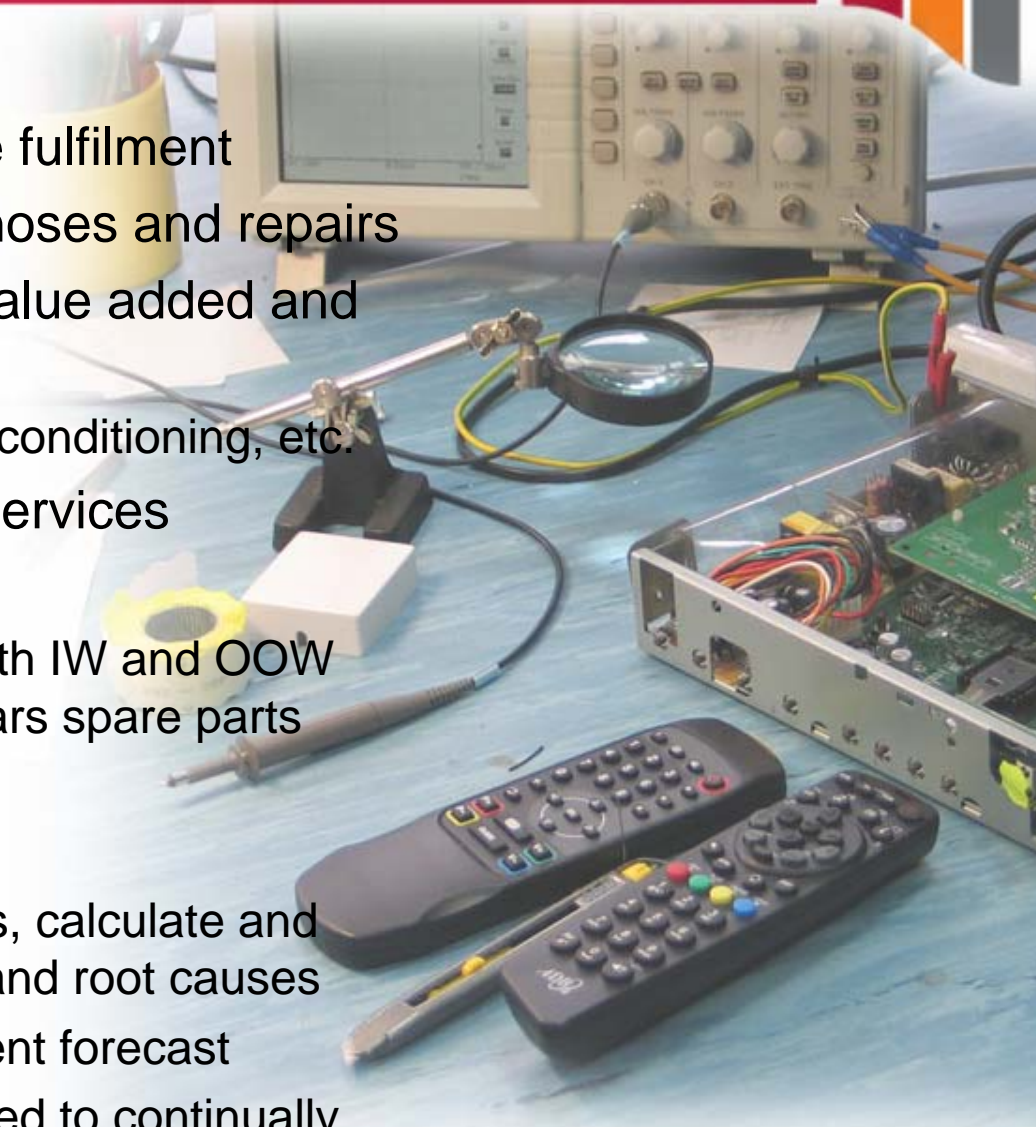
- Formed as a division in 2001, headquarters based in Geneva
- 22 direct employees worldwide
- Revenue contributor to ADB Group
- Service Portfolio of above 6.24 million STB
- Excellent Service Menu to enable customized service solutions
- Tailored, value-added services
  - warranty program management, logistics management, integrated fulfillment, technical support center, data processing and reporting, inventory management, etc.
- Transparent, state of the art service organization
  - Currently 9 Service Centers worldwide
  - Using top-class business tools & methods (BSC, Lean, WCM practices, ...)

# Global Presence



# CCD Main Duties

- Technical and logistical service fulfilment
- Perform efficient and fast diagnoses and repairs
- Fulfil customer's requests for value added and out of warranty services
  - Screening, Refurbishment, Reconditioning, etc.
- Coordinate SW Maintenance Services
- Maintain inventory
  - Control of all parts used for both IW and OOW repair services to ensure 5 years spare parts policy
- Data collection and analysis
  - Collect monthly service reports, calculate and analyse products' failure rate and root causes
  - Prepare spare parts requirement forecast
  - Assemble historical data needed to continually improve ADB's products and services

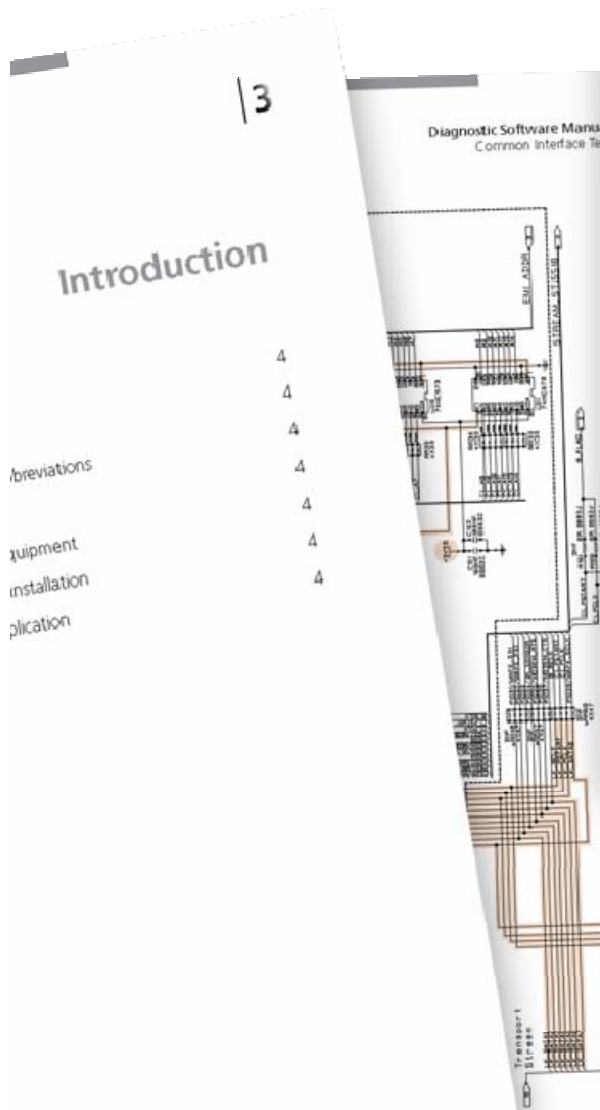


How to connect multiple suppliers to create an effective reverse supply chain solution?

## CCD Connects



# Diagnostic Software



ADB Diagnostic Tool  
Platform: [Dropdown]  
Documentation: [Icons]  
Serial No: 01 0400332110  
On-Line Manual Index: T72 Auriga Online Manual  
Schematic: Processor

Schematics:  
- CA and RS232  
- EML  
- Front Panel  
- Keys and Led Display  
- Nodes  
- Power and Reset  
- Processor  
- SCARTs  
- TVT  
- SMI Memory  
- Tuner and Demodulator

Messages:

Time	Test ID	Message
Wed Apr 26 15:11:29 2004	WinMsg01	SW entered
Wed Apr 26 15:11:38 2004	WinMsg01	code_proc.lku module started
Wed Apr 26 15:12:21 2004	WinMsg01	Waiting for Processor respond (65sec.)
Wed Apr 26 15:12:26 2004	WinMsg01	Waiting for Processor respond (70sec.)
Wed Apr 26 15:12:31 2004	WinMsg01	Waiting for Processor respond (75sec.)
Wed Apr 26 15:12:36 2004	WinMsg01	Processor or serial communication Error
Wed Apr 26 15:12:36 2004	WinMsg01	code_proc.lku module finished
Wed Apr 26 15:16:24 2004	WinMsg01	uart_test.lku module started
Wed Apr 26 15:28:29 2004	WinMsg01	SW entered

C:\Program Files\ACEDiagSoft\Res\T72\_ALR\doc\schematic\_processor\_body\_index.html

Including build-in and printed platform documentation with schematics.

# Preferred by our Customers



Telefonica

PHILIPS

AUSTAR.  
you'll love what's on

auna

telenet

Hills.  
Antenna &  
TV Systems

TELECLUB  
TFC

HOT

Euskaltel  
lo que nos une  
batzen gaituena



cablecom



FASTWEB  
un passo avanti

yes.

UBC

StarHub

CNS

# Our Unique Sales Proposition



- Know-how
- Service Focus
- Complete Service Menu
- Customized Solutions
- Responsive Organization
- Industrialized & scalable Processes
- Cost Competitiveness
- Global Presence
- Leading with Quality
- Reporting Capability

**A KEY TO ADB GROUP'S CUSTOMER-ORIENTED POSITIONING...  
...AND A BUSINESS**



**Thank you**