

# ACCELERATE

*E-Health:*

**From hospital to the nation-wide system**

Martin ŠEBEK, Health Care Executive, HP Enterprise Services

Tomaš MLADEK, Board Member, IZIP

Portorož, 11.11.2010



# Agenda

- HP focus in Health care
- HP capacity and capability in the world and in our region
- HP view on healthcare ecosystem
- From hospital to the nation-wide system
  - From basis HIS to Digital Hospital and beyond
  - Health insurance ecosystem
  - Nation-wide health care ecosystem
  - Economic Impact Evaluation
- Q & A



# HP - Health care funding customers

## Industry footprint

More than 10,000 HP professionals are dedicated to supporting healthcare clients worldwide – including physicians, nurses, pharmacy, and other clinical staff.

## Government Health Insurance

- HP is recognized provider of Health insurance solution in CEE delivering and supporting large reformed health care market
  - Czech Republic & Romania
  - Slovakia
- HP is the largest provider of Medicaid claims processing in the US
  - Our claims / membership administration systems are implemented in 21 states
  - Administering \$95 billion in US Medicaid benefits for more than 20 million recipients and \$9.2 billion in U.S. Medicare benefits annually
  - Processing over 1 billion U.S. Medicaid claims and 316 million U.S. Medicare fee-for-service claims annually.

## Commercial health insurance

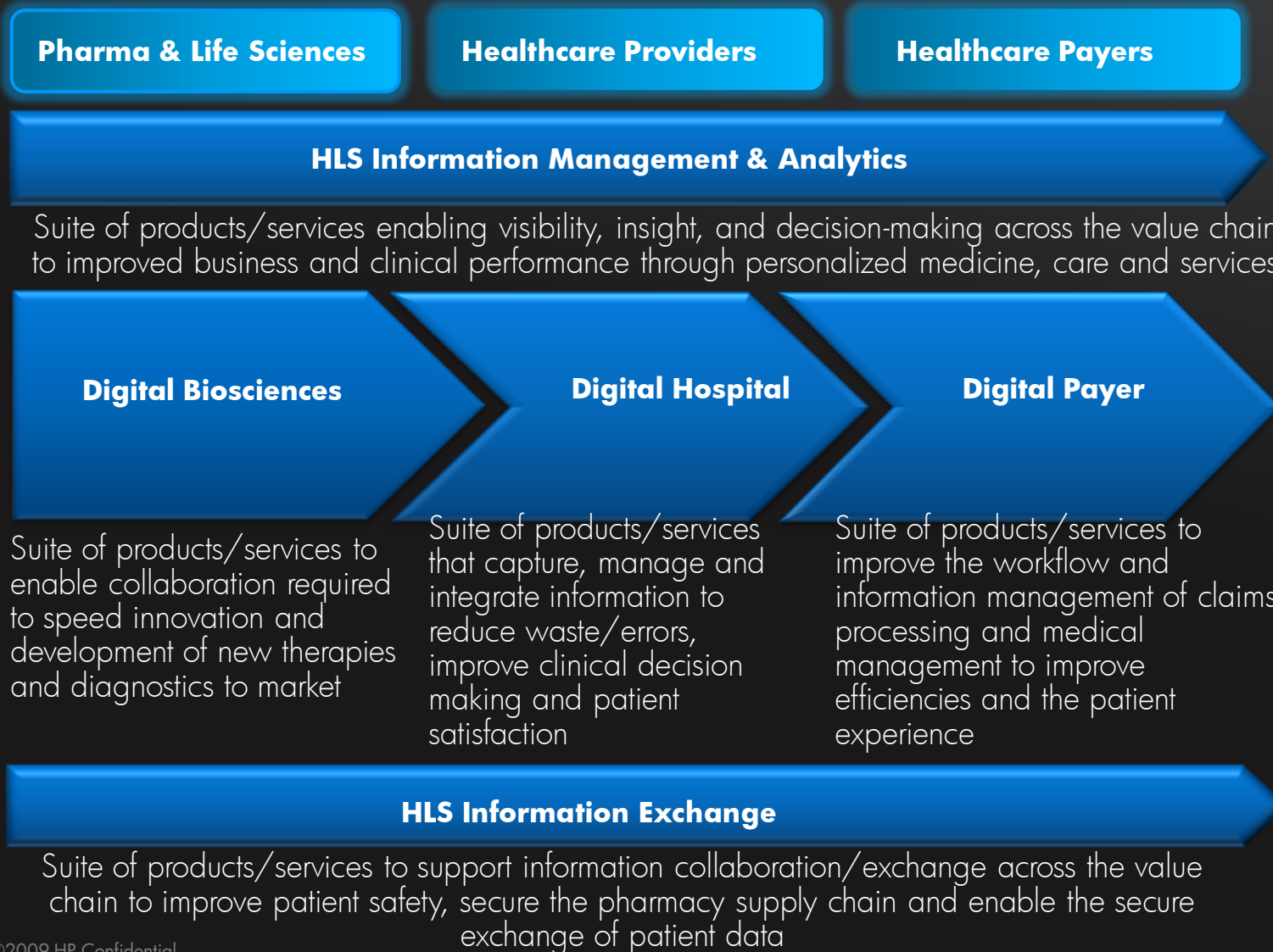
- HP application solutions support over 10 million subscribers, processing 300 million transactions annually



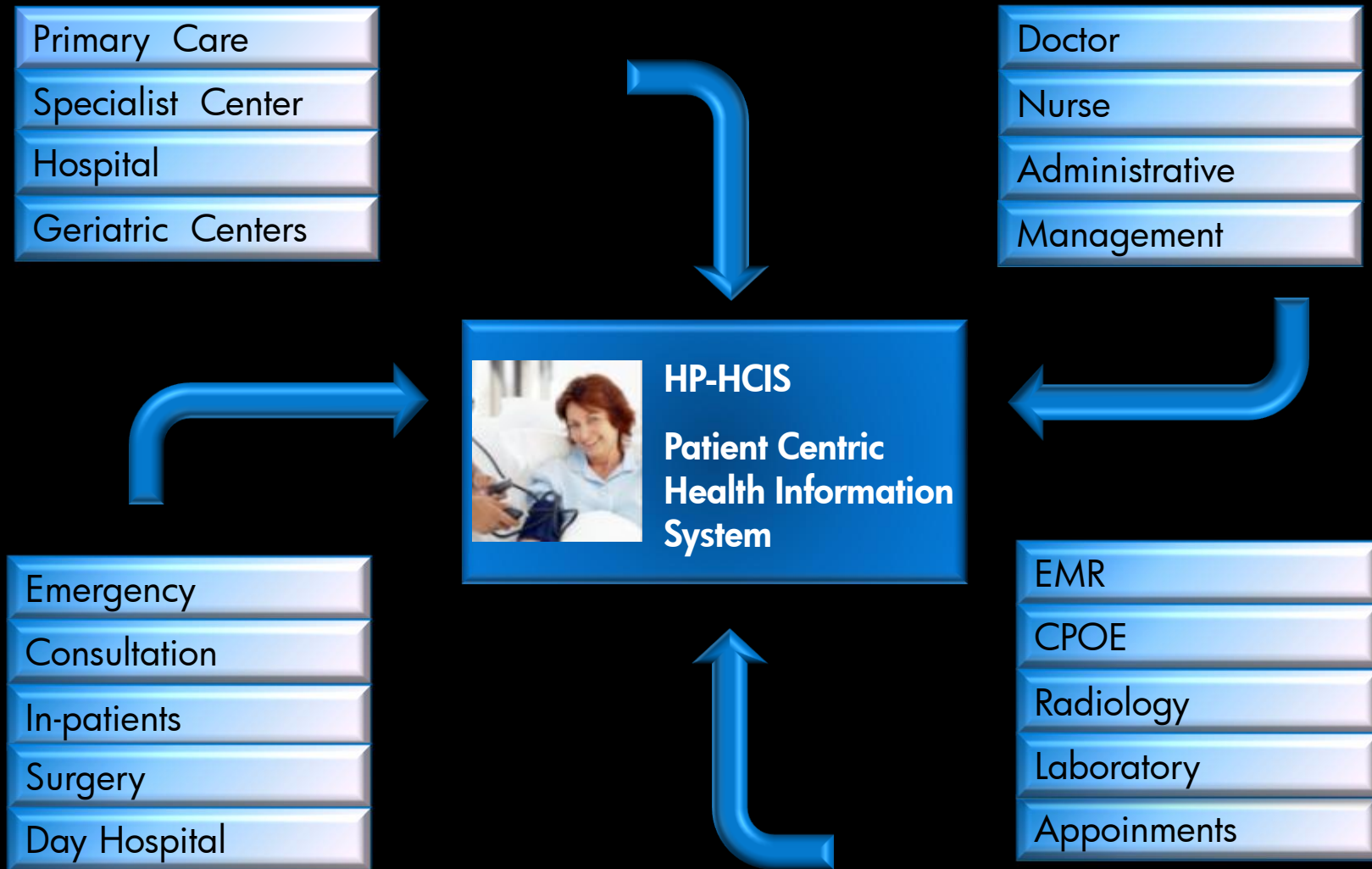
Romania National Health Insurance House



# HP view on health ecosystem



# A powerful, easy to use, flexible Health Information System Connecting the Digital Health Community with the patient at the center

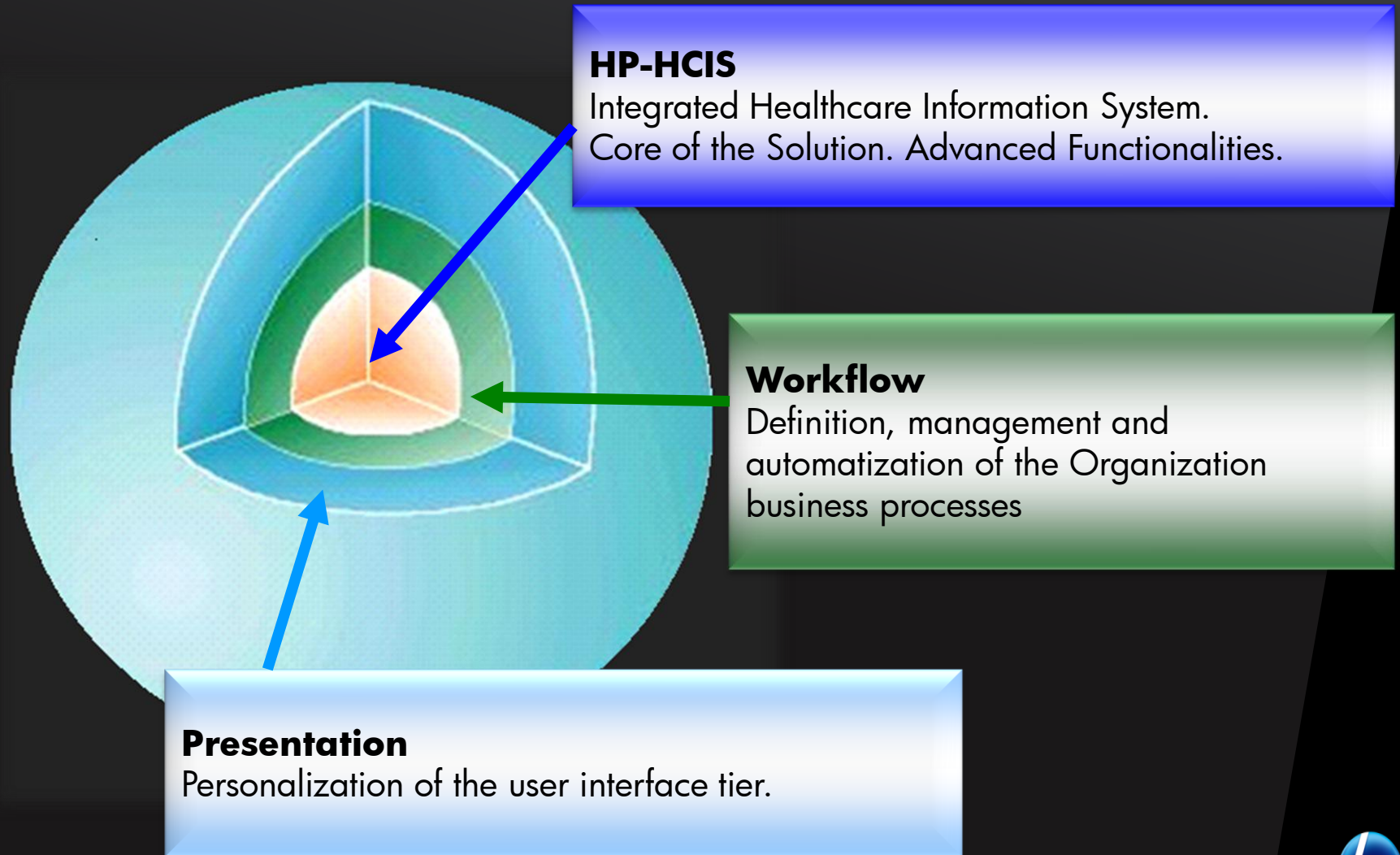


# From HIS to HCIS: Evolution along three axes

	HP-HIS.1 Early 1990's	HP-HIS.2 Mid - 1990's	HP-HCIS 2000's	<i>HP-HCIS</i> 2010's
<b>Scope</b>	A single Hospital	A single Hospital	A complete Care Delivery Organization	<i>Home care and telemedicine</i>
<b>Functionality</b>	Administrative Functions (ADT system, scheduling & appointment...)	+ EPR, Orders & Results, Nursing Care plans	+ e-prescribing, GP support, clinical pathways (basic)	<i>Clinical decision support, clinical pathways &amp; enhanced workflow</i>
<b>Technology</b>	Dumb terminals, UNIX servers	Client-server, 2-tier, GUI	Web-based, J2EE,N-tier	SOA SaaS

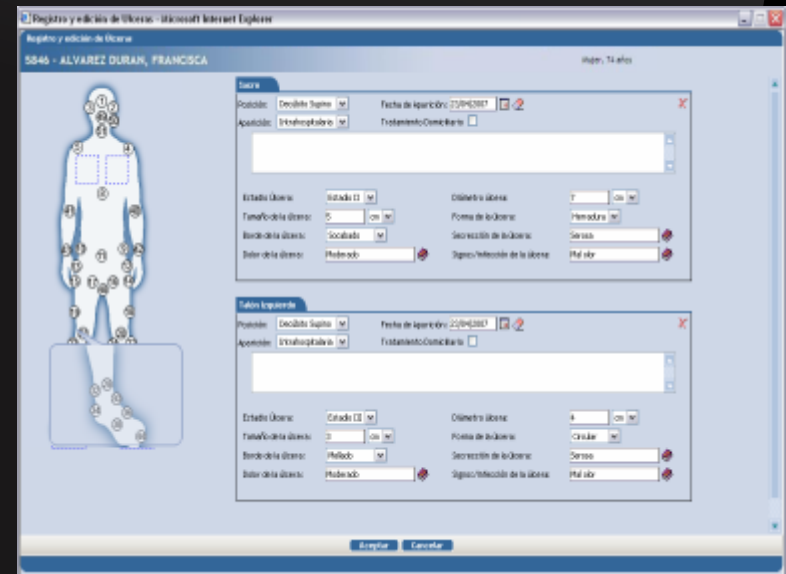


# HP-HCIS: Conceptual model



“We wanted to align our IT department with our business objectives to make all its processes run more efficiently, reliably, and securely so that healthcare workers can offer better care to our patients. We turned to HP to provide enterprise solutions at every level: consulting, software, services, and hardware”

*Miguel Cabrer  
Son Llàtzer Hospital  
IT Manager*





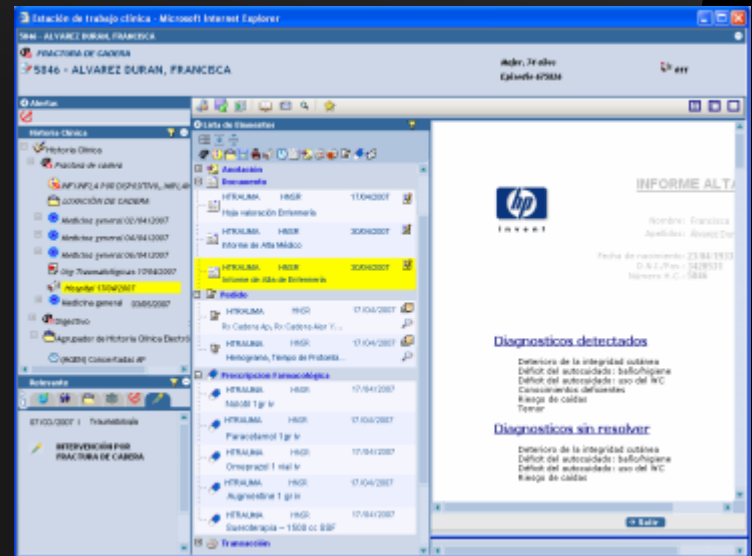
“Using HP-HCIS, we have a unique management and visualization of the patient's record, regardless of the access point”.

*Xavier Oliva*  
*Hospital of Inca*  
*CIO*



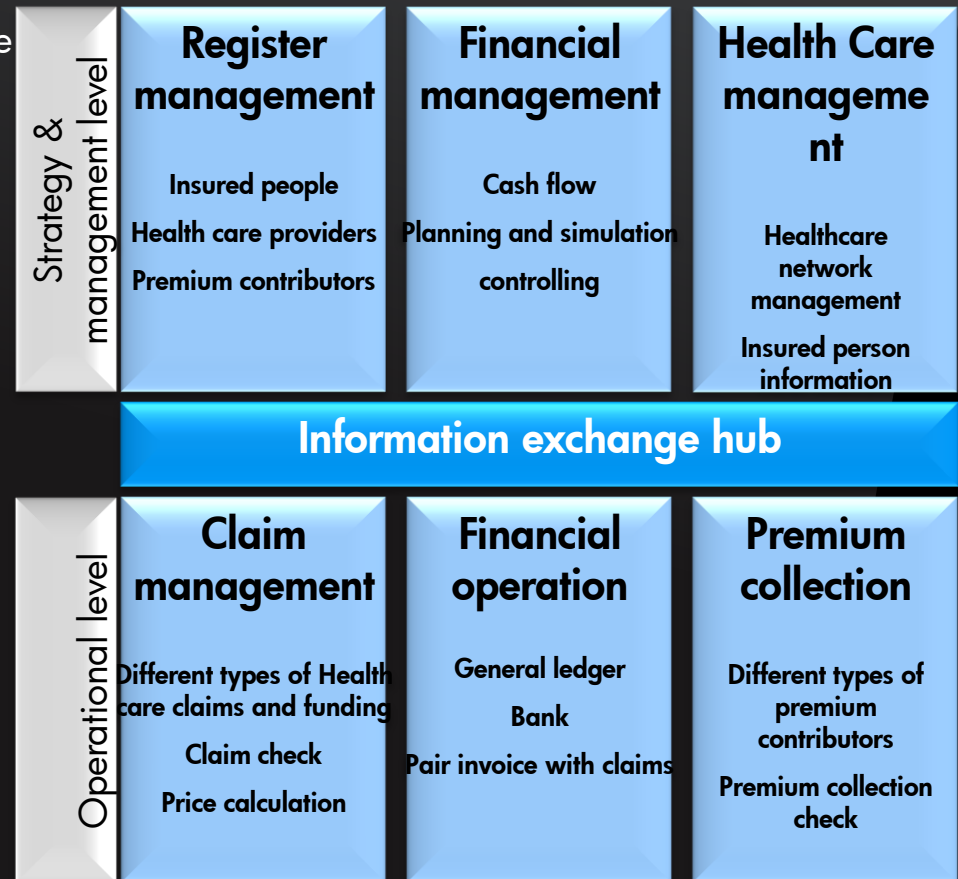
“With HP Healthcare Information System, we have obtained the full integration of the clinical and patient care information, ensuring it can be accessed whenever and wherever needed. This was especially important with the opening of new hospital subsidiaries in different locations”.

*D. Juan Ramon Martin*  
*Empresa Pública Hospital Costa del Sol*  
*ICT Director*

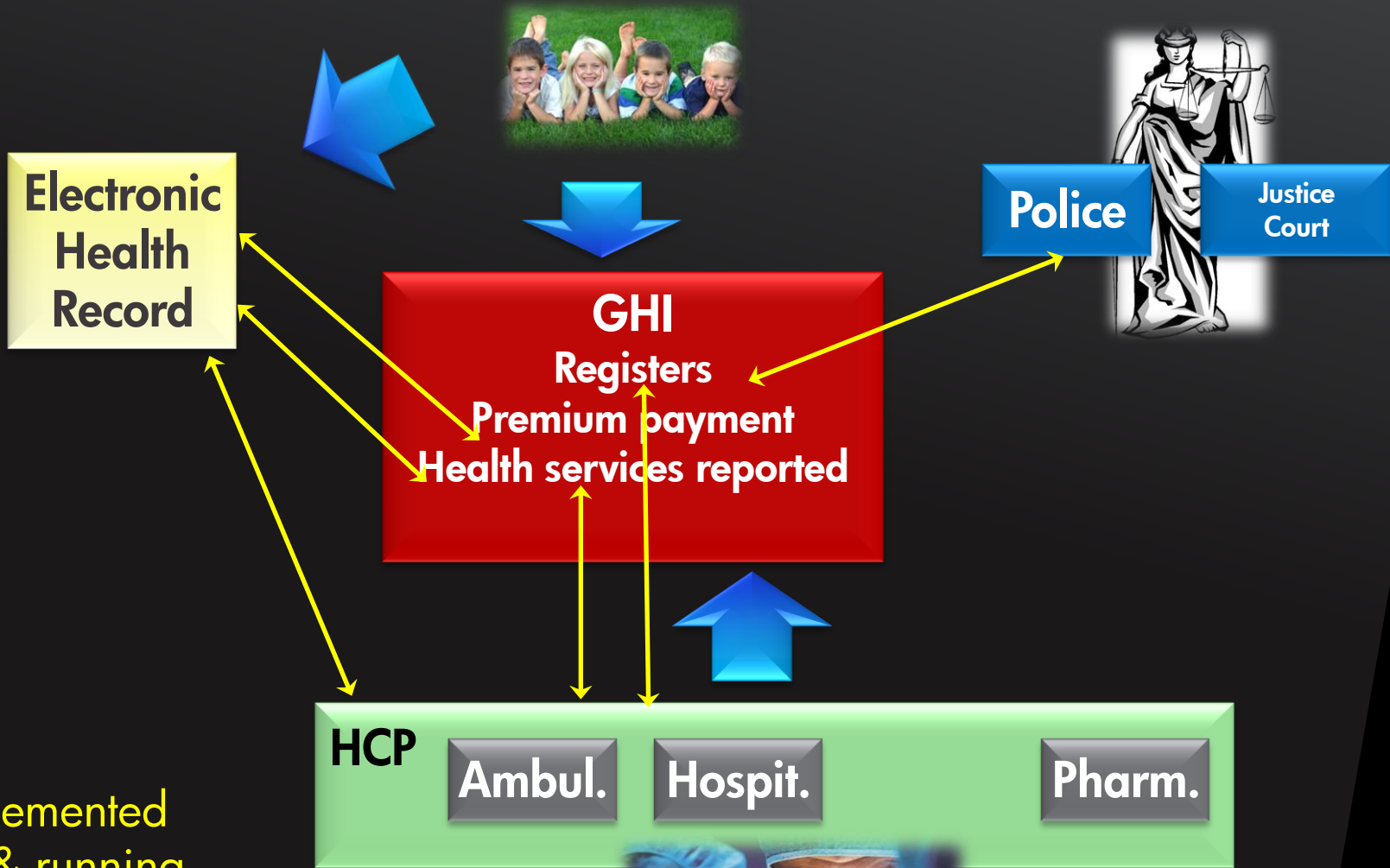


# Health insurance ecosystem

- Since 1991, HP is the prime contractor for the National Health Insurance system, supporting the central office in Prague, 14 regional offices and 77 Districts.
- HP has developed and evolve the various components of the solutions over the years, and provided along
  - Business process redesign consulting, application alignment, users training
  - Operation support
    - Income Part = premium collection
    - Outcome Part = health care funding
    - Financial Management
    - Communication and data exchange
  - Support client management in negotiation with external parties
  - Registers
    - Register of all insured people
    - Register of health care providers
    - Register of premium payers
  - WAN Application Software



# Info exchange facilitation and management



Implemented  
Up & running  
Further extension

# Romania – National health insurance house

- Romanian National Health Insurance House (NHIH) is the public institution that manages the social health insurance fund in Romania (population of ~22 million and ~27 000 medical and pharmaceutical service providers)
- HP designed, built and delivered a nation-wide integrated IT system for the Romanian National Health Insurance House (NHIH). The system went live in Nov 2008, marking the entrance into a 13-years maintenance phase which includes hardware maintenance and software updates to allow NHIH to comply with the changing legislation in the health insurance sector in Romania
- The main components of the system are:
  - **IT infrastructure**
    - ✓ Servers, storage, printers, workstations deployed in 42 county locations in Romania, the NHIH headquarters and a Disaster Recovery site
    - ✓ The implementation of a private Wide Area Network (WAN) used by this system
  - **Integrated Enterprise Resource Planning (ERP) sub-system**
    - ✓ Customized for use according to the requirements of NHIH
  - **Custom built software application**
    - ✓ Covers all aspects of the health insurance business of NHIH
    - ✓ Available at central (NHIH) level, county (CHIH) level and medical and pharmaceutical provider level
  - **Help-desk**
    - ✓ To allow for the efficient implementation of all NHIH functions
  - **End-user training and on-site assistance**

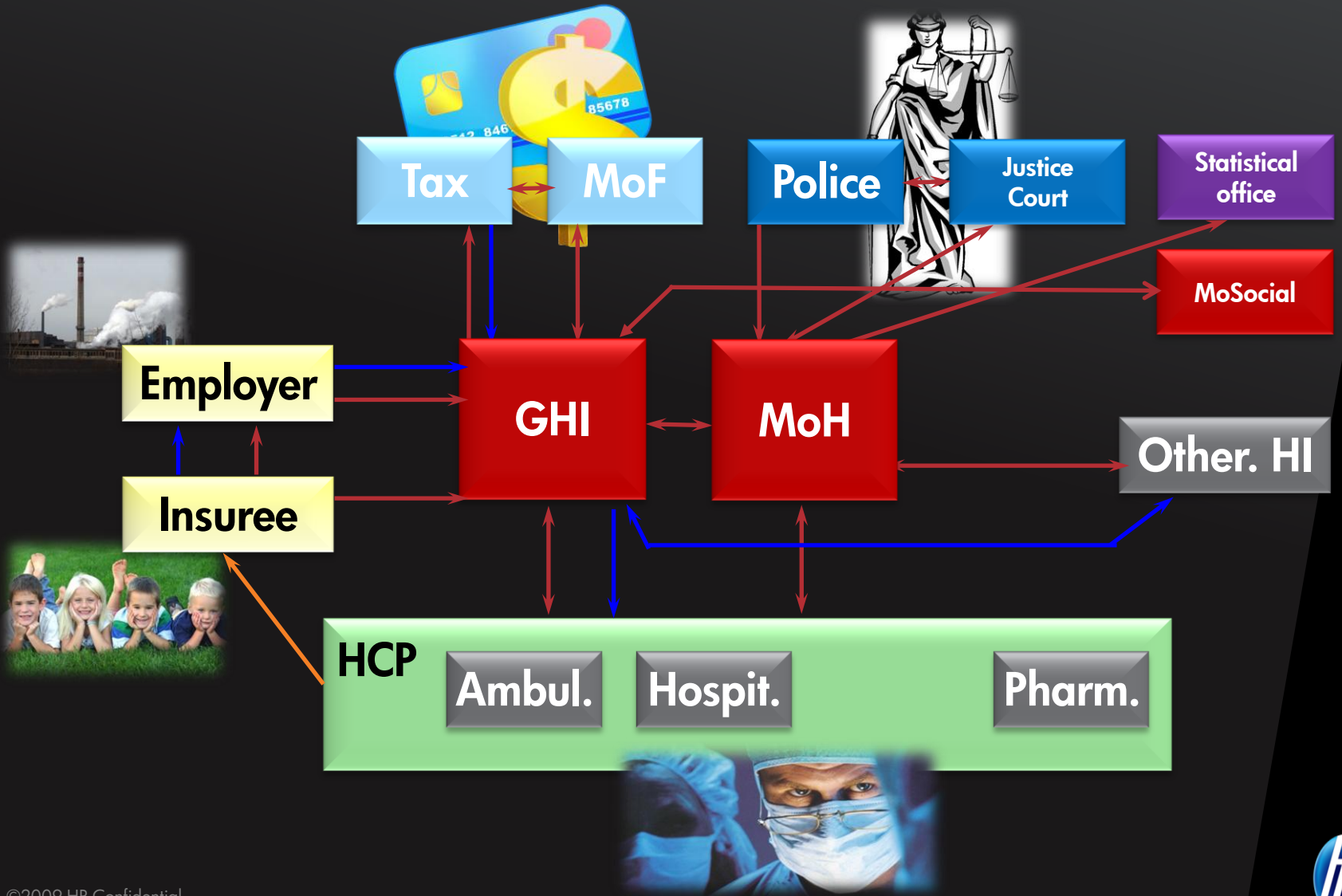


# CZ – Health insurance organization (VZP)

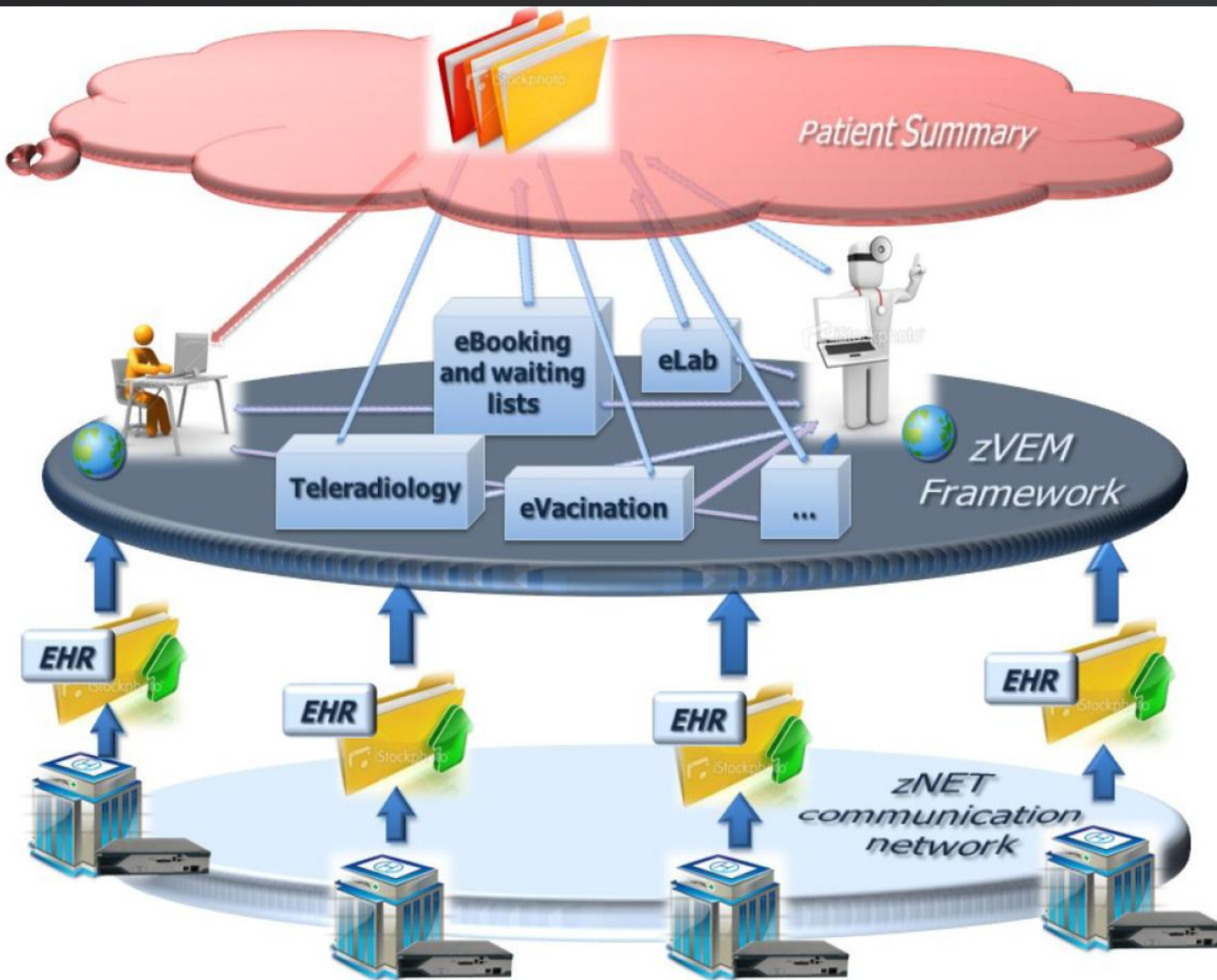
- Established 1992 based on special law
- Provide health care funding for all CZ inhabitants who do not decide for private health insurance, information hub and facilitation within health sector
- Organization Management
  - HIO supervisory board, General Manager elected by board
  - Separate financial management from government budget
- Territory organization
  - Follow country government structure
  - Central office -> management, strategy, rules, quality
  - District organization -> operation
- Principles of free choice for people
  - Select health care provider
  - Select health insurance company



# Nation-wide healthcare ecosystem



# Project overview: eZdravje (eHealth)



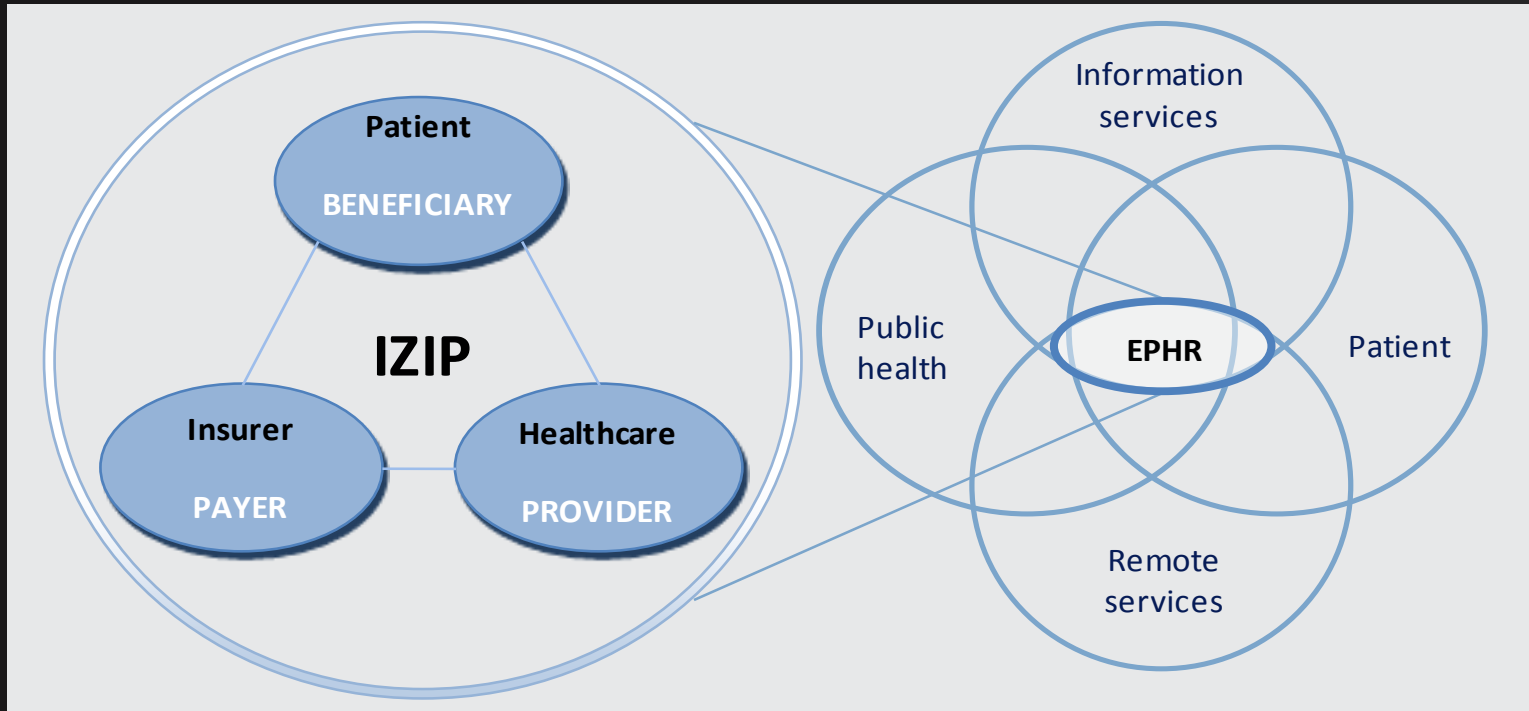


- Provide **concrete cross border services** that ensure safe, secure and efficient medical treatment for citizens when travelling across Europe
- Focus on services close to the patient:
  - **Patient Summary for EU Citizens**
    - Occasional Visit
    - Regular Visit
  - **ePrescribing for EU Citizens**
    - Medication ePrescription
    - Medication eDispensation
    - Build on existing National eHealth Projects and use experiences and knowledge from all Member States

# EPHR - IZIP System

National electronic patient-centred health record (EPHR) system that provides an access to and the exchange of comprehensive medical and related information between:

- ✓ patients
- ✓ health insurance companies
- ✓ health care professionals and HPOs



# Current Number of Registered Users

Figures up to 10th Nov 2010



**Clients**

**2 268 884**



**Medical data entries**

- over 10 millions direct entries via harmonized national and "European" interfaces
- Over 40 millions of prescriptions, 100 millions procedures, ...etc



**Health care professionals**

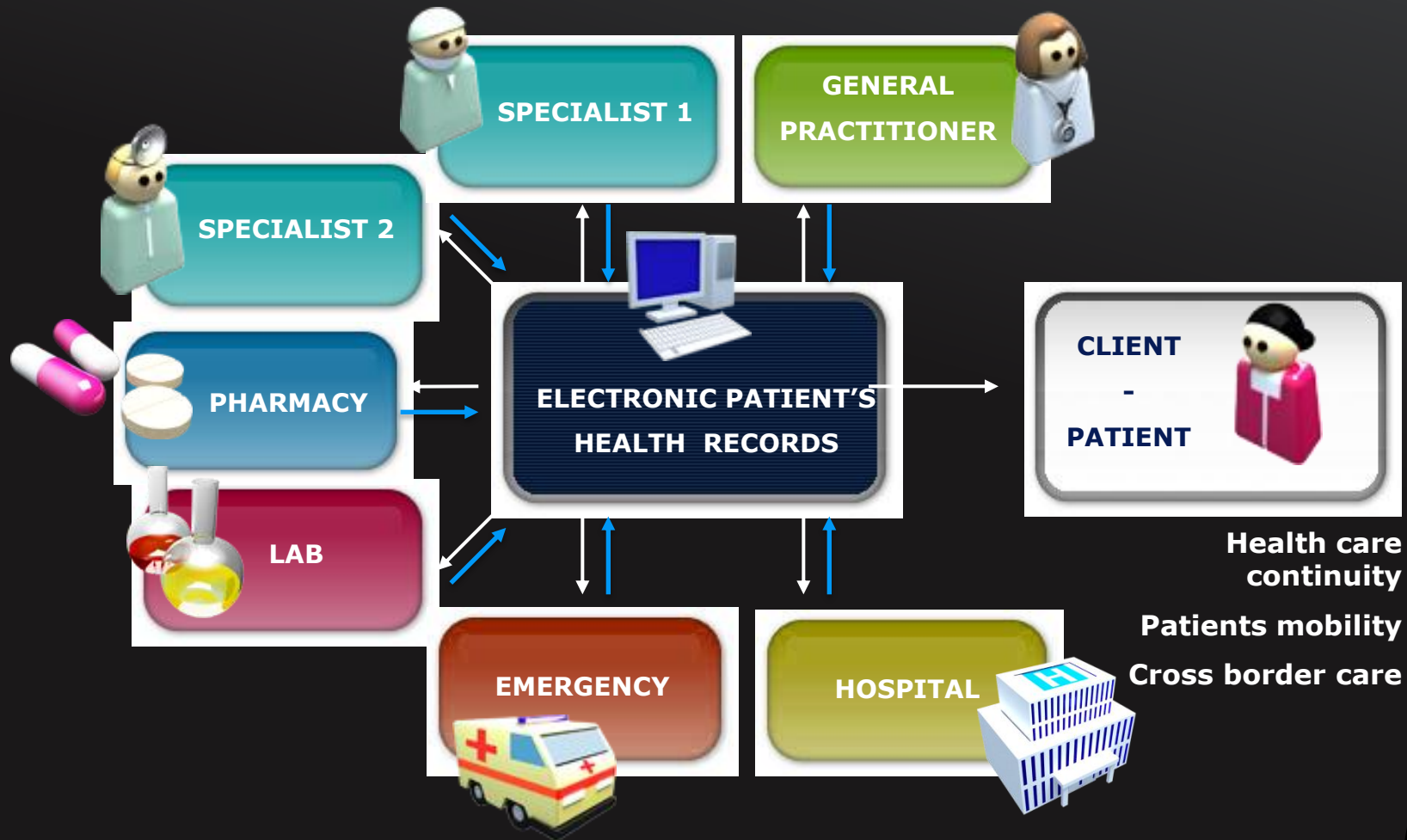
**15 972**



**Hospitals**

**99**

# Patient Centered Philosophy

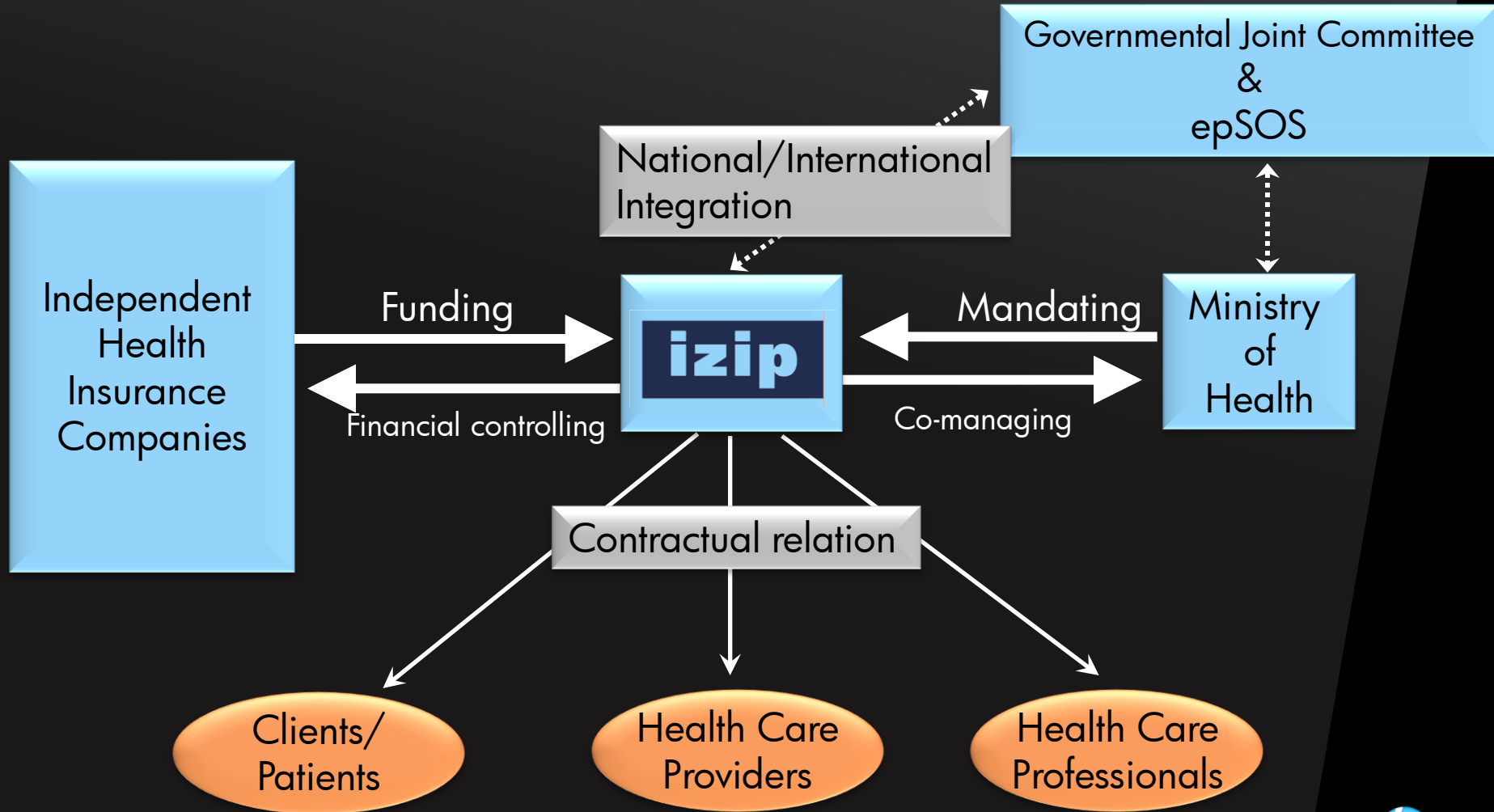


# Teaming of Medical, IT and Economic Experts

## The role of the HP in IZIP

- Electronic services integration
- Business consultation in Health insurance and business activities of the General Health Insurance Fund of the Czech Republic (VZP)
- Data exchange between VZP and IZIP
- On line validity control of the VZP contracts with health care providers
- On line check up of validity of patient registration to Health insurance company
- Premium payment statement

# in Czech Health Care System



# Economic Impact Evaluation

By European Commission

**Empirica Communication and Technology Research**

**TanJent Consultancy, UK**

Kadris, France

Jagellonian University, Poland

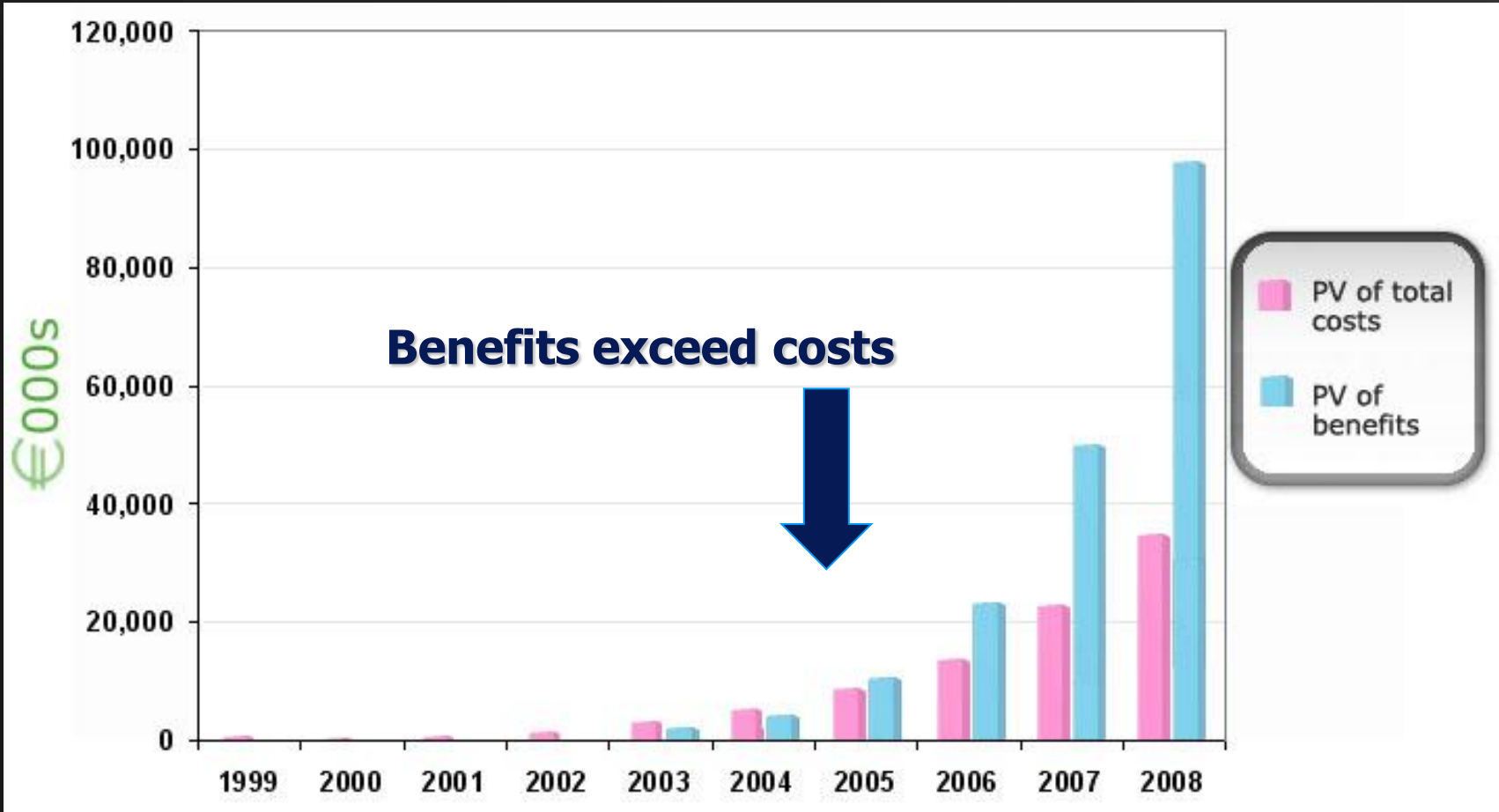
ESYS Consulting, UK

[www.ehealth-impact.org](http://www.ehealth-impact.org)

[http://ec.europa.eu/information\\_society/activities/health/docs/events/opendays2006/ehealth-impact-7-5.pdf](http://ec.europa.eu/information_society/activities/health/docs/events/opendays2006/ehealth-impact-7-5.pdf)

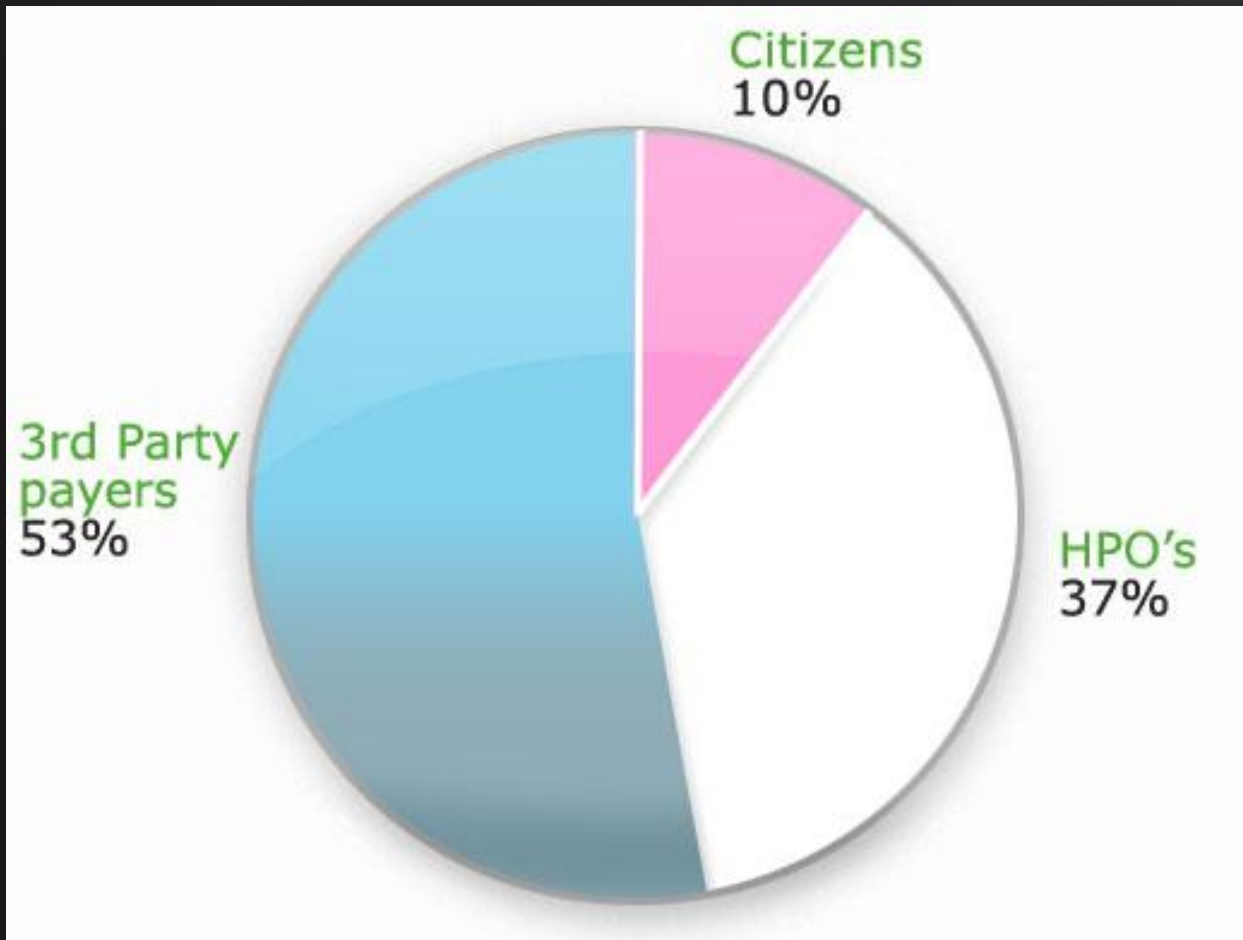


# Annual Costs and Benefits





# Distribution of Benefits



**Health Care  
Providing  
Organizations**

# Summary I

## of Economic Performance



- First year in which benefits exceed costs: 2005
  - 3 years after start of full operation
  - 6 years after start of planning
- First year in which cumulated benefits exceed cumulated costs: 2006
  - 7 years after start of planning
- Estimated net benefit in 2008: € 60 million

# Summary II

for Citizens

- The citizen is **the owner** of the information
  - Can see all his own documents
- The citizen as **gatekeeper**
  - Decides which professionals can access
- Access to health data 24/7, at any location
- **Better, faster and safer:**
  - Less unnecessary examinations
  - Avoided undesirable drug interactions
- Login by ID, PIN and personal password
  - optional digital signature, GSM token, finger print



# Summary III

for Health Care Professionals

- Access to complete health data (with patient's consent)
  - At the point of care
  - At the time of care
- Speed and accuracy of information exchange
  - Avoiding delays
  - Minimizing errors
  - Sharing information
- Continuing where the last treatment ended
- Financial contribution to motivate health professionals for data submission
- Login by ID, PIN and password
  - optional digital signature, GSM token



# Q&A



# Kansas Health Policy Authority

State department Minimize Cost and Maximizes Health Care Impact

“HP provides the State of Kansas with a technological solution capable of meeting our goals to improve access to healthcare in a cost-effective, efficient way.”

— Scott Brunner, Director, Kansas Health Policy Authority



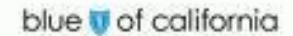
Objective	Approach	Results
<ul style="list-style-type: none"><li>• Kansas needed to revamp its Medicaid Management Information System (MMIS) to meet federal regulations</li></ul>	<ul style="list-style-type: none"><li>• HP designed multiplatform MMIS to meet standards, improve accessibility</li><li>• HP simplified and streamlined Kansas' Medicaid-related administrative processes, enabling the agency to exchange information with healthcare providers electronically and in real time.</li><li>• HP' interChange MMIS arms the agency with enhanced capabilities including many new Web-based applications</li></ul>	<ul style="list-style-type: none"><li>• The system provided the flexibility to update and adapt processes to Kansas' rapidly changing healthcare environment.</li><li>• Administrative costs dropped to 1.9 percent of benefit dollar expenditure in the first year alone.</li><li>• HP solution dramatically improved efficiency, processing Medicaid claims</li></ul>



# Blue Shield of California

## Addressing compliance issues while reducing processing and payment times by 15 percent

“It has been a challenging and exciting time and the HP team has come through for Blue Shield in a big way.”



— Ben Bell, Director of Integrated Data Management, Blue Shield of California

Objective	Approach	Results
<ul style="list-style-type: none"><li>• BSCA needed to reduce processing costs and time as well as enhance its quality and customer service.</li><li>• When faced with an increase in Medicare insurance claims, BSCA experienced increased cost because of traditional paper-based and labor-intensive methods of microfilming and archival</li></ul>	<ul style="list-style-type: none"><li>• HP offered BSC both HIPAA expertise and experience with SeeBeyond’s integration technology</li><li>• Five healthcare industry consultants became a part of BSC’s implementation team. The company delegated design and development of specific transaction sets to HP, enabling BSC to focus its efforts on the more complex enrollment and claims transactions.</li><li>• HP’ experience integrating real-time interactions with mainframe systems helped speed development</li></ul>	<ul style="list-style-type: none"><li>• Development was completed in time to begin federally mandated testing and to meet final implementation deadlines.</li><li>• Increased member satisfaction with more believing they got the right information on the first attempt and shorter wait times.</li><li>• BSCA has successfully improved its quality, timeliness, and cost-effectiveness to its customers. With the HP imaging solution, BSCA improved the control of its claim processing function and increased the clerical staff’s productivity.</li><li>• BSCA enhanced its customer service with quicker, more efficient access to claim files. Out of file conditions no longer exist because paper claims no longer need to be retrieved.</li><li>• Optical disk storage has reduced the costs associated with storage and retrieving paper documents.</li></ul>

# General Health Insurance Company Czech Rep.

Since 1992 VZP relies on solution and services from HP



Challenge	Solution	Results														
<ul style="list-style-type: none"> <li>VZP was established in late 1991 by the Czech National Council to replace the previous „government budget" centralized health-care model.</li> <li>Phase by phase, but quickly, it needed to start-up and optimize the operation of registration, collection, payments, statistics and financial management of the Health Insurance System.</li> <li>Next to the rich functional requirements, VZP needed to prepare for the management of huge numbers (actuals in 2008): <table border="0" data-bbox="92 1092 637 1310"> <tr> <td>Insured Persons</td> <td>7,500,000</td> </tr> <tr> <td>Persons in Central Register</td> <td>10,000,000</td> </tr> <tr> <td>Health Care Providers</td> <td>18,000</td> </tr> <tr> <td>Health Care Bills (Hospitals)/Yr</td> <td>2,000,000</td> </tr> <tr> <td>Health Care Bills (Ambul.)/Yr</td> <td>40,000,000</td> </tr> <tr> <td>Drug Prescriptions / Year</td> <td>48,000,000</td> </tr> <tr> <td>Premium Payers</td> <td>222,000</td> </tr> </table> </li> </ul>	Insured Persons	7,500,000	Persons in Central Register	10,000,000	Health Care Providers	18,000	Health Care Bills (Hospitals)/Yr	2,000,000	Health Care Bills (Ambul.)/Yr	40,000,000	Drug Prescriptions / Year	48,000,000	Premium Payers	222,000	<ul style="list-style-type: none"> <li>In 1992 HP has been selected by VZP to set up the entire solution and computer systems to handle health care for the Czech Republic.</li> <li>As a prime contractor since then, HP set up, maintains and manages the entire solution and infrastructure for VZP.</li> </ul> <p><b>Components of the solution include:</b></p> <ul style="list-style-type: none"> <li>Operation support <ul style="list-style-type: none"> <li>Income Part = premium collection</li> <li>Outcome Part = health care funding</li> <li>Financial Management</li> <li>Communication and data exchange</li> </ul> </li> <li>Management support</li> <li>WAN Application Software</li> <li>Registers <ul style="list-style-type: none"> <li>Central register of all insured people (population of CZ)</li> <li>GP &lt;-&gt; insured person</li> <li>Premium payer &lt;-&gt; insured person</li> </ul> </li> <li>Complete IT Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>With more than 6.5 million clients, VZP CR has been operating successfully for over 15 years and become the basic pillar of the Czech health care system. VZP is now the biggest health insurance company in the Czech Republic.</li> <li>VZP is a partner of renowned expert associations and is a highly regarded member of the Association of International Non-profit Making Health and Sick Benefit Insurance Companies (Association Internationale de la Mutuallité).</li> <li>Continuous cooperation HP and VZP expand current solution into on-line system building VZP solution as a center of future e-Health in a country</li> </ul>
Insured Persons	7,500,000															
Persons in Central Register	10,000,000															
Health Care Providers	18,000															
Health Care Bills (Hospitals)/Yr	2,000,000															
Health Care Bills (Ambul.)/Yr	40,000,000															
Drug Prescriptions / Year	48,000,000															
Premium Payers	222,000															





# Humana Inc.

## Healthcare Insurer Boosts operational efficiency and customer satisfaction

“We expect to reduce the number of phone calls to our center by providing relevant, responsive self-service for plan participants and their doctors — lowering costs and improving customer satisfaction with convenience and timely services.”



— Bruce J. Goodman, Senior Vice President and, Chief Information Officer, Humana

Objective	Approach	Results
<ul style="list-style-type: none"><li>Humana wanted an e-business platform to optimize operations which would allow intensive, integrated data processing in real time.</li></ul>	<ul style="list-style-type: none"><li>HP implemented the solution while resolving software design and integration issues along the way.</li></ul>	<ul style="list-style-type: none"><li>HP delivered best-in-class health plan management system</li><li>The open architecture of the MetaVance product enabled easy integration with existing applications and third-party products.</li><li>Humana has been able to leverage and integrate the business rules defined within MetaVance to its Web portals to provide real-time information and transactions for members and providers.</li><li>Emphesys vision seamlessly migrated all Emphesys business processes — such as enrollment and claims and eligibility transactions — to a robust next-generation portal</li></ul>



# Pennsylvania Patient Safety Authority

Web based Pennsylvania Patient Safety reporting system process more than 50.000 reports of actual or potential patient harm

“By collecting near-misses, PA-PSRS stands out among most other medical error reporting systems. We believe that in capturing near-misses we will be able to prevent more serious events from happening in the future and thus reduce medical errors.”



— Dr. Robert Muscalus, Former Chairman, Pennsylvania Patient Safety Authority

Objective	Approach	Results
<ul style="list-style-type: none"> <li>• Reduce and eliminate medical errors</li> <li>• Identify problems and recommend solutions that promote patient safety in hospitals, ambulatory surgical facilities and birthing centers</li> </ul>	<ul style="list-style-type: none"> <li>• Web-based reporting tool designed by the University Healthcare Consortium (UHC), was chosen as the starting point for developing Pennsylvania Patient Safety Reporting System (PA-PSRS).</li> <li>• Designing and implementing an internal automated workflow system capable of handling hundreds of reports each day. The workflow system helped ECRI and ISMP better manage role as clinical analysts by giving them the tools they need to review and process incoming reports accurately and efficiently.</li> </ul>	<ul style="list-style-type: none"> <li>• Web-based Pennsylvania PA-PSRS processed more than 50,000 reports of actual or potential patient harm. To date, more than 550,000 reports have been generated</li> <li>• PSA has helped state's medical facilities, improve patient safety by proactively addressing numerous areas of potential risk.</li> </ul>



# United India Insurance Company

## Health insurance line of business



### Solution

- The solution delivers innovative straight through processing concepts and internet-based delivery channels to capitalize future channels to markets.
- It automates and streamlines United India's Health insurance value-chain from back-office administration to online claims and business performance reporting.
- Alongside, it also provides comprehensive Management Information System (MIS)/ Executive Information System (EIS) for decision making, monitoring and controlling.
- The technical approach used in the project structure is the Entity Driven Approach. In this approach objects represent the business domain; as such, they are the foundation of a business layer. In essence the relationally organized data (database) were taken and had it available as objects (code).

### Challenge

- Integration with SAP system for account processing and maintenance
- Migrating the huge amount of old legacy data to the newly designed database
- Scalable, customizable and easy maintenance solution
- Connecting 1400 branch offices to the centralized system

### Business Benefits

- Rationalization & elimination of repetitive and manual drudgery of work at branches, which results in optimization of manpower at all levels
- Substantial savings in cost to company which helps UIIC in effective utilization of human resources in customer facing functions
- The application plays a vital role in helping UIIC enhance their products and service offerings.

