

# EXPERT SYSTEM

Employment institute

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## Employment institute

- non profit organization
- NGO
- research the problems of employment
- information of labour market, the aim is to be a platform for an informations exchange
- solves problems of active labour market policies, long life learning, middle and long term strategies and prognoses focused on the regional disparities.

## Employment institute – other activities

- partner in a project O+NE
  - new forms of labour relations and labour standards as social challenge in an enlarged Europe
- organization of conference of active labour market policies
  - 2006 jun: ALMP in party programs
  - 2006 October: ALMP in governmental program
  - 2007: jun ALMP, changes in law nr.5 (about employment)

## **Project IS EQUAL**

"Methodology of the identification and prognostication of some possible trends in the unemployment and the employment and the analysis of possible solutions for manage this trends with the aim to make active labour market policies more effective"

**Time schedule:**

from Feb 2005 till Nov 2007

**This project is co-financed by ESF**

## **Project partners:**

- Employment institute
- Institute of economic research, of SAS
- Office of Labour, Social Affairs and Family in :  
Lučenec and Bratislava

Attendance of several partners from EU:

France, Spain, Italy, Austria, Germany, Denmark  
and Poland

in an international cooperation cema-net.

## **Aims of the project EQUAL**

- **creating a manual and an expert system**
  - for effective selection of activities corresponding to the active labor market policies
  - finding ways how to prefer effective active labour market policies before less effective.
- **creation of a regional prognosis of the labour market for pilots regions**
  - the prognosis was made by Institute of economic research, SAS
  - upgraded by an information from regions in co-operations with Office of Labour, Social Affair and Family

- **Employment institute**
  - maintenance of the expert system and manual
  - update of the expert system and the manual (in co-operation with partners organizations)
- **Labour offices**
  - providers of inputs data
  - users of the expert system and its outcomes
- **SAS – Institute of economic research**
  - creation of regional and economical prognosis of pilot regions - Lučenec and Bratislava

# Expert system



## **What the expert system is**

- definition, examples
- transfer of knowledge from experts
- retention of knowledge in organization in case an employers (experts) leave

## **Retraining or increasing of qualification**

- biggest care in the Expert system is taken of re-training courses
- aim is to increase a fruitfulness of courses
  - fruitfulness = unemployed find a job thanks to the course
- the fruitfulness: is determined by appropriate course selection
- appropriate of selection is determined by several factors:
  - personal characteristics of unemployed
  - potentialities at labour market in a region

## Choice – advice - selection

- expert method
  - summation of best practice of experts working as consultants for unemployed at LO
  - task for Labour Offices in Lučenec and Bratislava
- economic forecast
  - trends and changes in labour market has influence on appropriate choice of re-qualification
  - task for SAS, economic forecast of SR
- integration
  - collection of best practice and its integration with prognosis
  - output: recommendation for ALMP selection
  - task: Employment Institute

## Integration

- collection of the best practice and economic prognoses
- realization of the collection =>

## Expert system

- software for registration unemployed
- software for best practice collection
- output of results – processing experts best practice with the economical prognosis

## Atom

- smallest (uncuttable) part of education, knowledge or skill, often called module of education
- reason:
  - better orientation in courses,
  - alternative description of people skills (categorization)
    - better for computer processing
- one person has several atoms, one course is made by several atoms
- 77 atoms in system

## Register of unemployed

- indexed information of unemployed
  - personal informations, characteristics, skills a knowledges represented like atoms

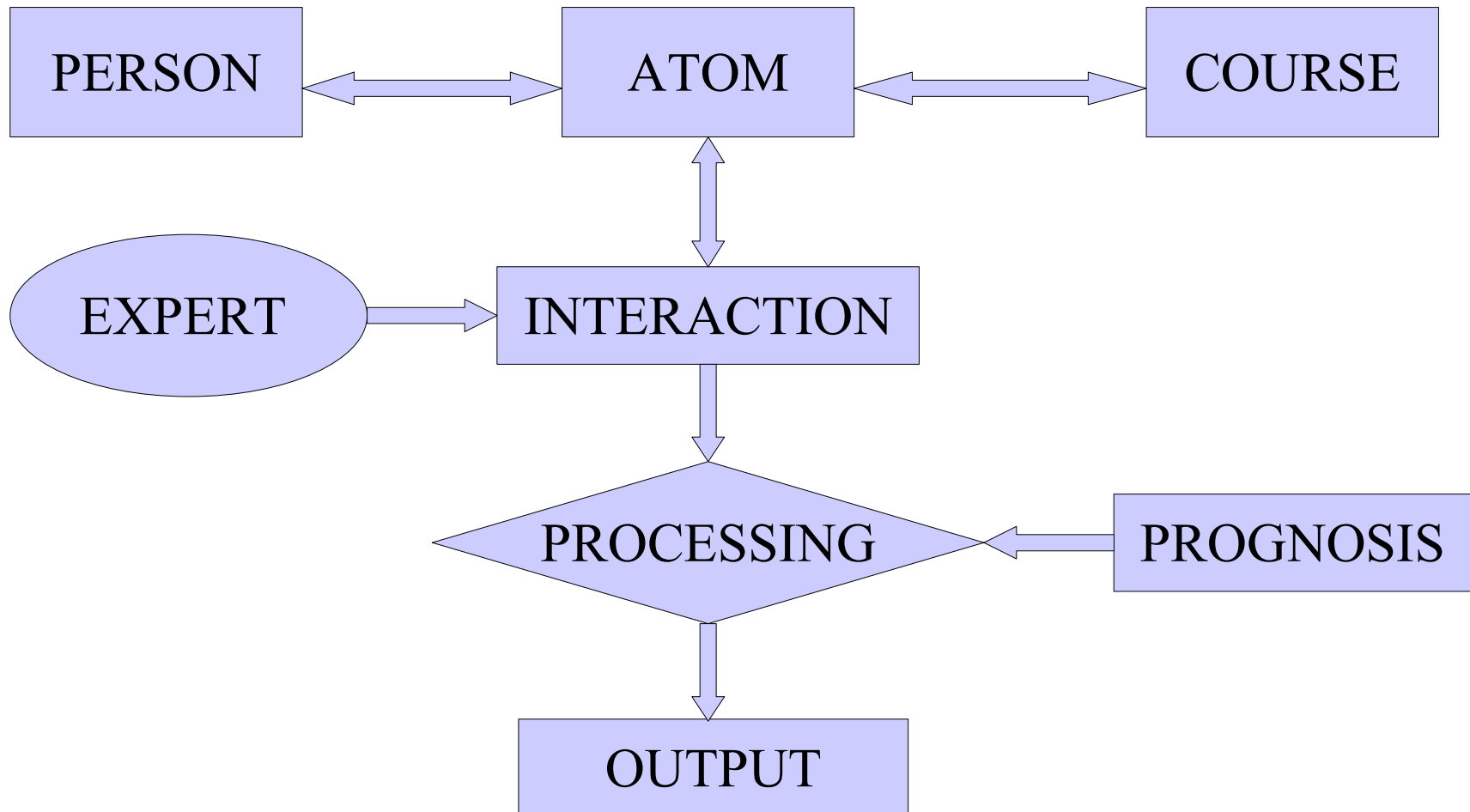
## Collection of best practice

- is relation between a course and typology of unemployed, describes properness of course to unemployed and contra wise = INTERACTION
  - properness is valued on different levels, for concrete unemployed is selected one or more courses or atoms and properness of each one is stated
  - this experts practice if defined through categorized data describing personal characteristics, knowledge and skills

## Output

- countdown of course (respectively atoms modules) decreasing by level of property
- processing covers experts recommendations given for similar types of unemployed in the past and covers also the region prognoses

# Design





**iz** IZ expertný systém:

<b>IZ expertný systém:</b>	<b>kurzy</b>	<b>interakcie</b>	<b>ľudia</b>	<b>iné</b>	<b>pondelok, 05.03.2007</b>
<b>Index</b>	<b>atómy</b>	<b>charakteristiky</b>	<b>ľudia</b>	<b>kzam</b>	nalogovany ako:
<b>prečítaj ako prvé</b>	<b>kurzy</b>	<b>interakcie</b>	<b>typy a triky</b>	<b>štruktúra kzam</b>	iva
<b>chyby</b>	<b>pseudo kurzy</b>	<b>interakcie2</b>	<b>dodávateľ</b>	<b>užívatelia</b>	<b>logout</b>
<b>zabezpečená verzia</b>	<b>klasifikácia kurzov</b>			© IZ	
<b>rýchla navigácia:</b>			<b>ľudia</b>	<b>výsledky</b>	<b>interakcie2</b>

### ľudia, ?

ľudia:

<b>základné údaje</b>	<b>charakteristiky</b>	<b>jazyky</b>	<b>choroby</b>	<b>atómy 1</b>	<b>atómy 2</b>	<b>atómy 3</b>
ID				167		
Meno človeka				<b>Pavel</b>		
Priezvisko človeka				<b>Hodál</b>		
číslo spisu				1244/06/5		
Aktivita				UoZ		
Kategória KZAM						
Región				BA 5		
linky				<b>výsledky</b>		
dalej				<b>dalej &gt;&gt;</b>		

ľudia:

93,186 milliseconds

**Index, prečítaj ako prvé, atómy, kzam, pseudo kurzy, kurzy, klasifikácia kurzov, dodávateľ, charakteristiky, interakcie, interakcie2, štruktúra kzam, kzam, ľudia, výsledky, typy a triky, užívatelia, chyby, © IZ,**

**zabezpecena verzia**

**iz** IZ expertný systém:

<b>IZ expertný systém:</b>	<b>kurzy</b>	<b>interakcie</b>	<b>ľudia</b>	<b>iné</b>	<b>pondelok, 05.03.2007</b>
<b>Index</b>	<b>atómy</b>	<b>charakteristiky</b>	<b>ľudia</b>	<b>kzam</b>	nalogovany ako:
<b>prečítaj ako prvé</b>	<b>kurzy</b>	<b>interakcie</b>	<b>typy a triky</b>	<b>štruktúra kzam</b>	iva
<b>chyby</b>	<b>pseudo kurzy</b>	<b>interakcie2</b>	<b>dodávateľ</b>	<b>užívatelia</b>	<b>logout</b>
<b>zabezpečená verzia</b>	<b>klasifikácia kurzov</b>			© IZ	
<b>rýchla navigácia:</b>			<b>ľudia</b>	<b>výsledky</b>	<b>interakcie2</b>

### ľudia, ?

ľudia:

<b>základné údaje</b>	<b>charakteristiky</b>	<b>jazyky</b>	<b>choroby</b>	<b>atómy 1</b>	<b>atómy 2</b>	<b>atómy 3</b>
Pohlavie	muž,					
Vzdelanie	06,					
Vek	45 a viac,					
Komunikatívnosť	priemerné komunikačné schopnosti,					
Trpezlivosť a precíznosť	priemerná trpezlivosť a schopnosť sústrediť sa,					
Myslenie a samostatnosť	dobrá schopnosť samostatne riešiť problémy a vzniknuté situácie,					
Mobilita	ochota dochádzať v rámci obce,					
Ochota na seba pracovať	má ochotu,					
dalej	<b>d'alej &gt;&gt;</b>					

ľudia:

93,186 milliseconds

**Index, prečítaj ako prvé, atómy, kzam, pseudo kurzy, kurzy, klasifikácia kurzov, dodávateľ, charakteristiky, interakcie, interakcie2, štruktúra kzam, kzam, ľudia, výsledky, typy a triky, užívatelia, chyby, © IZ,**

**zabezpecena verzia**

## výsledky, ?

### Pavel Hodál

Vybrat	Body za kurz	Vysvetlenie
<input type="checkbox"/> základy pc	76	<b>vysvetlenie</b>
<input type="checkbox"/> elektronická pošta	70	<b>vysvetlenie</b>
<input type="checkbox"/> internet - základy	70	<b>vysvetlenie</b>
<input type="checkbox"/> strojopis	70	<b>vysvetlenie</b>
<input type="checkbox"/> tabulkový procesor základy	70	<b>vysvetlenie</b>
<input type="checkbox"/> textový editor - základy	70	<b>vysvetlenie</b>
<input type="checkbox"/> hľadanie zamestnania	35	<b>vysvetlenie</b>
<input type="checkbox"/> prijímací pohovor	35	<b>vysvetlenie</b>
<input type="checkbox"/> sociálne zručnosti	35	<b>vysvetlenie</b>
<input type="checkbox"/> zákonník práce	35	<b>vysvetlenie</b>
<input type="checkbox"/> spôsobilosť SBS	6	<b>vysvetlenie</b>
<input type="checkbox"/> spracovanie akčných plánov zam.4	0	<b>vysvetlenie</b>
<input type="checkbox"/> animátor	0	<b>vysvetlenie</b>
<input type="checkbox"/> BOZP technik	0	<b>vysvetlenie</b>
<input type="checkbox"/> cestovný ruch	0	<b>vysvetlenie</b>
<input type="checkbox"/> databázy - základy	0	<b>vysvetlenie</b>
<input type="checkbox"/> distribuované sql systémy	0	<b>vysvetlenie</b>
<input type="checkbox"/> editor	0	<b>vysvetlenie</b>
<input type="checkbox"/> ekonóm I.	0	<b>vysvetlenie</b>
<input type="checkbox"/> ekonóm II.	0	<b>vysvetlenie</b>
<input type="checkbox"/> ekonóm III.	0	<b>vysvetlenie</b>
<input type="checkbox"/> euromanažment	0	<b>vysvetlenie</b>
<input type="checkbox"/> grafik	0	<b>vysvetlenie</b>
<input type="checkbox"/> html - základy	0	<b>vysvetlenie</b>
<input type="checkbox"/> kaderníctvo	0	<b>vysvetlenie</b>
<input type="checkbox"/> korešpondencia	0	<b>vysvetlenie</b>
<input type="checkbox"/> kozmetika	0	<b>vysvetlenie</b>
<input type="checkbox"/> krajčírstvo	0	<b>vysvetlenie</b>
<input type="checkbox"/> kuchár	0	<b>vysvetlenie</b>
<input type="checkbox"/> kuriči	0	<b>vysvetlenie</b>
<input type="checkbox"/> manikúra	0	<b>vysvetlenie</b>
<input type="checkbox"/> masér	0	<b>vysvetlenie</b>
<input type="checkbox"/> murár	0	<b>vysvetlenie</b>
<input type="checkbox"/> mzdy	0	<b>vysvetlenie</b>
<input type="checkbox"/> obkladač	0	<b>vysvetlenie</b>
<input type="checkbox"/> pedikúra	0	<b>vysvetlenie</b>
<input type="checkbox"/> pekár	0	<b>vysvetlenie</b>
<input type="checkbox"/> prílišný preukaz	0	<b>vysvetlenie</b>

## Statistics

- count of active users: 15
- count of unemployed: 1200
- count of atoms: 77
- count of interactions:
  - base: 60
  - first range: 2200
  - second range: 2100

## Expectations

- Expert system became platform for knowledge and best practice exchange between experts in Labour offices and also between experienced and less experienced staff
- offer a better orientation in courses and its content
- inspire or help experts in their work
- offer data for analyze of effectiveness of ALMP

Thank you for your attention