

Izvješće s održane radionice projekta STRATEGIC PLANNING WITHIN HIGHER EDUCATION

Vrijeme/mjesto: Prva radionica projekta održana je od 9. do 11. srpnja 2015. godine na Fakultetu organizacije i informatike u Varaždinu.

Radionici su nazočili: Blaženka Divjak (voditeljica projekta), Vjeran Strahonja, Nina Begičević Ređep, Marcel Maretić, Katarina Pažur Aničić, Nikola Kadoić, Valentina Kirinić, Valentina Đurek, Sanjana Buć, Maja Ćukušić, Andrina Granić, Sandra Kučina Softić, Tihomir Hunjak, Jeffrey Haywood, Wim Van Petegem

Administracija: Josipa Bađari

Cilj: radionicom razmijeniti znanja o strateškom planiranju u visokom obrazovanju s posebnim naglaskom na implementaciju e-učenja, otvorenog učenja i učenja na daljinu, proučiti uspješne primjere strateškog planiranja međunarodnih projektnih partnera - KU Leuven i Sveučilište u Edinburghu, izraditi detaljne istraživačke planove za četiri istraživačke teme projekta te započeti s prvim istraživanjima doktorskih studenata uključenih u projekt.

Program: Radionica je održana na engleskom jeziku prema sljedećem programu:

Workshop

STRATEGIC PLANNING WITHIN HIGHER EDUCATION

Varaždin, 9 -11 July 2015

- | | |
|---------------|--|
| Goals | <ul style="list-style-type: none"> • To raise the level of knowledge in strategic planning within higher education (HE), with the reference to the implementation of e-learning among the project team members • To analyse case study research for two universities: KU Leuven and University of Edinburgh <ul style="list-style-type: none"> • To design detailed research plan for 4 research topics • To conduct the first research phase of doctoral students's research |
| Venue: | Faculty of Organization and Informatics, Pavlinska 2, Varaždin (room 11, Hall, Info club) |

- To raise the level of knowledge in strategic planning within higher education (HE), with the reference to the implementation of e-learning among the project team members
- To analyse case study research for two universities: KU Leuven and University of Edinburgh
 - To design detailed research plan for 4 research topics
 - To conduct the first research phase of doctoral students's research

| Time | Theme | Presented/ coordinated by | Language |
|---|---|---|----------|
| Thursday, July 9th 2015 – room 11, 1st floor | | | |
| 9:30 – 10:00 | Registration, welcome coffee | Josipa Bađari | Hr, en |
| 10:00 – 10:45 | Introduction to the project, work plan, workshop | Blaženka Divjak | En |
| 11:00 – 11:45 | Presentations of four project research topics, Part I* - Identification and research of the problem in HE | Vjeran Strahonja, Sanjana Buć, Valentina Đurek | En |
| 12:00 – 12:45 | Presentations of four project research topics, Part II – Development of decision making methodology and strategic decision making in HE | Nina Begičević Ređep, Tihomir Hunjak, Nikola Kadoić | En |
| 12:45 – 14:00 | Break with refreshments (Info club) | | |

| | | | |
|--|--|--|--------|
| 14:00 – 14:45 | Presentations of four project research topics, Part III - Implementation and strategic decision monitoring in HE | Valentina Kirinić, Sandra Kučina Softić, Katarina Pažur Aničić, Ivanka Đeri* | En |
| 15:00 – 15:45 | Presentations of four project research topics, Part IV – Evaluation of the effects of strategic decision in HE | Blaženka Divjak, Marcel Maretić, Maja Ćukušić, Andrina Granić | En |
| 15:45 – 16:00 | Conclusions of the first day | Blaženka Divjak, Josipa Bađari | En |
| Friday, July 10th 2015; Hall, Loft | | | |
| 9:30 – 10:00 | Planning & administrative issues, coffee | Josipa Bađari | Hr, en |
| 10:00 – 11:00 | Case study I: University of Edinburgh – strategic planning, implementation and state of the art of e-learning | Jeff Haywood | En |
| 11:15-12:00 | Case study I: K.U. Leuven – strategic planning, implementation and state of the art of e-learning | Wim van Petegem | En |
| 12:15 – 13:00 | Round table discussion of the lessons learned from previous case studies + inputs from Croatian universities/faculties | Blaženka Divjak | En |
| 13:00 – 14:00 | Break with refreshments (Info club) | | |
| 14:15 – 15:00 | Doctoral student: Research case I | Katarina Pažur Aničić | En |
| 15.15-15.45 | Doctoral student: Research case II | Sanjana Buć | En |
| 15.45-16.15 | Doctoral student: Research case III | Valentina Đurek | En |
| 19:00 – 21:00 | Networking with refreshments | | |
| Saturday, July 11th 2015 Hall, Loft | | | |
| 9:30 – 10:00 | Planning & administrative issues, coffee | Josipa Bađari | Hr |
| 10:00 – 11:45 | Group work on 4 research topics | All members | Hr |
| 12:00 – 13:00 | Reports on group work and conclusion of the workshop | All members | Hr |
| 13:00 – 14:00 | Closure with refreshments | | |
| 14:15 | Farewell, departure | | |

*excused absence due to health condition

U nastavku izvještavamo o pojedinim prezentacijama po rasporedu:

Četvrtak, 9. srpnja 2015.

| | | | |
|--------------|--|-----------------|----|
| 10:00 –10:45 | Introduction to the project, work plan, workshop | Blaženka Divjak | En |
|--------------|--|-----------------|----|



About the project...

Why decision making in HE?

- Higher education (HE) is far more important to the national economic growth than primary or secondary education (DePillis & DePillis, 2001)
 - Relatively few studies comprehensively deal with strategic decisions making (DM) and strategic management in HE
 - HEI is today in theory evaluated through the performance of **triple mission**
 - Tension between **exploitation** (learning as usual) and **exploration** (exceptional learning) strategy (Meyer, 2007)
 - DM in different organizational frames (Manning, 2013)
 - The way in which HE **meets its mission** is becoming a first-class research problem (Cortés-Aldana et al., 2009).
 - This project research is focused on institutional and national perspective
 - Personal perspectives of the education services user, student or parent are not included
 - Demystify DM in HE, research on, recommend, develop new methods



Dva je rad finansiranje Hrvatska zaklada za znanost projektom IP-2014-09-7854.

About the project



Cycle of strategic decision

- (1) **Intelligence** - problem identification and research, advancement of methodologies such as readiness assessment, diffusion of innovation etc.
 - (2) **Design of methodology** - primary research goal is the design of decision making methodology and decision making, improvement of multicriteria decision analysis enabling better strategic decision making in HE
 - (3) **Implementation and monitoring** - research and identification of key factors that determine effectiveness of strategic decision, their correlation, design of measuring model for maturity and effectiveness of strategic decision implementation in HE
 - (4) **Evaluation** - survey possible approaches and evaluation by application of J. Pearl's structural causal models for identification of effects of strategic decision.



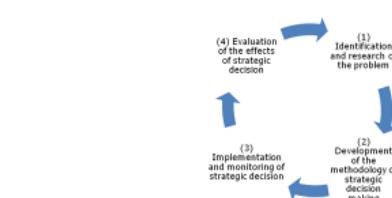
Dvaj je rad financirala Hrvatska znanstvena i umjetnička akademija u sklopu projekta IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

10



Ova je rad financirala Hrvatska znanostna i razvojna agencija pod projektnim brojem IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8



Ova je rad financirala Hrvatska znanostna i razvojna agencija u sklopu projekta IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

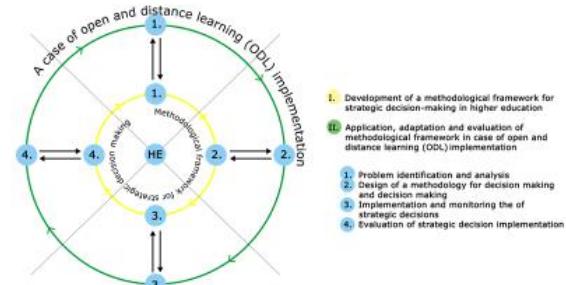
8

Ovaj je rad financirala Hrvatska zaklada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

About the project...

Double cycle of strategic decision making



About the project...

Cycle of strategic decision - goals (2)

2. Application, adaptation and validation of a given methodological framework on the example of the decision about the e-learning (ODL) implementation

- 2.1. To determine and research issues related to e-learning (ODL):
 - a) To develop methodology for e-readiness assessment of HE system for e-learning implementation
 - b) To assess e-competences of future teachers
 - c) To assess the future needs for e-competences for the development and application of ICT
 - d) To conduct research of e-readiness of HE
- 2.2. To adjust the methodology for strategic decision-making in higher education for the problem of e-learning (ODL) implementation and decision making



About the project...

Cycle of strategic decision – expected results

Objective 1: To develop a methodological framework to support strategic decision making in HE

- in further presentations today...

Objective 2: Application, adaptation and validation of a given methodological framework on the example of the decision about the e-learning (ODL) implementation

- in further presentations today...

Objective 3: To establish the infrastructure for project management, dissemination and sustainability of project's results

- 3.1. Foundation of the decision-making lab and e-learning lab at FOI campus
- 3.2. Website, knowledge base & other dissemination materials on results
- 3.3. Two seminars and two workshops on the research topics
- 3.4. Four PhD thesis related to the project research topic
- 3.5. Project management



Ovaj je rad financirala Hrvatska zadržavača znanosti projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

9

About the project...

Cycle of strategic decision - goals (1)



1. To develop a methodological framework to support strategic decision making in HE:

- 1.1. To develop a methodology to identify and research problems in HE
- 1.2. To develop a methodology for strategic decision making in HE
- 1.3. To develop a methodology for monitoring the strategic decisions' implementation
- 1.4. To develop a methodology for evaluation of effects of strategic decisions



Ovaj je rad financirala Hrvatska zadržavača znanosti projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8

About the project...

Ovaj je rad financirala Hrvatska zadržavača znanosti projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.



Cycle of strategic decision – goals (3)

2.3. To implement and monitor the implementation of strategic decision about e-learning implementation (ODL) in higher education

- a. To assess the maturity and success of the e-learning strategy
- b. To develop a conceptual model of curriculum based on learning outcomes/ competencies for delivery in (ODL - MOOC),

2.4. To evaluate the effects of strategic decisions about e-learning (ODL) implementation in HE

- a. To analyze effects of strategic decisions on the e-learning (ODL) implementation in HE
- b. To form recommendations for the e-learning implementation in HE in Croatia

• 3. To establish the infrastructure for project management, dissemination and sustainability of project's results



Ovaj je rad financirala Hrvatska zadržavača znanosti projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

10

About the project...



Methodology

- HE, by its position and values, significantly differs from the business sector and other parts of the public sector
- Interdisciplinary:
 - Information sciences
 - Educational sciences
 - Mathematics ...
- Approaches:
 - Constructivist approach (understanding the social, economic and development context)
 - Postpositivistic approach (empirical observation and measurement)
 - Mathematical modelling (development of methods and techniques and their consolidation in solving the problem of preparation, implementation and evaluation of strategic decisions in HE)



Ovaj je rad financirala Hrvatska zadržavača znanosti projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

11

12

About the project...

Summary & upgrades (Divjak & Begićević, IADIS, 2015)

| Phase of the cycle | Approaches | Specifics of HE and e-learning | Methods |
|--|---|---|--|
| Identification and research of the problem | Needs and situation analysis Readiness assessment DOI | Stakeholders' involvement E-readiness raising | Situation analysis Case study research & qualitative analysis Structural Equation Modelling (SEM) Social Network Analysis (SNA) Upgraded methodology for e-readiness assess. |
| Development of methodology for DM | Analysis of potential solutions MCDM Cost-benefit and risk analysis | Benchmarking of HEIs Modelling dependencies and group DM | BOCR AHP and ANP, PROMETHEE, ELECTRE Ideal point-based MCDM Multi-criteria variant of cost-benefit analysis Hybrid methodology of risk management – Monte Carlo simulation and Sensitivity analysis Qualitative analysis; Factor analysis, Clustering |
| Implementation and strategic decision monitoring | BSC, KPI, BPM CMMI PPM | Interpretations of econometrics and use of KPIs | BSC Balanced Scorecard Enterprise Architecture for BPM CMMI (Capability Maturity Model Integration) Econometric methods (ROI, productivity, efficiency, profitability) |
| Evaluation of effects of the strategic decisions | Qualitative, quantitative and mixed methods Structural causal models | Stakeholder perspective In-depth case study to find out causes & effects | Qualitative methods - stakeholder perspective, document analysis, internal consistency..., in-depth case study, Delphi Quantitative methods - econometric analysis, cost-benefit analysis, multi-criteria & regression analysis Pearl's structural causal models |

THANK YOU!
 LET'S DISCUSS!



About the project

About the project...

About the project...

References

From the proposal...

On the web site www.higherdecision.foi.hr

Wim links

- Report to EC - New modes of learning and teaching in higher education, Oct 2014
- NMC Horizon Report 2015
- EUA Trends 2015: Learning and Teaching in European Universities ...

Jeff links

- <https://jisc.ac.uk/guides> (for example: Strategic approaches to technology)
- <http://www.educause.edu/library> EDUCAUSE Library ...

Books we bought ...

Contributions in the afternoon...



Ovaj je rad finansiran iz sredstava Hrvatske znanosti i umjetnosti projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

14



Zaključak:

Voditeljica projekta iznijela je ciljeve, strukturu projekta i aktivnosti planirane navedenim projektom te posebno istaknula prve rokove za prvi šest mjeseci projekta što istječe početkom prosinca 2015. godine. Na kraju upozorila je članove tima na literaturu nabavljenu u okviru projekta te na poveznice na dodatne dokumente koje su dostavili međunarodni partneri:

- Report to EC - New modes of learning and teaching in higher education, Oct 2014
- NMC Horizon Report 2015
- EUA Trends 2015: Learning and Teaching in European Universities ...
- <https://jisc.ac.uk/guides> (for example: Strategic approaches to technology)
- <http://www.educause.edu/library> EDUCAUSE Library.

| | | | |
|---------------|---|--|----|
| 11:00 – 11:45 | Presentations of four project research topics, Part I* - Identification and research of the problem in HE | Vjeran Strahonja, Sanjana Buć, Valentina Đurek | En |
|---------------|---|--|----|



Identification and research of the problem.

higher DECISION

2. Specific goal:

Application, adaptation and validation of a given methodological framework on the example of the decision about the e-learning (ODL) implementation

| Objectives | Activities | Outputs – Milestones (M) and/or Deliverables (D) |
|--|--|---|
| O5. To develop methodology for e-readiness assessment of HE system for e-learning implementation | A.5.1. Development of methodology for e-readiness assessment in HE A.5.2. Development of research instrument A.5.3. Preparation for the pilot study on e-readiness | D.5.1. Methodology for e-readiness assessment in HE D.5.2. Research instrument D.5.3. Plan for the pilot study on e-readiness |
| O6. To assess e-competences of future teachers | A.6.1. Research about e-competences for future teachers (case study, qualitative analysis) A.6.2. Quantitative analysis about e-competences for future teachers | D.6.1. Results of qualitative analysis about e-competences for future teachers D.6.2. Recommendations for e-competence development for future teachers |
| O7. To assess the future needs for e-competences for the development and application of ICT | A.7.1. Research about e-competences for future teachers (case study, qualitative analysis) A.7.2. Quantitative analysis about e-competences for future teachers | D.7.1. Results of qualitative analysis about future e-competences M.7.1. Recommendations for future e-competence needs |

Identification and research of the problem.

higher DECISION

Possible upgrades

1. Widening the methodological scope:

O1. To develop a methodology to identify and research problems in HE is based on the theory of diffusion of innovation and all the activities are related to this theory:

- The theory of diffusion of information is not the only one theory that describes a process of transfer of innovations through certain channels over the time among members of a social system:
 - other life-cycle models (life-cycle, PDAC, spiral model, non-system theories)
 - in addition to process-oriented theory, there are theories based on indicators
- There is a reasonable criticism of DOI theory:
 - pro-innovation bias, individual-blame bias, recall problem, and issues of equality (Rogers)
 - partial view of complex problems...

2. Updating the dynamics and participants

Deadline for:

A.1.4. Development of methodology for identification and research of problems in HE

M.1.1. Methodology for identification and research of problems in HE

is in accordance with the plan Mo 10, which is not realistic, given that this methodology should include models of diffusion of innovations in the system VO (O1), but also the assessment methodology of e-readiness (O5 and O8) and the results of research on e-competences (O6 and O7) (p 13th Application Form).



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

5

Identification and research of the problem.

higher DECISION

Planned within the application 1/3

1. Specific goal:

To develop a methodological framework to support strategic decision making in HE

| Objectives | Activities | Outputs – Milestones (M) and/or Deliverables (D) |
|--|--|---|
| O1. To develop a methodology to identify and research problems in HE | A.1.1. Development of draft of the model of diffusion of innovations A.1.2. Conducting qualitative study with experts (Delphi, focus groups, nominal group technique) A.1.3. Development of final model of diffusion of innovations A.1.4. Development of methodology for identification and research of problems in HE | D.1.1. Draft of the model of diffusion of innovations in the HE D.1.2. Results of qualitative research D.1.3. The model of diffusion of innovations in the HE M.1.1. Methodology for identification and research of problems in HE |



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

2

Identification and research of the problem.

higher DECISION

Planned within the application 3/3

2. Specific goal:

Application, adaptation and validation of a given methodological framework on the example of the decision about the e-learning (ODL) implementation

| Objectives | Activities | Outputs – Milestones (M) and/or Deliverables (D) |
|--|---|---|
| O8. To develop methodology for e-readiness assessment of HE system for e-learning implementation | A.8.1. Adjustment of research instrument and conducting the pilot research on e-readiness in HE in Croatia A.8.2. Conducting the research on e-readiness in HE in Croatia, analysis of results | D.8.1. Results of the pilot research on e-readiness in HE in Croatia M.8.1. E-readiness report for HE in Croatia |



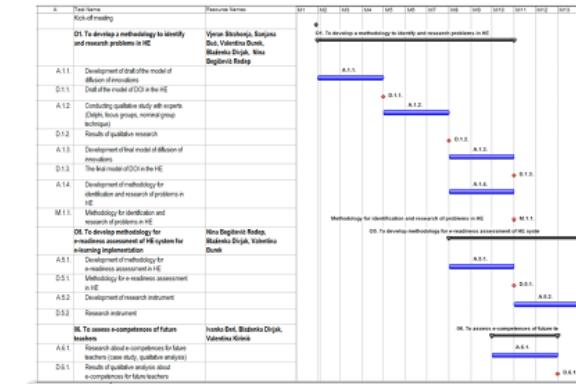
Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

4

Identification and research of the problem.

higher DECISION

Plan for the first project year



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

6

Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Identification and research of the problem.

higher DECISION

Plan for the first project year Activities in progress

- O1. To develop a methodology to identify and research problems in HE
- A.1.1. Development of draft of the model of diffusion of innovations
 - Poster for 9th International Conference on e-Learning, 21 – 24 July 2015, Las Palmas de Gran Canaria, Spain, prepared by Blaženka Divjak and Sanjana Bučić; „INNOVATION DIFFUSION MODEL IN HIGHER EDUCATION: CASE STUDY OF E-LEARNING DIFFUSION“ (will be presented on Friday)
- A.1.2. Conducting qualitative study with experts: preparation for development of an instrument for measuring environmental factors
 - reviewing literature about the influence of environmental factors on the diffusion of innovation in organizations (Bučić)



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

7

Add your presentation title here please

higher DECISION

Resources needed & team members involved

Equipment, Mobility, Conferences, Support, Field work etc.

Who is going to be involved?

| Objectives | Team members |
|--|---|
| O1. To develop a methodology to identify and research problems in HE | Vjeran Strahonja, Sanjana Bučić, Valentina Đurek, Blaženka Divjak, Nina Begićević Ređep |
| O5. To develop methodology for e-readiness assessment of HE system for e-learning implementation | Nina Begićević Ređep, Blaženka Divjak, Valentina Đurek |
| O6. To assess e-competences of future teachers | Ivana Deri, Blaženka Divjak, Valentina Kirinčić |
| O7. To assess the future needs for e-competences for the development and application of ICT | Katarina Pažur Aničić, Blaženka Divjak, Valentina Kirinčić |
| O8. To develop methodology for e-readiness assessment of HE system for e-learning implementation | Valentina Đurek, Nina Begićević Ređep, Blaženka Divjak, Vjeran Strahonja |



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

9

THANK YOU!
 LET'S DISCUSS!



Add your presentation title here please

higher DECISION

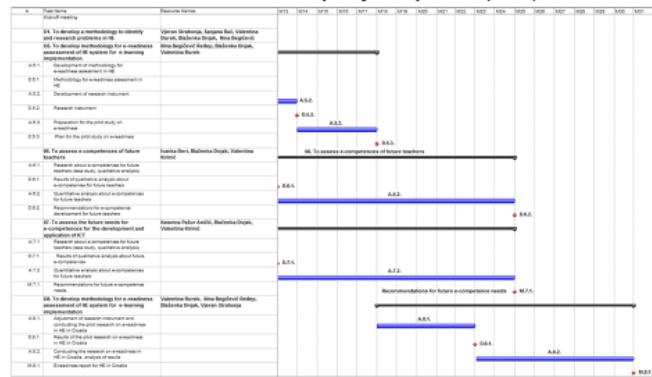
foi

Identification and research of the problem.

higher DECISION

Plan 2

Plan for other project years (2-4)



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8

Identification and research of the problem.

higher DECISION

References

- HRZZ Research Projects (IP-09-2014) Work plan



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

10

Zaključak:

Voditelji ove radne grupe zabilježili su primjedbu međunarodnih partnera u definiranju cilja **O1. To develop a methodology to identify and research problems in HE**. Primjedba je u smislu nužne promjene riječi *problems* koja bi trebala biti detaljnije specificirana. Puno je problema u VO, stoga pitanje je na koje točno se u ovom kontekstu misli.

| | | | |
|---------------|---|--|----|
| 12:00 – 12:45 | Presentations of four project research topics, Part II – Development of decision making methodology and strategic decision making in HE | Nina Begičević Ređep, Tihomir Hunjak, Nikola Kadoić | En |
|---------------|---|--|----|



Summary of strategic decision making cycle in HE

Possible upgrades

| Phase of the cycle | Approaches | Specifics of HE & e-learning | Methods |
|--|---|--|--|
| Identification and research of the problem | Needs and situation analysis Readiness assessment Diffusion of innovation | Stakeholders' involvement E-readiness Consciousness rating | Situation analysis PEST (PESTLE) analysis (for scanning political, economic, social and technological factors) SWOT analysis Different types of qualitative analysis Structural Equation Modelling (SEM) Social Network Analysis (SNA) Development of the methodology for e-readiness assessment – based on the tools for e-readiness assessment (CIO, CSPD, Economist Intelligence Unit, SADC E-Readiness etc.) |
| Development of methodology for DM | Analyses of potential solutions MCDM and Cost-benefit analysis | Benchmarking of HEs Modelling dependencies and group DM (AHP & ANP with BOCR) | BOCR and ANP methods MCDM methods Multi-criteria variant of cost-benefit analysis Risk matrix, What If(s) analysis Hybrid methodology of risk management – Monte Carlo simulation and sensitivity analysis Different types of qualitative analysis Factor analysis, Clustering |
| Implementation and strategic decision monitoring | BSC, KPI, BPM CMMI PPM | Interpretations of econometrics and use of KPIs and PPM Enterprise-Architecture for BPM (Business Process Management) CMII (Competency-Maturity Model Integration) Econometric methods (ROI, productivity, efficiency, profitability) | BSI Enterprise-Architecture for BPM (Business Process Management) CMII (Competency-Maturity Model Integration) Econometric methods (ROI, productivity, efficiency, profitability) |
| Evaluation of effects of the strategic decisions | Qualitative, quantitative and mixed methods Structural causal models | Stakeholder perspective analysis In-depth case study to find out causes & effects | Qualitative methods - stakeholder perspective, document analysis, internal consistency of the strategy and external effectiveness, benchmarking, in-depth case study, Delphi Quantitative methods - econometric analysis, cost-benefit analysis, multi-criteria analysis and regression analysis Innovative approaches - Pearl's structural causal models |

10/5/2015

Your Footer Goes Here

Development of decision making methodology and strategic decision making

higher DECISION

Planned within the application

Part II-Development of methodology for strategic decision making covers four basic stages (adapted from Dyer 1991, Curwin, Slater 2002):

| Phase | Methods | Aims |
|---|---|--|
| 1. Situation analysis – study on decision making problems and existing methods for decision making – analysis of application of existing decision making methods | present state analysis qualitative analysis case study research | identification of key factors related to the identified strategic problems in HE definition of the responsibility for solving strategic problems in HE |
| 2. Improving methods for decision making - improvement and combining of existing decision making methods and development of methodology for strategic decision making in HE | starting point: multi-criteria decision making methods: AHP and ANP BOCR and ANP for group DM: cost-benefit analysis Monte Carlo simulation sensitivity analysis DEA, etc. | improvement of existing decision making methods in order to fit strategic decision making in HE developed methodology for strategic decision making in HE |
| 3. Building models for decision making – methodological framework for strategic DM, its implementation and its positive impact on e-learning and ODL implementation | qualitative analysis surveys (questionnaire) factor analysis clustering | developed models for DM that incorporates methods from previous stage |
| 4. Testing and validation – validation of developed methodological framework for strategic DM on the case of ODL implementation of individual and group decision making | methods for individual and group DM | results of individual and group decision making quality strategic decisions |



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Development of decision making methodology and strategic decision making

higher DECISION

Possible upgrades

Decision making in HE has several perspectives and dimensions:

- 1. Personal, institutional and public perspective
- 2. Technical and infrastructural dimension; Economic dimension; Legal and regulatory dimension; Process and organizational dimension and methodological dimension
- Widespread application of DM methods to support individual and group DM at different levels of DM; it is important to do identify/define:
- ✓ strategic problems in HE – defining perspectives and dimensions
- ✓ level of responsibility: government/Ministry/university/faculty/department/organizational unit
- ✓ decision makers – politicians/members of faculty board/students/teachers/administrative staff
- mapping: perspective - dimension - methodology (methods)
- Strategic planning and decision making – SWOT, PESTLE, AHP/ANP, BOCR
- Resource allocation – AHP
- Risk management in HE – Monte Carlo simulation, risk matrix, What If(s) analysis
- Personal decisions – choice (prioritization, ranking) – ideal point-based MCDM, ELECTRE, AHP and sensitivity analysis
- Effectiveness of education – DEA
- developing methodology for DM (for perspective and dimensions that are marked as priority)
- building and validation of the models:
- Individual or group decision making; 3 case studies



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

4

Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Development of decision making methodology and strategic decision making



Plan for the first project year

| Objectives | Activities | Deliverables (D) | Team members | Duration of activity (from-to, in months) |
|--|--|---|---|---|
| 3.1. To develop a methodology for strategic decision making in HE | Situation analysis – study on decision making problems and existing decision making methods; analysis of application of existing decision making methods | Characteristics of strategic problems in HE; Pros and cons of existing methods for decision making about the strategic problems in HE | Nina Begićević Redep, Tihana Horjak, Blažena Divjak, Nikola Kadić | 2-5 |
| | Implementation of new variants of the application of various decision making methods as the basis for the methodology | New variants of the application of various decision making methods as the basis for the methodology | Nina Begićević Redep, Tihana Horjak, Blažena Divjak, Nikola Kadić | 6-8 |
| | Development of methodology for strategic decision making in HE (AHP/ANP/ODS networks) | Methodology for strategic decision making in HE | Nina Begićević Redep, Tihana Horjak, Blažena Divjak, Nikola Kadić | 10-12, 17-20 |
| 3.1.a. To develop methodology for e-readiness assessment of HE systems for e-learning implementation | Development of methodology for e-readiness assessment in HE | Methodology for e-readiness assessment in HE | Nina Begićević Redep, Blažena Divjak, Valentina Gurek | 8-10 |
| | Development of research instrument | Research instrument | Nina Begićević Redep, Blažena Divjak, Valentina Gurek | 11-12 |

Development of decision making methodology and strategic decision making higher DECISION

Plan for other project years (2-4)

| Objectives | Activities | Deliverables (D) | Team members | Duration of activity (from-to, in months) |
|--|--|---|--|---|
| 3.2. To develop a methodology for strategic decision making in HE | Development of methodology for strategic decision making in HE (AHP/ANP/ODS networks) | Methodology for strategic decision making in HE | Nina Begićević Redep, Tihana Horjak, Blažena Divjak, Nikola Kadić | 13-16 |
| | Validation of the methodology for strategic decision making in HE | Validated methodology for strategic decision making in HE | Nina Begićević Redep, Tihana Horjak, Blažena Divjak, Nikola Kadić | 21-23 |
| 3.2.a. To develop methodology for e-readiness assessment of HE systems for e-learning implementation | Preparation for the pilot study on e-readiness | Plan for the pilot study on e-readiness | Nina Begićević Redep, Blažena Divjak, Tihana Horjak | 14-17 |
| | Adjustment of research instrument and conducting the pilot research on e-readiness in HE in Croatia | Results of the pilot research on e-readiness in HE in Croatia | Nina Begićević Redep, Blažena Divjak, Tihana Horjak | 18-22 |
| 3.2.b. To conduct research on e-readiness of HE | Conducting the research on e-readiness in HE in Croatia | E-readiness report for HE in Croatia | Valentina Gurek, Nina Begićević Redep, Blažena Divjak, Tihana Horjak | 23-26 |
| | Validation of developed methodology framework for strategic decision making, its implementation and evaluation of the impact on e-readiness and ODS implementation | Methodological framework for strategic decision making, its implementation and evaluation of the impact on e-readiness and ODS implementation | Nina Begićević Redep, Sandra Kukša Štefkić | 21-25 |
| 3.2.b. To form recommendations for the e-learning implementation in HE in Croatia | Creation of recommendations for the e-learning implementation in HE in Croatia | Recommendations for e-learning implementation in HE in Croatia | Nina Begićević Redep, Valentina Gurek, Blažena Divjak, Tihana Horjak | 29-30 |



Ovaj je rad finansirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

5



Ovaj je rad finansirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

6

Development of decision making methodology and strategic decision making higher DECISION

Resources needed & team members involved

| Topic | Phase (Part of the project) | Time | Type of publication | Resources |
|---|---|------|--|--|
| Strategic decision making cycle in HE (Case study of e-learning) | Identification and research of the problem (concept of the project) | M2 | Conference paper - Presentation of the methodology for strategic DM, accepted for publication at international conference "EduTech 2014", 10.11.2014., B.Divjak, N.Begićević Redep | Traveling costs, accommodation, fee - for one person |
| Methodology for e-readiness assessment | Identification and research of the problem | M10 | Conference (journal) scientific paper (part of doctoral research V.Durek) B.Divjak, B.Divjak, N.Begićević Redep | Costs of research (traveling costs etc.) |
| Presentation of the results of e-readiness assessment in Croatia (HE) | Identification and research of the problem | M23 | Report on e-readiness/conference paper (part of doctoral research V.Durek) B.Divjak, B.Divjak, N.Begićević Redep | Costs of research (traveling costs etc.) |
| Presentation of the research (thesis) methodology for strategic decision making at the conference of doctoral students at CECIIS conference | Development of methodology for decision making | M4 | Presentation of the research plan (doctoral research - N.Kadić) - developing methodology for strategic decision making in HE - workshop for doctoral students at CECIIS conference N.Kadić | Software: ExpertOffice, Treeplan, 1000Mind/Solver |
| State-of-the-art analysis of the methods that are used for solving problems in HE | Development of methodology for decision making | M25 | Conference paper (decision making conference) N.Kadić, N.Begićević Redep, B.Divjak, T.Hanjak | Traveling costs, accommodation, fee - for one person |
| Methodology for strategic decision making in HE | Development of methodology for decision making | M30 | Scientific paper published in journal N.Kadić, N.Begićević Redep, B.Divjak, T.Hanjak | Software: ExpertOffice, Treeplan, 1000Mind/Solver |
| Validation of the methodology for strategic decision making in HE | Development of methodology for decision making | M45 | Report B.Divjak, N.Begićević Redep, S.Kukša Štefkić | Software: ExpertOffice, Treeplan, 1000Mind/Solver |

Ovaj je rad finansirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

7

Development of decision making methodology and strategic decision making higher DECISION

References

- Begićević, N., Divjak, B. & Hunjak, T. (2007) Prioritization of e-learning form: a multicriteria methodology. *Central European journal of Operations Research*, 15(4), p. 405-419.
- Begićević, N., Divjak, B. & Hunjak, T. (2009) Decision-making on prioritization of projects in higher education institutions using the Analytic Networks Process approach. *Central European Journal of Operations Research*, 1, p. 1-24.
- Begićević, N., Divjak, B. & Hunjak, T. (2011) AHP-based group decision making using laptops. *International Journal of Economics and Business Research*, 3(4), p. 443-458.
- Dyer, F.R. & Forman, E.H. (1991) *An Analytic Approach to Marketing Decisions*. London: Prentice-Hall International, Inc.
- Curwin, J. & Slater, R. (2002) *Quantitative Methods for Business Decisions*. London: Tomson Learning.



Ovaj je rad finansirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8

THANK YOU!
 LET'S DISCUSS!



Development of decision making methodology and strategic decision making

higher DECISION



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Zaključak:

Rasprava se fokusirala oko problema mapiranja: kako odrediti metodologiju te na kojoj razini je provesti s obzirom na različite razine autonomije unutar sveučilišta.

Validacija modela bit će bazirana na slučajevima: 3 različite studije slučaja temeljene na 3 različite mogućnosti strateškog odlučivanja.

U ovoj grupi su i predstavnici sa Sveučilišta u Splitu koje nema strateških dokumenata koji se odnose na e-učenje, ali provodi e-učenje.

A vezano uz članove ovog tima, u radnom planu su upisani neki članovi tima no pozivaju se i drugi koji imaju interesa i znanja da se dodatno uključe.

Na kraju projekta bit će izrađen dokument Preporuke koji će uključivati najvažnije zaključke.

Nadalje, točka 2.1.a. *To develop methodology for e-readiness assessment of HE system for e-learning implementation* treba biti dopunjena kako bi bila jasnija te treba glasiti 2.1.a. *To develop methodology for e-readiness assessment of HE in Croatia system for e-learning implementation.*

Članovi tima će se za sada fokusirati na aktivnosti prve godine projekta, a kasnije će prema rezultatima moći predlagati dopune i izmjene aktivnosti.

Kada se razgovara o postupku donošenja odluka treba biti pažljiv kada se govori o političkim odlukama koje su dinamične zbog političkih promjena, no isto tako pažljivi smo i kada govorimo o odlukama na razini sveučilišta te svakako treba izgraditi model odlučivanja.

Kontrola tog sustava je teška, što znači da su osjetljivi na promjene i izvan kontrole.

Nadalje, neke dobre odluke na sveučilištu je vrlo teško, ponekad i nemoguće provesti pa možemo reći da samo donošenje odluka nije teško već njihova implementacija.

U okviru projekta moguće je izdvojiti neke odluke koje su važne u visokom obrazovanju (dio III), također i veliku količinu općeg znanja o I i II, ali ne toliko o III i IV. Prepoznavanje problema u visokom obrazovanju postoji u literaturi, ali nema radova o evaluaciji i implementaciji.

| | | | |
|---------------|--|--|----|
| 14:00 – 14:45 | Presentations of four project research topics, Part III - Implementation and strategic decision monitoring in HE | Valentina Kirinić, Sandra Kučina Softić, Katarina Pažur Aničić, Ivanka Đeri* | En |
|---------------|--|--|----|

Implementation and strategic decision monitoring in HE

Development of a methodological framework for strategic decision-making in higher education – a case of open and distance learning implementation

IP-2014-09-7854

higher DECISION

Implementation and strategic decision monitoring in HE

DECISION

Planned within the application (I)

- **Implementation and monitoring** - research and identification of key factors that determine effectiveness of strategic decision, their correlation, design of measuring model for maturity and effectiveness of strategic decision implementation in HE
- Implementation of the strategy (in HE):
 - focused on "doing things right"
 - **important:** to elaborate strategy through the strategic objectives (within the BSC perspective), to determine the critical success factors, to define action plans and programs and to determine the KPI's to monitor strategic objectives
 - **literature is limited**
 - **argue for inclusion of universities in development and implementation of strategies** (strategic decisions) that are in accord with the resources of the institution and risk management
 - **lack of models supporting strategic management** is the reason behind the failure of the implementation (Alexander, 1991)
 - **affected by many factors**
- **Key factors** affecting the implementation of the strategy (Okunus, 2001):
 - Its formulation, uncertain environment, organizational structure, organizational culture, operational planning, resource allocation, individuals, controls and outcomes and
 - additional factors: simultaneous implementation of multiple projects, organizational learning, and working with external companies



Ovaj je rad financirala Hrvatska znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

2

Planned within the application (II)

- Three aspects of successful implementation and monitoring of strategic decisions:**
 - Key Performance Indicators (KPI)** to monitor the implementation of strategic decisions (which are defined on the basis of methods for developing and managing business strategies Balanced Scorecard - BSC)
 - Indicators of the processes for implementation of strategic decisions** defined on the basis of Enterprise Architecture for BPM (Business Process Management) - modeling and business process management
 - Evaluation of the maturity (capability) level** of the process of implementing and monitoring strategic decisions (based on the Capability Maturity Model - CMM / CMMI)
- Open research problem:** Considered models and indicators of success of strategy implementation and maturity of strategic management systems, can be adapted and improved to assess the implementation of strategic decisions in HE and therefore such a research is proposed in this project
- Focuses:**
 - to develop a methodology** for implementation and monitoring of strategic decisions
 - to build a model for assessment of the **maturity** of an organization for **implementation and monitoring** of strategic decisions in HE (based upon CMMI) - readiness
 - to research and assess **success of the implementation and monitoring** of strategic decisions in HE - use KPI (BSC and BPM), econometric methods (ROI, productivity, efficiency, profitability, etc.); indicators related to three important project-oriented objectives: time, quality and cost
 - to build a model for assessing the maturity and success of e-learning strategy**



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

3



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

4

Plan for the first project year

Development of methodological framework

- 03. To develop a methodology for monitoring the strategic decisions' implementation (m3-30):** Valentina Kirinčić, Vjeran Strahonja, Sanjana Buć, Tihomir Hunjak + Katarina Pažur Anićić & Sandra Kučina Šoštić
- A3.1. Defining criteria for the assessment of the level of organizational capability for strategic decision implementation and monitoring (m3-5)**
 - D.3.1. Draft list of criteria for the assessment of the level of organizational capability for strategic decision implementation and monitoring (m5)
 - Analysis of factors affecting strategy implementation, definition of criteria for the assessment of levels of capability (of processes)
- A3.2. Defining documentation needed to prove the level of capability for each criteria (m6-8)**
 - D.3.2. List of documentation needed to prove the level of capability for each criteria (m8)
 - How/with which artefacts?
- A3.3. Development of organization/institution assessment maturity model for the strategy implementation (m9-12; m13-20)**
 - D.3.3. Model for the organizations/ institutions assessment maturity for the strategy implementation (m20)
 - Focus on readiness for strategy implementation
 - Defining levels of maturity (CMMI) based on D.3.1. I D.3.2.



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

5



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

6

Plan for other project years (2-4)

Application, adjustment and evaluation

- 010. To assess the maturity and success of the e-learning strategy (m31-37):** Valentina Kirinčić, Katarina Pažur Anićić & Sandra Kučina Šoštić
- A10.1. Development of model for assessing the maturity and success of e-learning strategy (m31-34)**
 - D10.1. Model for assessing the maturity and success of e-learning strategy (m34)
- A10.2. Evaluation of model for assessing the maturity and success of e-learning strategy implementation in HE (m35-37)**
 - D10.2. Evaluation results for the model for assessing the maturity and success of e-learning strategy implementation (m37)
 - Conference or journal paper (m40) + PhD Katarina



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

7

Resources needed & team members involved

| Activities | Methods | Mobility | Support/ Equipment | Involved | Field work |
|---|---|---|---------------------------------------|---------------------|------------|
| A3.1. Defining criteria for the assessment of the level of organizational capability for strategic decision implementation and monitoring (m3-5) | Literature review - analysis of different criteria in relevant models (based on CMMI) | Katarina Pažur Anićić + Valentina Kirinčić on maturity model (Case study) (m12) | Financial support | VK, VS, SB, TH, KPA | |
| A3.2. Defining documentation needed to prove the level of capability for each criteria (m6-8) | Analysis of relevant models (CMMI), focus group with experts / Delphi | | | VK, VS, SB, TH | |
| A3.3. Development of organization/institution assessment maturity model for the strategy implementation (m9-12; m13-20) | Comparison with existing maturity models Synthesis | Conference or paper (m18) | Financial support | VK, VS, SB, TH, KPA | |
| A3.4. Development of methodology for implementation and monitoring of strategic decisions (m21-30) | Analysis of relevant methods/frameworks Synthesis | | | VK, VS, SB, TH, KPA | |
| A10.1. Development of model for assessing the maturity and success of e-learning strategy (m31-34) | Theoretical development, case study or analysis of existing documents about the e-learning implementation | Visit to the institutions chosen for case studies | Dictaphone | VK, KPA | |
| A10.2. Evaluation of model for assessing the maturity and success of e-learning strategy implementation in HE (m35-37) | Content & construct validity (Focus group with experts, Q sorting, AHP...) | Conference or paper (m40) | Decision making SW, Financial support | VK, KPA | |



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8

References

- Alexander, L.D. (1991) Strategy Implementation: Nature of the Problem. In: Hussey, D. (Ed.). International Review of Strategic Management. 2(1). Chichester/NewYork: John Wiley & Sons. (
- Okunus, F. (2001) Towards a strategy implementation framework. *International Journal of Contemporary Hospitality Management*. 13(7), p. 327-338.

THANK YOU!
 LET'S DISCUSS!



Implementation and strategic decision monitoring in HE

higher DECISION



Ovaj je rad financiranje Hrvatske zaklade za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

9

Zaključak:

Tijekom rasprave istaknuto je kako znanstvenici najčešće ne govore jezikom strateškog planiranja, pa čak ni dekani ponekad, a što zapravo ovisi o stupnju zrelosti pojedine ustanove. Čak i pojam strategije za različite ustanove znači nešto različito. Stoga, razvoj instrumenta bio bi najviša točka, a pronalazak odgovarajućeg postojećeg alata samo jedna stepenica niže.

Nadalje, važno je da lista indikatora uspjeha na Sveučilištu postoji. Evaluiraju se podaci vezani za e-učenje, provodi se istraživanje vezano za izradu kataloga/repositorija tečajeva preko e-učenja i ti će podatci uskoro biti i javno dostupni, najvjerojatnije u rujnu 2015. <http://katalog-e-kolegija.srce.hr/>

Još je jednom napomenuto kako projekt nije linearan već cikličan te se njegove faze i poklapaju, a projektni tim mora koristiti iste instrumente u sve 4 faze kako bi one bile usporedive.

| | | | |
|---------------|--|---|----|
| 15:00 – 15:45 | Presentations of four project research topics, Part IV – Evaluation of the effects of strategic decision in HE | Blaženka Divjak, Marcel Maretić, Maja Ćukušić, Andrina Granić | En |
|---------------|--|---|----|

Development of a methodological framework for strategic decision-making in higher education – a case of open and distance learning implementation

Evaluation

IP-2014-09-7854

higher DECISION

foi

Evaluation

higher DECISION

Planned – specific goals and subgoals

- To develop a methodological framework to support strategic decision making in HE:
 - To develop a methodology for evaluation of effects of strategic decisions
- Application, adaptation and validation of a given methodological framework on the example of the decision about the e-learning (ODL) implementation
 - To evaluate the effects of strategic decisions about e-learning (ODL) implementation in HE
 - Analyze effects of strategic decisions on the e-learning (ODL) implementation in HE
 - To form recommendations for the e-learning implementation in HE in Croatia

Ovaj je rad financiranje Hrvatske zaklade za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

2

Evaluation

DECISION

Planned – expected results

- Objective 1: To develop a methodological framework to support strategic decision making in HE**
 - 1.4. Methodology for evaluation of effects of strategic decisions based on the structural theory of causality**
- Objective 2: Application, adaptation and validation of a given methodological framework on the example of the decision about the e-learning (ODL) implementation**
 - 2.4. Recommendations for e-learning implementation in HE in Croatia**
- Objective 3: To establish the infrastructure for project management, dissemination and sustainability of project's results**



Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

3

Evaluation

DECISION

Possible upgrades – general methodology

| Phase of the cycle | Approaches | Specifics of HE and e-learning | Methods |
|--|---|--|--|
| Identification and research of the problem | | | |
| Development of methodology for DM | | | |
| Implementation and strategic decision monitoring | | | |
| Evaluation of effects of the strategic decisions | Qualitative, quantitative and mixed methods Structural causal models | Stakeholder perspective analysis In-depth case study to find out causes & effects | Qualitative methods - stakeholder perspective, document analysis, internal consistency of the strategy and external effectiveness, benchmarking, in-depth case study, Delphi Quantitative methods - econometric analysis, cost-benefit analysis, multi-criteria analysis and regression analysis Innovative approaches - Pearl's structural causal models |

(Divjak & Begićević, IADIS, 2015)

Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

5



Evaluation...

DECISION

Plan for 1st project year & for other project years

| | | | | |
|---|---|---|---|----------------|
| 04. To develop a methodology for evaluation of effects of strategic decisions | Analysis of problems of strategic decision making in HE from the aspect of evaluation | Characteristics of problems of strategic decision making in HE from the aspect of evaluation – review paper | B. Divjak, M. Maretic, M. Ćuković, A. Granic S. Kučina Softić | 6-8 |
| | Development of mathematical model based on causality | Mathematical model based on causality – research paper | B. Divjak, M. Maretic, M. Ćuković, A. Granic S. Kučina Softić | 10-12 13-20 |
| | Assessment of mathematical model of causality on the available data | Revision of the proposed mathematical model | B. Divjak, M. Maretic, M. Ćuković, A. Granic S. Kučina Softić | 21-25 |
| | Development of methodology for evaluation of effects of strategic decisions based on the structural theory of causality | Methodology for evaluation of effects of strategic decisions based on the structural theory of causality | B. Divjak, M. Maretic, M. Ćuković, A. Granic S. Kučina Softić | 26-30 |

Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

7



Evaluation...

DECISION

Plan for 1st project year & for other project years

| | | | | |
|---|---|--|---|----------------|
| O11. To develop a conceptual model of curriculum based on learning outcomes/competencies for delivery in (ODL - MOOC) | Selection of doctoral student for work on the research topic related to development of curriculum based on learning outcomes/competencies | Results of the selection process for doctoral student | PhD student, B. Divjak, A. Granic, M. Ćuković | 10-12 |
| O12. To analyze effects of strategic decisions on the e-learning (ODL) implementation | Development of curriculum based on learning outcomes/competencies Evaluation of effects of strategic decisions on the existing e-learning strategies (case studies ad in-depth analysis on „big data“) | Curriculum model for e-learning program (ODL) Report about the effects of existing e-strategies | PhD student, B. Divjak, M. Ćuković, A. Granic B. Divjak, M. Maretic, M. Ćuković, A. Granic S. Kučina Softić Postdoc | 13-45 20-39 |

Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8



Evaluation...

DECISION

Ovaj je rad financirala Hrvatska zgrada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Evaluation

higher DECISION

Evaluation

higher DECISION

Resources needed & team members involved

Equipment, Mobility, Conferences, Support, Field work etc. ?

Who is going to be involved?

B. Divjak,
 M. Maretić,
 M. Ćuković,
 A. Granić
 S. Kučina Softić
 Others?
 • Selection of doctoral student - prepare initial selection criteria for September (Divjak, Granić, Ćuković)
 • Characteristics of problems of strategic decision making in HE from the aspect of evaluation - review paper - how to prepare it?

Divjak, B. & Begićević Ređep, N. *Strategic Decision Making Cycle in Higher Education: Case Study of E-learning*. 9th International Conference on e-Learning. 21 – 24 July 2015. Las Palmas de Gran Canaria, Spain.

Divjak, B. & Maretić, M. *Learning Analytics for e-Assessment: The State of the Art and One Case Study*. CECIIS September 2015.

Ćuković, M.; Alfirević, N.; Granić, A.; Garača, Ž. e-Learning process management and the e-learning performance : Results of a European empirical study. *Computers & Education*, 55 (2010) , 2; 554-565.

Ćuković, Maja; Jadrić, Mario. E-učenje: koncept i primjena. Zagreb: Školska knjiga, 2012.

References



Ovaj je rad financiran Hrvatske znanosti i umjetnosti pod projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

9



Ovaj je rad financiran Hrvatske znanosti i umjetnosti pod projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

10



Zaključak:

Tijekom rasprave istaknuto je kako se evaluacija provodi iz specifičnog razloga, i to je postupak postavljanja pitanja o određenoj temi te prikupljanja podataka i analize informacija koje daju odgovor na pitanje. Evaluacija postupka ili praćenje provodi se kako bi se utvrdilo provodi li se strategija kako je bilo planirano i dopire li do željene publike. Evaluacija ishoda ili utjecaja provodi se kako bi se utvrdilo jesu li željeni strateški ishodi postignuti. Nadalje, sve strateške odluke nužno ne završavaju startegijom pa bi to također trebalo istaknuti unutar projekta.

Stateško odlučivanje o e-učenju ima nekoliko razina/aspekata koji mogu biti: 1. korištenje IT tehnologije u učionici; 2. Mješovito/hibridno učenje, 3. MOOC, 4....

Vezano uz Phase 4: *Evaluation of effects of the strategic decision*, Marcel Maretić je pojasnio teoriju/model kauzalnosti koji bi se koristio.

"J. Pearl's interpretation of causality enables quantitative modeling of causal concepts in dynamic systems. After groundbreaking work in Bayesian networks and probabilistic reasoning Pearl has been developing his structural causal models (SCMs) for the last 20 years.

Pearl's causal models created new approaches to modeling of causal queries with applications across the whole scientific spectrum (artificial intelligence, epidemiology, social sciences, imperfect experiments). Defining characteristic of SCMs is that they go beyond the black box approach of Bayesian networks or structural equations models (SEMs, when used in traditional meaning). SCM's enable explanation, prediction and even quantitative modeling of notoriously hard counterfactual queries. With counterfactual queries it is possible to reason about

effects of action that were not taken. This, for example, is useful in situations where undertaking a RCT is not feasible (the norm in Social Sciences).

With SCMs we replace informal causal utterances with probabilistic queries. For example we can say something about “why the system behaves in certain way” (explanation) or “how would the system behave under external actions” (prediction).

Causal model incorporates a so-called causal graph which elegantly and tersely encodes the relation of conditional independence that models whether Y is relevant to X given that we know Z. Beyond capturing dependence/independence of variables, SCMs require additional assumption of stability. Stability is essential for deep understanding of the system (predictable behaviour under intervention). It allows planning of actions that bring about intended effects. With SCMs we can model (and calculate) different notions of “causal effect” (i.e. direct and indirect). In certain situations causal effects cannot be calculated. It is an interesting problem to detect such situations (identifiability of causal effect) for different notions of causal effect. In initial phases of model design and later in revision we plan to use already available large data from SRCE (University of Zagreb, Computing Center).

Petak, 10. srpnja 2015.

| | | | |
|---------------|---|--------------|----|
| 10:00 – 11:00 | Case study I: University of Edinburgh – strategic planning, implementation and state of the art of e-learning | Jeff Haywood | En |
|---------------|---|--------------|----|

Strategy Development at the University of Edinburgh

Professor Jeff Haywood, Vice Principal Digital Education
 University of Edinburgh, UK

jeff.haywood@ed.ac.uk
<http://homepages.ed.ac.uk/jhaywood>



Strategy Development, Zagreb, July 2015

Be in the top 10 world universities



Some context for our strategic decision-making

The most senior roles in the university are jobs and not elected appointments – you can be fired!!

Our 3 Colleges are as large as universities – there may be different ‘patterns’ for them and that is ok

Maximise autonomy for everyone – max devolution of authority to act AND max accountability for decisions

Annual plans from Colleges and Support Groups in a 3 year rolling window with a 10 year look-ahead

Operate strategic opportunism – be agile towards the top level goal(s)

Mission

The University's mission is the creation, dissemination and curation of knowledge.

As a world-leading centre of academic excellence we aim to:

- Enhance our position as one of the world's leading research and teaching universities and to measure our performance against the highest international standards
- Provide the highest quality learning and teaching environment for the greater wellbeing of our students
- Produce graduates fully equipped to achieve the highest personal and professional standards
- Make a significant, sustainable and socially responsible contribution to Scotland, the UK and the world, promoting health and economic and cultural wellbeing.

As a great civic university, Edinburgh especially values its intellectual and economic relationship with the Scottish community that forms its base and provides the foundation from which it will continue to look to the widest international horizons, enriching both itself and Scotland.

Governance and Strategic Planning



Strategy Development, Zagreb, July 2015

Our percentage
of UK/EU graduates in
employment or further
study six months after
graduating is 93 per
cent and remains
higher than the UK
and Scottish averages.*

More than 80 per cent
of those who went into
employment entered
graduate-level jobs.

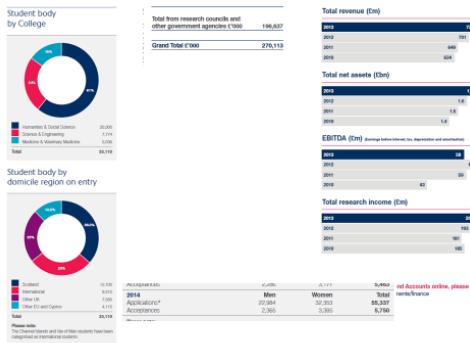
*Source: HESA Destination of Leavers
of Higher Education survey, published
July 2013.

University world
league table position* Student
numbers

| 2013 | 17th | 2013 | 32,868 |
|------|------|------|--------|
| 2012 | 21st | 2012 | 31,335 |
| 2011 | 20th | 2011 | 28,974 |
| 2010 | 22nd | 2010 | 28,394 |

*Source: QS World University Rankings.

| Staff head count to 31 July | Campuses and land area values (£m) |
|--------------------------------|---------------------------------------|
| 2013 12,560 | Central Area £737m |
| 2012 10,886 | King's Buildings £139m |
| 2011 7,828 | Western General £377m |
| 2010 7,920 | Little France £133m |
| | Easter Bush £111m |



Student body by domicile region on entry



| Student | International | Other EU & Europe | Total |
|---------|---------------|-------------------|--------|
| 10,100 | 8,031 | 1,114 | 21,245 |

Please note: The numbers and the size of student bodies have been rounded.

15%

The value of the University's research income increased by 15 per cent in 2014, making it 15 per cent higher than the previous year.

20%

The value of the University's research income increased in 2014 by 20 per cent higher than the previous year.

35:50

The University created 35 new companies and 50 spin-offs in 2014.

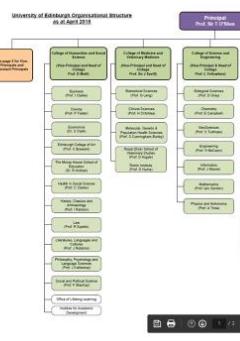
£350m

The University has a current live investment portfolio worth £350 million.

5%

In 2014/15 the ratio of operating surplus to total income was in favour of the pot still.

Strategy Development, Zagreb, July 2015



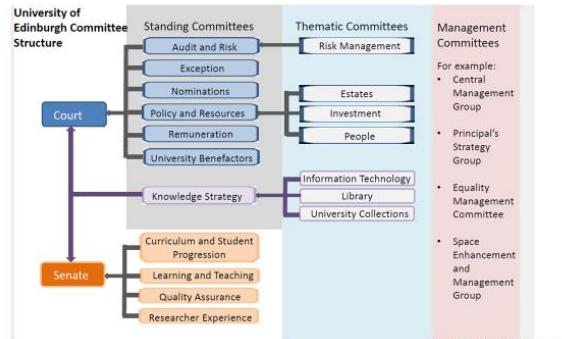
Strategy Development, Zagreb, July 2015

The challenge....

- A highly devolved University structure
- Substantial necessary diversity; some wasteful diversity
- Authority and power are distributed
- Substantial negotiation needed re change
- Consensus probably impossible; agreement can be difficult
- Too many (possibly competing) demands for change
- Hard to get good governance – at top level and project level

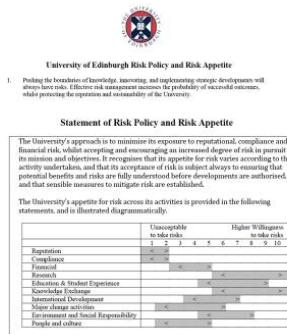
9

Strategy Development, Zagreb, July 2015



10

Strategy Development, Zagreb, July 2015



11

Strategy Development, Zagreb, July 2015

We needed to learn lessons, and apply what we had learned to ensure future change projects went as smoothly as possible, being realistic too!

Major recent/current 'change projects'

- New student record system (EUCLID) – including course & programme administration, online applications, online student self-service
- New University 'corporate website' with single content management system – devolved information input with tight central look&feel and architecture
- Shared Academic Timetabling – to encompass all teaching spaces, eventually all bookable spaces, enabling much better estate management & downscaling
- End-to-end research grant administration, incl research outputs repository & open access

Modest 'change projects' include:

- Single email+ediary, incl transfer to cloud
- Next generation VLE

Strategy Development, Zagreb, July 2015

Extract from UoE Central Management Group report on change projects

"Classifying projects

We have recently produced a project classification scheme which we propose to use to assess the scale, complexity and impact of projects.

One of the mistakes we have made in the past has been to ignore or forget the distributed cost of projects of all types (including building projects), and particularly those which involve significant business process or culture change."

12

Strategy Development, Zagreb, July 2015

13

Strategy Development, Zagreb, July 2015

Ovaj je rad financirala Hrvatska zaklada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Definitions

Project: A set of activities which are managed and coordinated together to deliver a specific outcome in a defined timescale

Major Project: A project which has a significant financial, operational, or reputational impact on the University, College or School or Support Group.

Appendix 1 provides a guide as to how to assess whether a project has sufficient impact for it to be classed as a major project

This definition covers many different types of project e.g.

- Capital and refurbishment projects
- IT focussed projects
- Projects to change the way the organisation conducts its business, processes and operations
- Organisational change projects

In assessing whether a project is a major project, there are a number of criteria that need to be considered:

- total cost of the project
- the impact of the project on staff and students
- the complexity of the project
- the reputational impact if the project runs into difficulties

15

Strategy Development, Zagreb, July 2015

Capability: Defining Strategic & Major Projects – Edinburgh Toolkit

| Project criteria | Score range | Features |
|-------------------------|-------------|--|
| Budget (gross) | 1 - 15 | <€0.5M - >€25M |
| Impact students & staff | 1 - 4 | Direct impact across U - local impacts |
| Complexity | 1 - 4 | Low - High |
| Reputation | 1 - 4 | Local - international |

If Score 20 or over, then project is a "Strategic" project

If Score is 10-19, then project is a "Major" project

For S & M Projects, Governance Board must be established as Project Oversight with Senior Responsible Owner at SMT level for 5 Projects.

Strategy Development, Zagreb, July 2015

Extract from UoE Central Management Group report on change projects

"Developing a toolkit for Project Boards

In a recent Awayday, KSC worked with our external consultants Valuta, who have considerable insight into the University's business processes and cultures as a consequence of reviewing major projects over the past few years.

We have developed a visualisation tool that may help Project Boards to ask the right questions of the project team, and have access to not only a high level view of the project as it currently stands but also a high level view of change since its initiation."

17

Strategy Development, Zagreb, July 2015

16



One interesting lesson that KSC learned from looking back at recent University projects was that each had a different radar shape, that changed little during the project, suggesting weaknesses and strengths that were not being addressed.

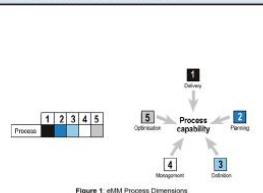
Strategy Development, Zagreb, July 2015

Maturity Models for Assessing Capability

BENCHMARKING INTERNATIONAL E-LEARNING CAPABILITY WITH THE E-LEARNING MATURITY MODEL

S Marshall, Victoria University of Wellington, Wellington, New Zealand
G Mitchell, Queensland University of Technology, Queensland, Australia

| Process category | Brief description |
|------------------|---|
| Learning | Processes that directly impact on pedagogical aspects of e-learning |
| Development | Processes surrounding the creation and maintenance of e-learning resources |
| Coordination | Processes surrounding the oversight and management of e-learning |
| Evaluation | Processes surrounding the evaluation and quality control of e-learning through its entire lifecycle |
| Organization | Processes associated with institution planning and management |



18

Strategy Development, Zagreb, July 2015

Digital education – now and to 2025

Strategy Development, Zagreb, July 2015

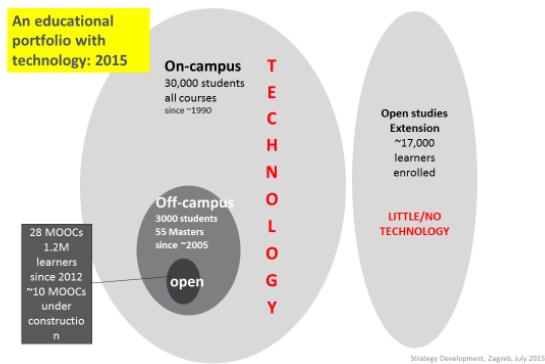


21

Strategy Development, Zagreb, July 2015



Strategy Development, Zagreb, July 2015



23

Exploring the leading edge of taught online education

The screenshot shows the University of Edinburgh's website for the MSc in Digital Education. It features a blue header with the university logo and a running hare silhouette. Below the header, there are tabs for Home, About, Courses, Progression Team, Enrolments, Students, and Contact. A sidebar on the left lists related links such as The University of Edinburgh, Royal College of Surgeons in Edinburgh, MSc in E-Learning Unit, Markets for teaching online, Digital culture and education research group, Apply online, and OUR STUDENTS HAVE SAID. A note at the bottom says: 'PLEASE NOTE: You need to make your programme application before you can apply for one of these scholarships. The deadline for applications is 15 September 2015.'

Strategy Development, Zagreb, July 2015

Advanced Continuing Professional Development Online

The screenshot shows the ChM in General Surgery website. It features a banner for 'Edinburgh Specialist Surgical Qualification' and a section for 'ChM Overview' which describes it as a flexible two-year part-time Masters programme. There are also sections for 'Programme Structure' and 'Apply'.

25

24

MOOCs

The screenshot shows the University of Edinburgh's website with a banner for 'Influencing the world since 1583'. Below it, there are several thumbnail images for different MOOCs: 'Werfel' (Date to be announced), 'Philosophy and the Sciences' (Date to be announced), 'Animal Behaviour and Welfare' (Date to be announced), 'EDVET: Do you have what it takes to be a veterinarian?' (Date to be announced), 'Ergonomics' (Date to be announced), 'Introduction to the Clinical Psychology of Children and Young People' (Date to be announced), and 'Astrophysics: The Science and Technology of Space Discovery' (Date to be announced).

26

27

Strategy Development, Zagreb, July 2015

1.4 million sign ups - over 1 million unique people enrolled

10.5 million video views

1.9 million quizzes submitted

667,967 active learners

353,934 forum posts made

88,845 completion certificates awarded

745+ videos made

218 countries represented

85 academics + 109 TAs involved

38 live course iterations

24 courses

15 academic schools

6 core staff

2 platforms

2.5 years

DATA...*

Strategy Development, Zagreb, July 2015

Why is University of Edinburgh doing this?

- Reputation – early adopter of educational technology
- Exploration of a new pedagogical 'space' to inform practice
- Wish to reach as widely as we can with our courses
- Sharing experiences with peer universities
- Fun!

Not money....

The screenshot shows the Critical Thinking in Global Crisis website. It features a banner for 'Critical Thinking in Global Crisis' and a section for 'Critical Thinking in Global Crisis: Strategic Data'. Below the banner, there is a grid of cards with titles like 'How to think like a critical thinker', 'Critical thinking skills', 'Critical thinking in global crisis', and 'Critical thinking in global crisis: Strategic Data'.

28

29



Strategy Development, Zagreb, July 2015

Governance for online learning & for MOOCs

Agile when necessary (MOOCs), standard processes when not (ODL)

Educate the governance participants rather than create additional mechanisms

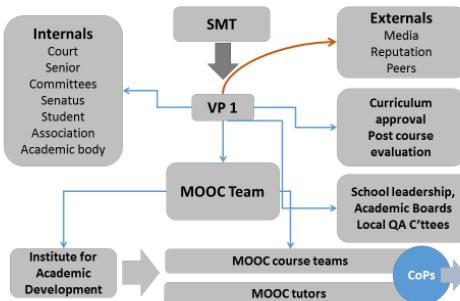
Quality management throughout

Explicit risk assessment & risk mitigation

Understanding & exposing return on investment

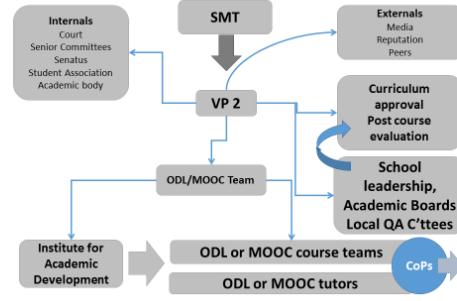
Trust, trust, trust

Governance: major strategic project - MOOCs



31

Governance: ODL or MOOC as normal business



Strategy Development, Zagreb, July 2015

Managing the operations

Must feel fast, efficient, effective and fun

- Online (distance) learning**
Investment - €5M + academic time + central team – long term
Invest in business cases (academic AND financial)
Targets – 10,000 learners online/off-campus – all 23 Schools involved
Challenges – redesigning services, reshaping income flows, marketing



Strategy Development, Zagreb, July 2015

Must be even faster, even more efficient & effective and lots of fun!

- MOOCs**
Investment – unknown in advance, re-assess regularly – duration??
Used ODL team+; new video studio/producer/custom video training;
Schools 'only' contributed academic time; central team took all admin load with Coursera/internal processes; full copyrights / accessibility service;
Targets – explore pedagogical challenges, reach new audiences, enhance reputation, collaborate with peers
Challenges – high but uncertain risks, high speed, became politicised



33

Lessons learned

- ✓ We can blend the best of cottage industry with industrial strength
- ✓ Agility can be with high quality
- ✓ Excellent people – we have, MUST KEEP, need more!
- ✓ We have strong backing from governors and alignment in SMT
- ✓ We understand our appetite for risk



IS Technology Enhanced Learning Strategy

2014-2017



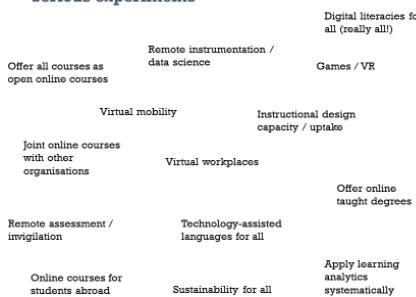
2014-2017

Learning Technology Overview



Strategy Development, Zagreb, July 2015

"Serious experiments"



37

Strategy Development, Zagreb, July 2015

Key current strategic initiatives

The following University Initiatives involve IS TEL teams and offer opportunities for the TEL strategy:

- Student Experience Project (Personal Tutors, Peer Support, Induction and Pre-arrival etc.)
- MOOCs (Coursera and FutureLearn)
- Open Educational Resources Initiative
- The Distance Education Initiative (DEI)
- Transforming Assessment Programme or TAP (HEA supported)
- LEAF (Leading Enhancement in Assessment and Feedback)
- PCIM (Programme and Course Information Management)
- The Edinburgh Award

38

Strategy Development, Zagreb, July 2015

Home > Academic Services > Projects > Developing a Learning and Teaching Vision

Contact us

Developing a Learning and Teaching Vision

The University is in the process of developing a Vision that will guide developments in Learning and Teaching for the next ten years.

Overview

Over the last few years, the University has undertaken strategic projects to enhance student academic and pastoral support (via the Enhancing Student Support project) and broader student services (via the Student Experience project). It has also strengthened academic staff development via the enhanced professional development for Academic Staff. This is continuing to incorporate an annual award for excellence in teaching. The University is also currently developing ideas regarding the future use shape of the institution (which have been used for how the University approaches learning and teaching), and has consulted on a new project to enhance support for Postgraduate Research Students.

The University is now planning to focus its attention on learning and teaching, building on lessons learned through engagement with the National Student Survey, by developing a Vision that will guide developments for the next ten years. During 2014-15 there will be an extensive process of consultation with staff and students regarding the Vision.

Further information about the development of this Vision:

39

Strategy Development, Zagreb, July 2015

- Learning and teaching in 2020
1. A portfolio approach for an unpredictable future – making the most of the Scottish degree
 2. Giving students agency to create their own learning – students at the centre, not degree programmes
 3. Extend learning beyond the traditional knowledge-centred course – eg international experience, service learning, self-defined projects, entrepreneurship
 4. Every student a researcher or practitioner - joined at the hip to a research group from year 1, offered a higher degree place on attainment of a good degree
 5. Course design for 21st century learners – appropriate use of technology and student centred learning
 6. Focus on multiple learning styles and learning for life – at least one online course taken by all students, explicit reflection on learning style and capacity

Strategy Development, Zagreb, July 2015

About
Policy and guidance
Pay & reward
Recruitment
Vacancies
Staff rewards
News
HD Business Systems
Forms
People Committee

Related links
Equality and Diversity
Staff Counselling service
Training, Learning and Development
VBL courses

Academic staff
Procedures and criteria
Grading & Re-grading Processes and Principles
Academic Promotion Process
Exemplars of Excellence in Student Education
Award of Title
Guidance and Criteria for Title of Personal Chair

An educational portfolio with technology: c2025

On-campus AND off-campus
40,000 students, all with at least one fully online course

Off-campus
10,000 students
100 Masters
10s of PGs

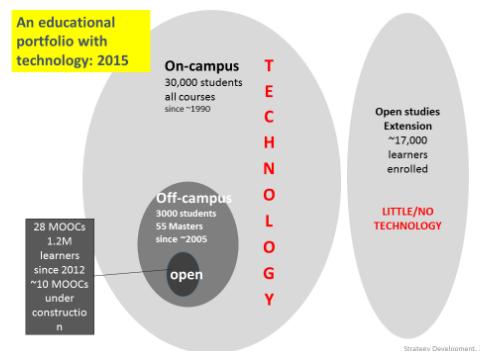
Open studies Extension
~17,000 learners enrolled

100s MOOCs
1000s OERs
10,000,000 learners since 2012

41

Strategy Development, Zagreb, July 2015

42



Strategy Development, Zagreb, July 2015

An educational portfolio with technology: c2025

On-campus AND off-campus
40,000 students, all with at least one fully online course

Off-campus
10,000 students
100 Masters
10s of PGs

Open studies Extension
~17,000 learners enrolled

100s MOOCs
1000s OERs
10,000,000 learners since 2012

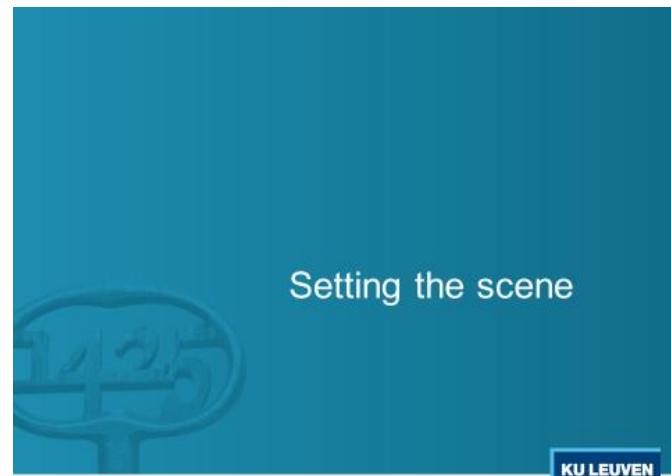
T E C H N O L O G Y

43

Strategy Development, Zagreb, July 2015



| | | | |
|-------------|---|-----------------|----|
| 11:15-12:00 | Case study I: K.U. Leuven – strategic planning, implementation and state of the art of e-learning | Wim van Petegem | En |
|-------------|---|-----------------|----|



KU Leuven: Facts and figures



- Founded in 1425**
Largest university in Belgium:
- > 50.000 students
 - > 7.500 international students
 - > 15.000 staff members
 - 4500 researchers: 1250 sr + 3250 jr
 - 3 groups, 16 faculties, >50 departments
 - campuses in more than 10 cities
 - 30 libraries
 - 5 hospitals

3

Association KU Leuven: Multicampus



KU LEUVEN

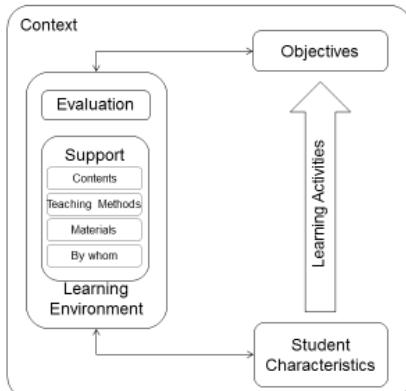
A vision on teaching and learning

- The University community as a whole is involved in education
- A stimulating educational culture ensures the quality of education
- Academically trained students can play a responsible role in society
- The programmes on offer are defined by research and social relevance
- Students, lecturers and teaching support staff are partners in education
- The University community fosters openness and solidarity



KU LEUVEN

A framework for teaching and learning



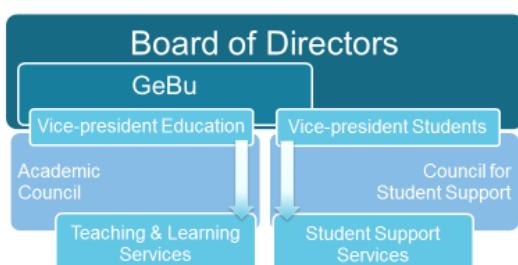
KU LEUVEN

A stimulating learning environment



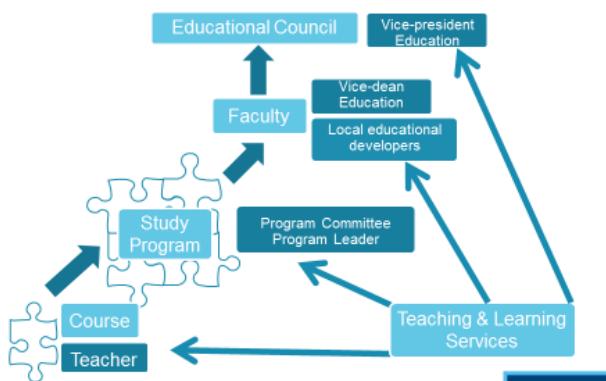
KU LEUVEN

Responsibilities for Decision making



KU LEUVEN

Responsibilities for Teaching and Learning



KU LEUVEN

Trends, drivers and sources of inspiration for Strategic Decision Making and Implementation

KU LEUVEN

Strategic Decision Making, driven by...



KU LEUVEN

Strategic Decision Making, driven by...



KU LEUVEN

Learners say: "Challenge us!"



What a boring program... Let's switch to another channel...

KU LEUVEN

AGORA, a new learning space



© Joris Snaet, KU Leuven

KU LEUVEN

Strategic Decision Making, driven by...



KU LEUVEN

Millennium student characteristics



Cf. New Millennium, New Student, M. Moonen, MSc Thesis, KU Leuven, 2012

- ICT-minded
- Multitasking
- Media literate
- A-linear, a-synchronous
- Explorative, interactive
- With a positive attitude
- Target oriented
- Social, connected
- As partners with educators
- ...

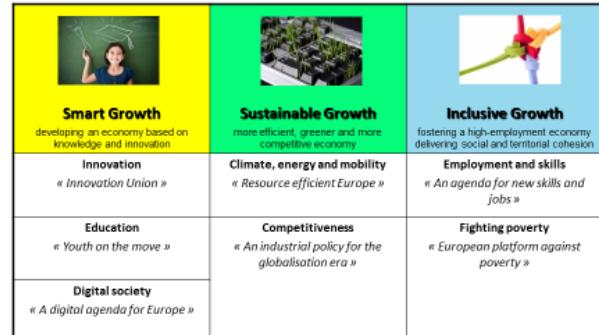
KU LEUVEN

Strategic Decision Making, driven by...



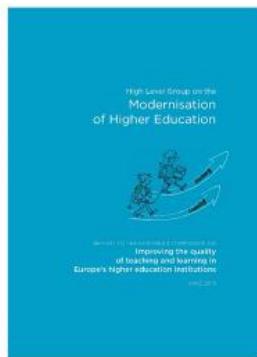
KU LEUVEN

Europe 2020



KU LEUVEN

High level group



KU LEUVEN

Guiding principles

- teaching and learning are fundamental core missions of our universities and colleges;
- active student involvement is essential in governance, curricular design, development and review, quality assurance and review procedures;
- the preference of research over teaching in defining academic merit needs rebalancing;
- academic staff are employed not just to teach, but to teach well, to a high professional standard;
- it is a key responsibility of institutions to ensure their academic staff are well trained and qualified as professional teachers and not just qualified in a particular academic subject;

KU LEUVEN

Guiding principles (ii)

- this responsibility extends to ensuring new staff have a teaching qualification or equivalent on entry or have access to credible teacher training courses in the early years of their career;
- this responsibility extends to providing opportunities for continuous professional career development as a professional teacher and not just as a subject/discipline specific academic;
- it is a key responsibility of academic staff to ensure they are qualified to teach and able to teach well; and
- this responsibility extends over their entire career from start to finish so that they remain up-to-date and proficient in the very best pedagogical practices and all that excellence in teaching requires.

KU LEUVEN

Recommendation 2

Every institution should develop and implement a strategy for the support and on-going improvement of the quality of teaching and learning, devoting the necessary level of human and financial resources to the task, and integrating this priority in its overall mission, giving teaching due parity with research.



KU LEUVEN

Recommendation 11

Higher education institutions – facilitated by public administrations and the EU – should support their teachers so they develop the skills for online and other forms of teaching and learning opened up by the digital era, and should exploit the opportunities presented by technology to improve the quality of teaching and learning.



KU LEUVEN

Recommendation 13

The European Union should support the implementation of these recommendations, in particular through promoting:

- Innovative teaching and learning methodologies and pedagogical approaches
- Guidance, counselling and coaching methods
- Improved programme design, taking account of the latest research on human learning
- The professionalisation and development of teachers, trainers and staff
- Mobility and exchanges of academic staff for long-term teaching assignments
- Systematic and regular data collection on issues affecting the quality of teaching and learning



KU LEUVEN

Strategic Decision Making, driven by...



KU LEUVEN

Learning in a changing world



Sorry, no I cannot deliver your pizzas in an attachment, but I am learning to

From learning to e-learning, m-learning, u-learning learning 2.0,... back to learning

KU LEUVEN

iLearning



Higher education is international, intercultural, intergenerational, interdisciplinary,

...
 thanks to
 (or despite?)
 new educational technologies

Technology trends anno 2015

Key Trends Accelerating Higher Education Technology Adoption



- **Short-term Trends:** Driving changes in higher education over the next one to two years
 - Increasing Use of Blended Learning
 - Redesigning Learning Spaces
- **Mid-Term Trends:** Driving changes in higher education within three to five years
 - Growing Focus on Measuring Learning
 - Proliferation of Open Educational Resources
- **Long-Term Trends:** Driving changes in higher education in five or more years
 - Advancing Cultures of Change and Innovation
 - Increasing Cross-Institution Collaboration

KU LEUVEN

Technology trends anno 2015 (II)

Significant Challenges Impeding Higher Education Technology Adoption



- **Solvable Challenges:** Those that we understand and know how to solve
 - Blending Formal and Informal Learning
 - Improving Digital Literacy
- **Difficult Challenges:** Those we understand but for which solutions are elusive
 - Personalizing Learning
 - Teaching Complex Thinking
- **Wicked Challenges:** Those that are complex to even define, much less address
 - Competing Models of Education
 - Rewarding Teaching

KU LEUVEN

Technology trends anno 2015 (III)

Important Developments in Educational Technology for Higher Education

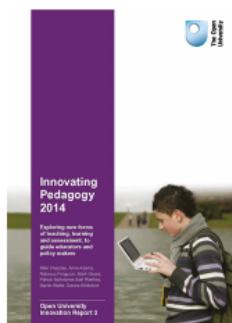


- **Time-to-Adoption Horizon: One Year or Less**
 - Flipped Classroom
 - BYOD
- **Time-to-Adoption Horizon: Two to Three Years**
 - Makerspaces
 - Wearable Technologies
- **Time-to-Adoption Horizon: Four to Five Years**
 - Adaptive Learning Technologies
 - The Internet of Things

KU LEUVEN

Innovating Pedagogy 2014

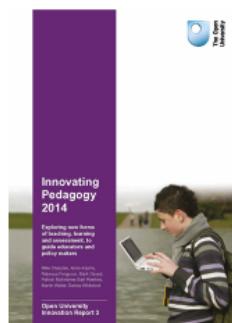
- **Massive open social learning**
 - Free online courses based on social learning
- **Learning design informed by analytics**
 - A productive cycle linking design and analysis of effective learning
- **Flipped classroom**
 - Blending learning inside and outside the classroom
- **Bring your own devices**
 - Learners use their personal tools to enhance learning in the classroom
- **Learning to learn**
 - Learning how to become an effective learner
- ...



KU LEUVEN

Innovating Pedagogy 2014 (cont)

- ...
 - **Dynamic assessment**
 - Giving the learner personalized assessment to support learning
 - **Event-based learning**
 - Time-bounded learning events
 - **Learning through storytelling**
 - Creating narratives of memories and events
 - **Threshold concepts**
 - Troublesome concepts and tricky topics for learning
 - **Bricolage**
 - Creative tinkering with resources



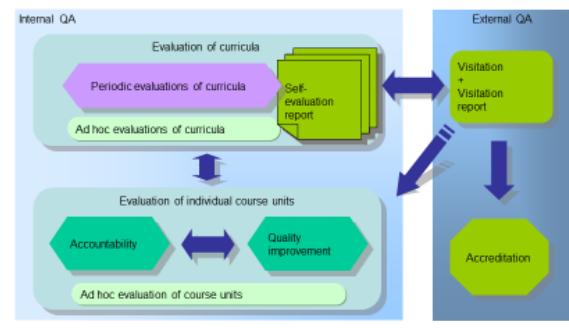
KU LEUVEN

Strategic Decision Making, driven by...



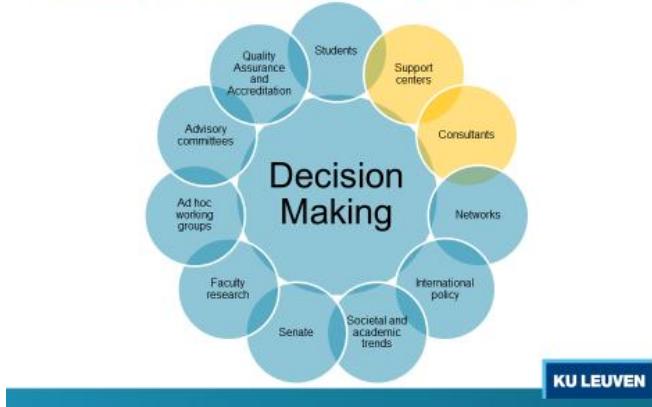
KU LEUVEN

Quality assurance



KU LEUVEN

Strategic Decision Making, driven by...

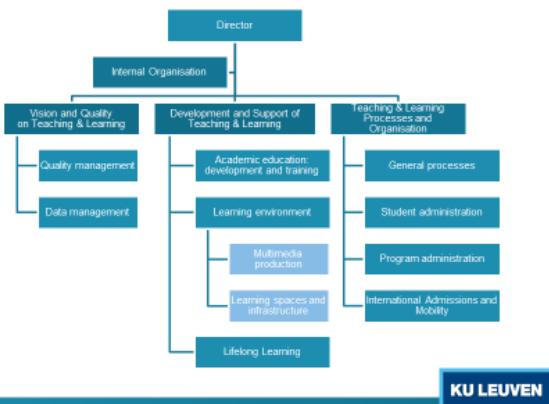


Support from different perspectives

- Multidisciplinarity:**
 - Pedagogical, didactical, technological, mediawise, organisational, managerial, operational
- Service orientation:**
 - For all 'customers', students, teachers and all other (teaching) staff members
 - 'Your question is our question'
- Justification:**
 - Demand driven, contextual, societal relevant, scientifically based, pro-active and innovative, open and transparent

KU LEUVEN

An organisation structure



In collaboration with...

- Council for Education
- Faculties
- Student Services
- International Office
- Technical Services
- Computer/ICT Center
- Libraries
- Consultants
- ...

KU LEUVEN

A three-tier support model

- Do it yourself:** We stimulate teachers (students) to work autonomously on their projects with their own tools and instruments: focus on simple and cheap solutions.
- We do it together:** We offer teachers (students) advice, instruments and facilities (for free) to work on their own with (our) professional tools and our infrastructure.
- We do it for you:** We take over all responsibility and solve your problem for you (not completely for free).

Human capital



KU LEUVEN

Infrastructure

- video and sound studio
- 6 video editing suites
- multi camera production facilities
- recording and duplication facilities
- video- and webconferencing
- multimedia management system
- streaming media and podcasting
- documentation and information centre
- AV rental service
- social software: wiki, weblog, etc.
- welecture infrastructure
- flexible learning room



KU LEUVEN

KU LEUVEN

Strategic Decision Making, driven by...



KU LEUVEN



KU LEUVEN

Strategic Decision Making, driven by...



KU LEUVEN

Finances

- Central working budget from the university
- + internal project budget
- + external project budget
- Invoicing: partial financing by commissioners or customers
 - 100% out-of-pocket cost +
 - 75% of personnel cost and infrastructure

Networking and Representation

- Within the own institution
 - ICT committee, Library committee,...
- Within the region/country
 - Ministry/Department of Higher Education, Media, Innovation, Labour, Development Cooperation,...
- International networking
 - EDEN, EADTU, IAMS, ICEM, SEFI, CAWO, IACEE, EUCEN, LERU, Coimbra, EuroPACE,...

MOOCs: the future?

coursera

edX

F/L
FUTURELEARN

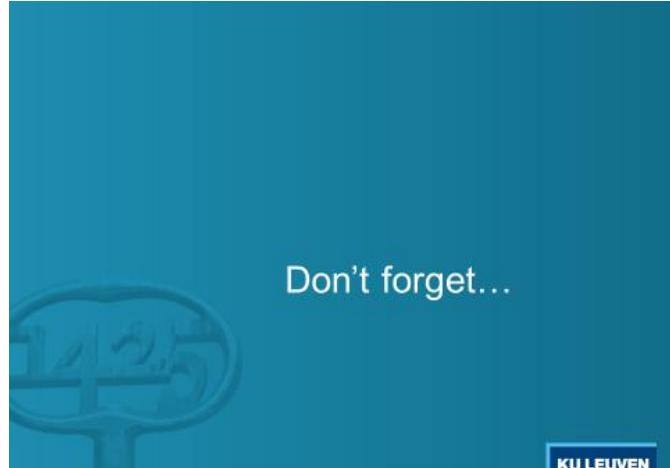
UDACITY

PEARSON

acco

KU LEUVEN

Role of academic publishers



Core values

- **Service orientation:**
 - your problem is our problem and we solve it together
- **Excellence:**
 - highest professional quality possible within preset boundaries
- **Responsibility:**
 - for all what we do and what we have
- **Respect:**
 - for all individuals, their work and their competences
- **Openness:**
 - broad view and susceptible for innovative stimuli
- **Sustainability:**
 - effective and efficient use of resources (time, money, people, space, infrastructure, and power)

Questions? Suggestions?



Info

Prof.dr.ir. Wim Van Petegem
KU Leuven
W. De Croylan 56, B-3001 Heverlee (Belgium)
T: +32-16-32.78.13
F: +32-16-32.82.70
M: +32-477-77.22.86
S: wvanpetegem
E: wim.vanpetegem@kuleuven.be
L: <http://be.linkedin.com/in/wimvanpetegem>



KU LEUVEN

Nakon prezentacija međunarodnih stručnjaka otvorena je rasprava u formi okruglog stola svih sudionika na projektu.

| | | | |
|---------------|--|-----------------|----|
| 12:15 – 13:00 | Round table discussion of the lessons learned from previous case studies + inputs from Croatian universities/faculties | Blaženka Divjak | En |
|---------------|--|-----------------|----|

Uvodno, Wim Van Petegem istaknu je kako na Sveučilištu u Leuvenu provode se izbori za rektora svake 4 godine, dok se strateški planovi usvajaju na razdoblje od 5 godina. Ipak novoizabrani rektor može odlučiti se za novi strateški plan. U tom kontekstu važno je istaknuti da pored rektora postoji i pozicija *Chief Operating Officer - COO* čiji je izbor neovisan o promjeni rektora i to je osoba koja vodi brigu o poslovanju sveučilišta poput generalnog direktora brine o upravljanju i financijama pa rektor u tom smislu nije potpuno neovisan i sloboden u donošenju odluka.



Na pitanje o vezi s ministarstvom ističe kako na sveučilištu postoji tzv. Izvršno vijeće u kojem se nalazi i predstavnik ministarstva, i koji time iako nema pravo glasa ima mogućnost blokirati odluke koje nisu u skladu s politikama ministarstva, a poglavito vezano uz financije i ljudske resurse. Npr. zapošljavanje novih profesora nije moguće ako je proračun za to već promašen.

Također, za razliku od poduzeća, studenti su uključeni u postupak donošenja odluka na sveučilištu. Oni su često i glavni akteri procesa, ali specifično je također za njih da su oni samo privremeni partneri jer svatko od njih u sustavu ostaje nekoliko godina (4-5).

Dodatno, Jeff Haywood je za Sveučilište u Edinburgu istaknuo kako je ono, kao i svako drugo sveučilište u Velikoj Britaniji, potpuno autonomno. Ministarstvo nije uključeno u njihove procese odlučivanja jer Sveučilište puno zarađuje i time je slobodno. Profesionalizirani su i posluju kao poduzeća, a dobivaju puno sredstava i iz privrede. Kao i u poduzeću koje promijeni menadžment, tako je na sveučilištu kada promijeni rektora to ima značajne posljedice. U njihovu slučaju rektor ostaje na dužnosti 5 godina i nakon toga odlazi na volonterskoj bazi. Također, ističe kako takvo sveučilište ima puno prostora za slobodno djelovanje, vrlo su selektivni i odbijaju do 18 od 20 prijavljenih studenata, novac koji dolazi od države je za podučavanje (engl. teaching) i o njemu se pregovara.

Puno toga o čemu brinu druga sveučilišta oni izdvaje u posebna poduzeća, npr. smještaj za studente. Tako sveučilište zapravo vodi velike kompanije, pokreće se temeljem korporativnog odlučivanja i sve je profesionalizirano, vanjski stručnjaci rade taj zahtjevan posao. Samo 1/3 ukupnog proračuna Sveučilišta dolazi iz Državnog proračuna što ujedno znači veliku slobodu.

Nakon toga članovi projekta imali su priliku postaviti specifična pitanja vezana uz njihove teme rada unutar projekta, a nastavno na rasprave koje su pokrenute dan ranije.

Nakon okruglog stola bilo je organizirano predstavljanje istraživača u projektu koji su na početku svoje znanstvene karijere. Mladi znanstvenici predstavili su svoja doktorska istraživanja vezana uz projekt te je nakon toga bio organiziran rad stručnjaka u 2 fokus grupe kako bi mladi znanstvenici preko vođenih rasprava i upitnika dobili konkretne odgovore za nastavak rada u okviru doktorskih istraživanja. U nastavku su njihova uvodna izlaganja.

| | | | |
|---------------|-----------------------------------|-----------------------|----|
| 14:15 – 15:00 | Doctoral student: Research case I | Katarina Pažur Aničić | En |
|---------------|-----------------------------------|-----------------------|----|



Research topic

- Relevance

- At the level of EHEA, strengthening the potential employability of young people was set as one of key development priorities
 - Projects:** TUNING, CHEERS, REFLEX, HEGESCO, DEHEMS i EMCOSU - extensive comparisons of graduates from different countries in transition from education to the labor market
 - Europe 2020:** initiatives Innovation Union, Youth on the move i An Agenda for new skills and jobs
 - RH:** Strategy of Education, Science and Technology for the Republic of Croatia
- A systematic literature (SLR) on the education and career development of future professionals in the field of ICT was conducted by the author, on 7179 paper in five databases: IEEE, ACM, SCOPUS, ScienceDirect i WoS



Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Research topic

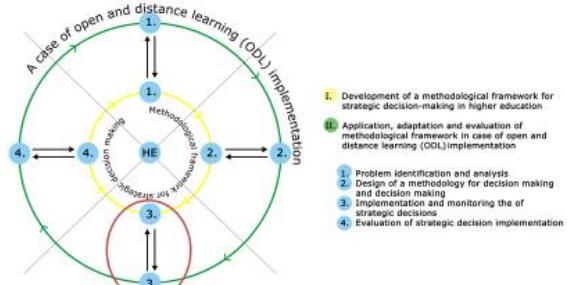
- Maturity models

- The capability of higher education system to provide students support in their early career development, which is highly mature and contribute to the better employment of graduates, is of high importance.
- Maturity models (MM) can be classified as:
 - theoretical conceptual models,
 - with a main purpose to provide guidance through an evolutionary process (Mettler, Mettler & Rohner),
 - including a sequence of levels/stages which form
 - a logical path of how organizational capabilities evolve from an initial stage to maturity (Pöppelbuß).

Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

3

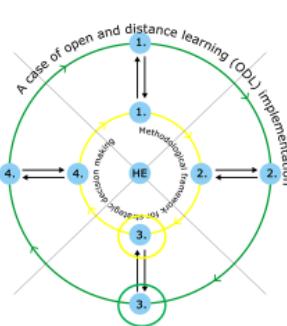
Relation to HigherDecision project



Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

4

Relation to HigherDecision project



03. To develop a methodology for monitoring the strategic decisions' implementation
 A3.3. Development of the model for the organizations/institutions assessment maturity for the strategy implementation preparing students for their early careers

O10. To assess the maturity and success of the e-learning strategy institutions in preparing graduates for their early careers
 A10.1. Development of model for assessing the maturity and success of e-learning strategy HEI in preparing students for their early careers
 A10.2. Evaluation of model for assessing the maturity and success of e-learning strategy implementation in HE HEI in preparing students for their early careers



Ovaj je rad financirala Hrvatska zakađa za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

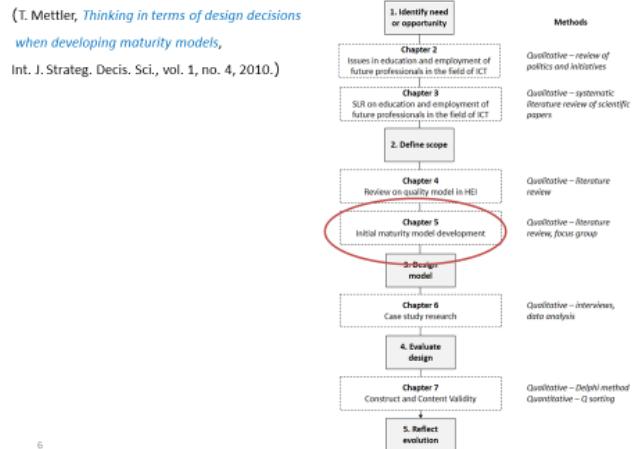
5

Research steps in maturity model design

(T. Mettler, *Thinking in terms of design decisions*

when developing maturity models,

Int. J. Strateg. Decis. Sci., vol. 1, no. 4, 2010.)



6

Maturity model example

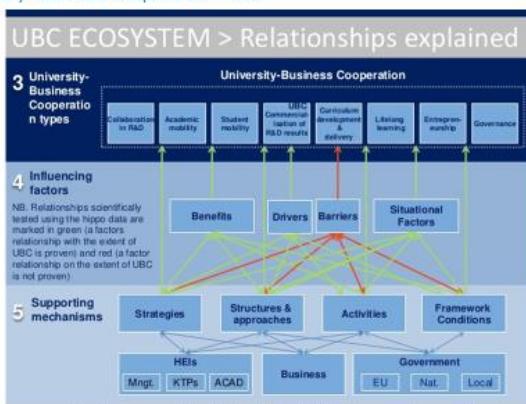
| PM Maturity Roadmap: People, Process, Tools and Governance | | | | | |
|--|---|--|---|---|--|
| | Level 1 Initial/Ad Hoc | Level 2 Planned/Repetable | Level 3 Defined/Organized | Level 4 Integrated/Managed | Level 5 Optimize/Sustain |
| Overview | During crises, plans are often abandoned. Projects are often non-critical and intended to be ad hoc & occasionally chaotic. | Basic PM disciplines have now been introduced, although execution may still differ considerably from project to project. | Formal project planning, process & controls are introduced, although execution may still differ considerably from project to project. | Program & project performance have been improved through management decision-making to better align business objectives as a strategic enabler. | Emphasis has shifted to continuous PM and alignment of PM with current business objectives as a strategic enabler. |
| People | Project success often relies on the heroic effort of individuals & on-the-job learning. | Guidelines exist for project roles & training, but this often conflicts with daily priorities. | Formal training & mentoring exists; right people & skills are assigned to projects. | PM competencies formally sponsored, projects perceived as "fast-track" career path. | Corporate training advanced project roles & training, with responsibility allocated by value. |
| Process | Even if defined, the processes tend to be discretionary & yield unpredictable results. | Compliance to minimum standards has been achieved, improved repeatability. | Enterprise processes ensure consistent results & measurement with some flexibility. | Proven processes used to measure/reanalyze cost-benefits, resources & value delivery. | PM is a core business processes fully integrated with a focus on business value. |
| Tools | Lack of transparent tools, process & training makes it hard to report on project status. | Considered but not fully integrated, collaboration & financial baselines for status reporting. | PM tool/training seen within corporate culture with focus on performance measurement. | PM & business processes integration improves forecasting, analysis & benchmarking. | PM & business processes are fully integrated, used at all organization levels. |
| Governance | Most projects managed in an unstructured, ad-hoc governance or executive sponsorship. | Key projects seen as important, but data not yet gathered to executive governance. | Enterprise PM data used for decision-making. | Project objectives are explicitly linked to executive & support executive decision-making. | Projects managed as part of the corporate culture, funding prioritized by corporate vision. |

<http://www.pcubed.com/bulletins/2009.09/img/fig.5.1.gif>

7

8

Elements of HEI important for maturity model (1/3) – University-business cooperation model



http://ec.europa.eu/education/tools/docs/uni-business-cooperation_en.pdf

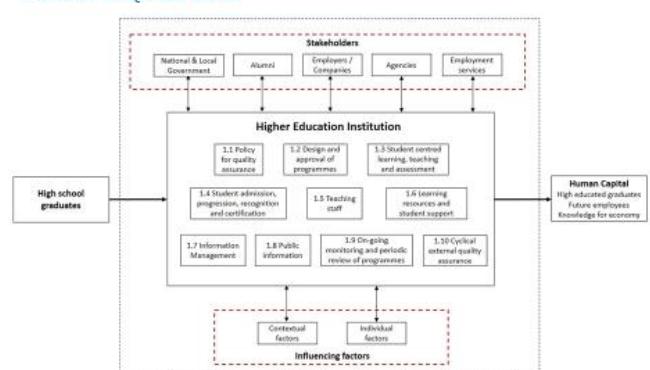
9

| Key areas | Elements | Maturity level | | | | |
|-----------|--------------------------|----------------|-------------|-------------|-------------|-------------|
| | | 1 | 2 | 3 | 4 | 5 |
| Strategy | Element ₁ | Description | Description | Description | Description | Description |
| | ... Element _n | | | | | |
| Teaching | | | | | | |
| Finance | | | | | | |
| ... | | | | | | |



Ovaj je rad financirala Hrvatska zakađa za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

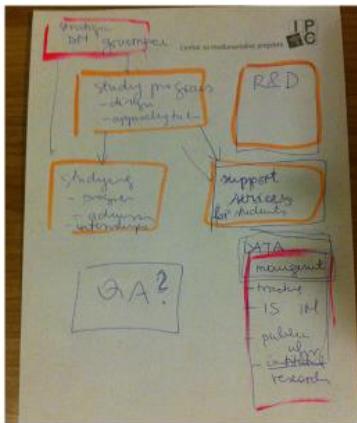
Elements of HEI important for maturity model(2/3) – Based on ENQA standards



10

Based on ENQA standards: <http://www.enqa.eu/index.php/home/esg/>

Elements of HEI important for maturity model(3/3) –
(Divjak, Pažur Anićić, In progress)



11

Figure 2.3: Transition from Education to the World of Work – A System-Level Comparison



Source: Svetlik and Pavlin (2009); conceptual draft paper.

12

higher DECISION

Focus group

o Main goal

General

- To provide inputs for the development of initial maturity model that will be upgraded through case studies

Specific

- To determine **maturity dimension (key areas)** of higher education system important for the employability of graduates

Focus group – Exploration Questions

Question 1

According to your opinion, which are the most important HEI's **key areas (activities, structures, processes, actors...)** in preparing students for their early careers?

Question 2

At you institutions, who are the **key persons** that could help in determining all the elements withinin HEI contributing to students' employability?



Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

13



Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

14

higher DECISION

Maturity model framework



| Maturity dimension | Elements | Maturity level | | | | |
|--------------------|---|----------------|-------------|-------------|-------------|-------------|
| | | 1 | 2 | 3 | 4 | 5 |
| Strategy | Element ₁ ... Element _n | Description | Description | Description | Description | Description |
| Teaching | | | | | | |
| Finance | | | | | | |
| ... | | | | | | |

Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

15

References

- Creswell, J.W., *Research Design, Qualitative, Quantitative, and Mixed Method Approaches*, Third Edition, Sage, 2009
- Employability of Graduates and Higher Education Management Systems*, Final report of DEHEMS project, University of Ljubljana, Faculty of Social Sciences, 2012.
- European Commission, *An agenda for new skills and jobs: A European contribution towards full employment 2010*.
- European Commission, *Europe 2020: A strategy for smart, sustainable and inclusive growth*, 2010.
- T. Mettler and P. Rohner, *Situational maturity models as instrumental artifacts for organizational design*, Proc. 4th Int. Conf. Des. Sci. Res. Inf. Syst. Technol., 2009.
- J. Pöppelbuß and M. Röglinger, *What makes a useful maturity model? A framework of general design principles for maturity models and its demonstration in business process management*, European Conference on Information Systems (ECIS) 2011
- A. R. Heyner, S. T. March, J. Park, and S. Ram, *Design Science in Information System Research*, MIS Q., vol. 28, no. 1, pp. 75–105, 2004.
- T. Mettler, *Thinking in terms of design decisions when developing maturity models*, Int. J. Strateg. Decis. Sci., vol. 1, no. 4, 2010.
- K. M. Eisenhardt, *Building Theories from Case*, Acad. Manag. Rev., vol. 14, no. 4, pp. 532–550, 2008.
- R. K. Yin, *Case Study Research: design and method*, 5th ed. Sage Publications, Inc., 2014, p. 282.

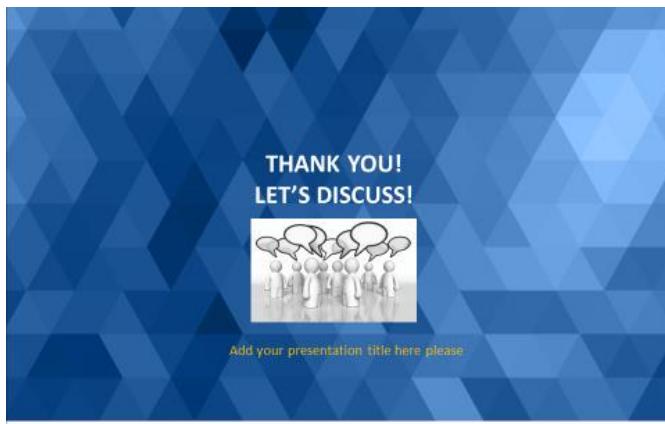


Ovaj je rad financiran Hrvatskom znanostnim projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

16

Ovaj je rad financirala Hrvatska zaklada za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.



higher DECISION



| | | | |
|-------------|------------------------------------|-------------|----|
| 15.15-15.45 | Doctoral student: Research case II | Sanjana Buć | En |
|-------------|------------------------------------|-------------|----|



higher DECISION



A.1.1. Development of draft of the model of diffusion of innovations. higher DECISION

Planned within the application

1. Specific goal:

To develop a methodological framework to support strategic decision making in HE

| Objectives | Activities | Outputs – Milestones (M) and/or Deliverables (D) |
|--|---|---|
| O1. To develop a methodology to identify and research problems in HE | A.1.1. Development of draft of the model of diffusion of innovations A.1.2. Conducting qualitative study with experts (Delphi, focus groups, nominal group technique) A.1.3. Development of final model of diffusion of innovations | D.1.1. Draft of the model of diffusion of innovations in the HE D.1.2. Results of qualitative research D.1.3. The model of diffusion of innovations in the HE |



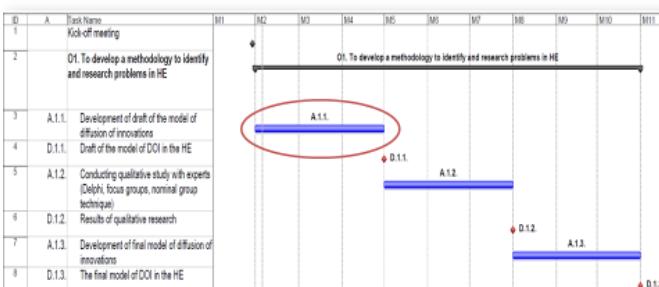
Ovaj je rad financiran Hrvatskom zavodom za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

2

A.1.1. Development of draft of the model of diffusion of innovations.

Plan

Plan



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

3

A.1.1. Development of draft of the model of diffusion of innovations.

Diffusion of innovations (Rogers, 2003.)



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

4

Innovation diffusion model in higher education: case study of e-learning diffusion

Sanjana Buć¹ and Blaženka Divjak²
¹Faculty of OH, JUZ, Zagreb, Croatia, ²Faculty of Organization and Informatics, Varaždin, University of Zagreb, Croatia

Introduction
The paper presents the results of the research on the process of diffusion of innovation in higher education. The research was conducted in the period from January 2012 to December 2013. The research was conducted in the Faculty of Organization and Informatics, Varaždin, University of Zagreb. The research questions were: How is a model DOI in HE developed? What are the factors influencing the implementation?

Diffusion of innovation in higher education
E-learning as educational technology is one of the most rapidly growing areas in education. The diffusion of e-learning is quite similar to other areas of innovation, such as mobile phones or other areas of e-learning. The research process was divided into three phases: 1) initiation, consisting of identification of the need for innovation and planning for its implementation; 2) implementation, consisting of all activities related to the actual application of the innovation; 3) diffusion, consisting of all activities related to the spreading of the innovation.

Literature cited
Buć, S. and Štefanec, A. (2011) Managing technology in higher education: the case of e-learning. In: D. G. Johnson, L. M. Johnson, and C. M. Johnson (Eds.), *E-Learning: A Multidisciplinary Methodology*. Central European Journal of Business Research, Vol. 11, No. 4.

Divjak, B., & Buć, S. (2011). The diffusion of innovations in higher education. In: D. G. Johnson, L. M. Johnson, and C. M. Johnson (Eds.), *E-Learning: A Multidisciplinary Methodology*. Central European Journal of Business Research, Vol. 11, No. 4.

Divjak, B., & Buć, S. (2011). The diffusion of innovations in higher education. In: D. G. Johnson, L. M. Johnson, and C. M. Johnson (Eds.), *E-Learning: A Multidisciplinary Methodology*. Central European Journal of Business Research, Vol. 11, No. 4.

Conceptual model of DIFFUSION OF INNOVATION IN HIGHER EDUCATION

Conclusion and further work
Conclusions drawn from the research of DOI can be extended to HE institutions but general conclusions cannot be drawn. Specific characteristics of HE institutions and their specific needs and requirements should be considered. The research results can be applied in other fields of education, such as primary and secondary education.

Diffusion of innovation in higher education

Groups of critical factors of DOI

Acknowledgments
The work was supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Further information

A.1.1. Development of draft of the model of diffusion of innovations.

References

- HRZZ Research Projects (IP-09-2014) Work plan
- Rogers, E. (2003) *The Diffusion of Innovations*. 5th ed. ur. New York: The Free Press.



Ovaj je rad financirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.



Ovaj je rad finansirala Hrvatska zakađda za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.



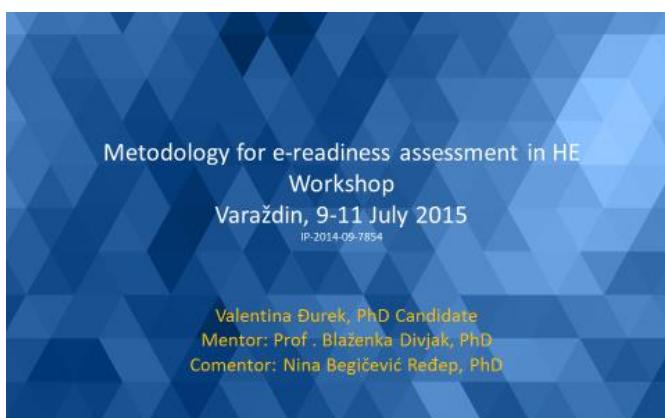
7

15.45-16.15

Doctoral student: Research case III

Valentina Đurek

En



Metodology for e-readiness assessment in HE

higher DECISION

Planned within the application

5. Specific goal:

To develop a methodology for e-readiness assessment of HE system for e-learning implementation

| Objectives | Activities | Outputs – Milestones (M) and/or Deliverables (D) |
|--|--|---|
| O5. To develop methodology for e-readiness assessment of HE system for e-learning implementation | A.5.1. Development of methodology for e-readiness assessment in HE (m8-10) A.5.2. Development of research instrument (m11-13) A.5.3. Preparation for the pilot study on e-readiness (m14-17) | D.5.1. Methodology for e-readiness assessment in HE D.5.2. Research instrument D.5.3. Plan for the pilot study on e-readiness |

higher DECISION

foi

Ovaj je rad financirala Hrvatska zadržava za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

2

Metodology for e-readiness assessment in HE

higher DECISION

higher DECISION

Planned within the application

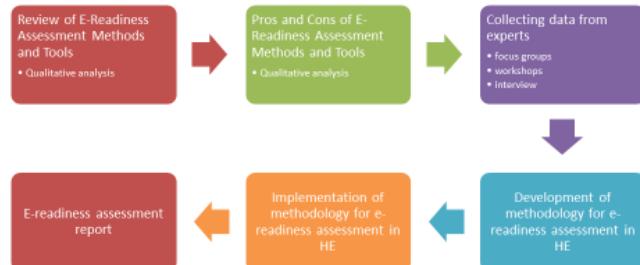
8. Specific goal:

To conduct research of e-readiness of HE

| Objectives | Activities | Outputs – Milestones (M) and/or Deliverables (D) |
|--|---|--|
| O8. To conduct research of e-readiness of HE | A.8.1. Adjustment of research instrument and conducting the pilot research on e-readiness in HE in Croatia (m18-22) A.8.2. Conducting the research on e-readiness in HE in Croatia, analysis of results (m23-30) | D.8.1. Results of the pilot research on e-readiness in HE in Croatia M8.1. E-readiness report for HE in Croatia |

Metodology for e-readiness assessment in HE

Research phases



Ovaj je rad financirala Hrvatska zadržava za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

4

foi

Metodology for e-readiness assessment in HE

higher DECISION

higher DECISION

Review of E-Readiness Assessment Methods and Tools (1)

| Method | Categories | Characteristics | Application | References |
|-----------------------------------|--|--|---|--|
| Readiness for the Networked World | 1. Networked access 2. Networked learning 3. Networked society 4. Networked economy 5. Networked policy | The tool analyzes each of the 19 indicators by classifying a country according to one of four categories or stages of development. | Centre for International Development (CID), Harvard University, since 2001. Conducts analyses leading to the evaluation of a mix of developed and developing countries. | Readiness for the Networked World, http://cyberlaw.harvard.edu/readinessguide/index.html |
| E-readiness Ranking tool | 1. Connectivity and technology infrastructure 2. Business environment 3. Social and cultural environment 4. Legal environment 5. Government policy and vision 6. Consumer and business adoption | Nearly 300 quantitative and qualitative criteria, organized into six distinct categories, feed into the e-readiness rankings. | Annual e-readiness rankings of the world's 70 largest economies. | Economist Intelligence Unit: Digital economy rankings 2010 Beyond e-readiness, http://graphics.eiu.com/upload/EIU_Digital_economy_rankings_2010_FINAL_WEB.pdf |

Metodology for e-readiness assessment in HE

Review of E-Readiness Assessment Methods and Tools (2)

| Method | Categories | Characteristics | Application | References |
|--|--|---|---|--|
| APEC e-Commerce Readiness Assessment Guide | 1. Basic Infrastructure and Technology 2. Access to Necessary Services 3. Current level and type of use of the Internet 4. Promotion and Facilitation Activities 5. Skills and Human Resources 6. Positioning for the Digital Economy | Six broad indicators of readiness for e-commerce are developed into a series of questions that provide direction as to desirable policies that will promote e-commerce and remove barriers to electronic trade. | It has been specifically developed to assist Asia-Pacific Electronic Cooperation (APEC) economies achieve this aim, to help governments develop their own focused policies, adapted to their specific environment, for the healthy development of e-commerce. | APEC e-Commerce Readiness Assessment Guide, http://www.internetsociety.org/policy/readiness_3.pdf |
| Ready?Net.Go | 1. Connectivity 2. E-leadership 3. Information security 4. Human capital 5. E-business climate | Measures the capacity of nations to participate in the digital economy. | Detailed national-level analysis creates an opening for business, government and private organizations to come together to improve a nation's overall ability to participate in the digital economy. | McConnell International, Net. Go! Partnerships Leading the Global Economy 2001, http://www.witsa.org/papers/e-readiness2.pdf |

Ovaj je rad financirala Hrvatska zadržava za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

5

foi

Ovaj je rad financirala Hrvatska zadržava za znanost projektom IP-2014-09-7854.

This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Metodology for e-readiness assessment in HE

DECISION

Review of E-Readiness Assessment Methods and Tools (3)

| Method | Categories | Characteristics | Application | References |
|--|--|---|--|--|
| Mosaic's Global Internet Diffusion Framework | 1. The Pervasiveness of the Internet 2. The Geographic Dispersion of the Internet 3. Sectoral Absorption 4. Connectivity Infrastructure 5. Organizational Infrastructure 6. Sophistication of Use | The framework analyses the diffusion of the Internet in a country along six main dimensions. | Designed to assess the state of Internet diffusion in a country using 25 countries in Asia, the Middle East, and Central Europe. | Framework for Assessing the Global Diffusion of the Internet. http://mosaic.unomaha.edu/2001_GDI_Framework.htm |
| International Survey of E-Commerce | 1. Trust 2. Technology 3. Workforce issues 4. Public policy 5. Taxation 6. Business processes 7. Costs 8. Consumer attitudes | Details the results of an international study of the views of information technology industry associations from around the world on the best way to encourage the growth of e-commerce. | Important for policy makers seeking to understand the primary concerns around the development of e-business. | WITS - International Survey of e-Commerce – 2000, http://www.witsa.org/papers/ECamSurv.pdf |



Ovaj je rad financirala hrvatska zaklada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

7

Metodology for e-readiness assessment in HE

DECISION

Review of E-Readiness Assessment Methods and Tools (4)

| Method | Categories | Characteristics | Application | References |
|--------------------------------------|--|---|---|--|
| Open Data Readiness Assessment Tool | 1. Leadership 2. Policy/legal frameworks 3. Institutional structures, responsibilities and skills within government 4. Data within government 5. Demand for open data / citizen engagement 6. Open data ecosystem 7. Financing 8. National technology and skills infrastructure | It may be advisable for a government to use this tool alongside other tools that focus more deeply on specific areas of interest. | The Readiness Assessment Framework has been designed to support an economical and action orientated assessment of the readiness of a national, regional or municipal government. | Open Data Readiness Assessment Tool, http://opendataidm.net/softbank.org/doc/pdf/Adria_v2-en.pdf |
| SADC e-Readiness Review and Strategy | 1. Fundamental level 2. Middle level 3. Advanced level | The framework was developed to conduct a study on 14 SADC member countries to establish their status of e-readiness. | The tool was developed to determine the level of e-readiness in SADC member countries according to competence in e-governance, e-services, e-business, ICT awareness, infrastructure, and policy and regulatory frameworks. | SADC - Readiness Review and Strategy, http://schoolnetafrica.org/fileadmin/resources/SADC_report.pdf |



Ovaj je rad financirala hrvatska zaklada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

8

Metodology for e-readiness assessment in HE

Review of E-Readiness Assessment Tools (5)

| Method | Categories | Characteristics | Application |
|---|---|---|--|
| Global Technology Index (GTI) | 1. Knowledge jobs 2. Globalization 3. Economic dynamism and competition 4. Transformation to a digital economy 5. Technological innovation capacity | Produces a set of indexes ranking the nations according to their competitiveness. | This report covers more than 50 countries spread over a number of economic zones of the world, even mix of developed and developing countries. |
| Readiness for Living in the Networked World | 1. The network (infrastructure) 2. Networked places (access) 3. Networked applications and services 4. Networked economy 5. Network world enablers | The report proposes analyzing each of the 23 indicators by classifying a country in one of four categories, or stages of development. | Computer Systems Policy Project self-assessment designed to help determine how prepared a local or country is to participate in networked world. |



Ovaj je rad financirala hrvatska zaklada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Metodology for e-readiness assessment in HE

Review of E-Readiness Assessment Tools (6)

| Method | Categories | Application |
|--|---|------------------------------------|
| Multicriteria decision models in the strategic planning of e-learning implementation | 1. Human resources 2. Specific infrastructure used in e-learning 3. Basic ICT infrastructure for e-learning 4. Organizational readiness and strategic assumptions for the introduction of e-learning 5. Formal legal readiness for the introduction of e-learning | In institution of Higher education |



Ovaj je rad financirala Hrvatska zaklada za znanost projektom IP-2014-09-7854.
 This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

Aims

- To develop methodology for e-readiness assessment of HE
- To implement methodology for e-readiness assessment in HE in Croatia

Focus group – Exploration Questions

• Question 1

- According to your opinion, what are the HEI key factors/areas that need to be measured within the categories of existing methodologies for e-readiness assessment?



Ovaj je rad financirala hrvatske zaklada za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

11



Ovaj je rad financirala hrvatske zaklada za znanost projektom IP-2014-09-7854.
This work has been fully supported by the Croatian Science Foundation under the project IP-2014-09-7854.

12

THANK YOU!
LET'S DISCUSS!



Metodology for e-readiness assessment in HE

Subota, 11. srpnja 2015.



Članovi projektnog tima radili su u grupama kako bi temeljem rada u protekla dva dana sumirali zaključke i izradili planove aktivnosti za prvu godinu projekta:

GRUPA I - Identification and research of the problem in HE

Postavljeno je pitanje anketa koje bi trebale biti razvijene u sljedećoj fazi no grupa više vjeruje u rezultate koje bi u ovom slučaju bile dobivene preko rada s fokus grupama. Zaključeno je da će se upitnik postaviti za ekspertnu grupu za visoko obrazovanje. Ipak pitanje je tko bi činio ekspertnu grupu, i treba li to biti ekspertna ili fokus grupa; U nastavku rasprave, voditelj 1. grupe, prof. Strahonja, smatra da bi za projekt bilo zanimljivo izraditi povjesni pregled difuzije inovacija, konkretno - kroz povjesni pregled odgovoriti na pitanje zašto je na FOI-u ovakva, a drugdje drugačija.



Istaknuta je činjenica da je na svjetskoj razini e-učenje u fazi zasićenja no to nije slučaj u RH.

Dodatno, smatra voditeljica projekta, za sada bilo bi važno identificirati ključne dionike (engl. keyplayers), a to nije fokus grupa, nisu nužno ni eksperti, nego oni koji su odigrali ključnu ulogu u e-učenju. Ti ljudi će zaista znati reći kako je išla difuzija, ali kako identificirati takve ljude u sustavu.

Analiza metodom *Social network analysis (SNA)* opisana je u projektu pa će ista biti korištena i za identifikaciju upravo ključnih dionika. Kada bi se u tu svrhu kontaktiralo pojedince postoji rizik da se neće sjećati dobro procesa koji je započeo u 2007. godini (tzv. recall risk) pa će biti korišteno istraživanje tragova po dokumentima uz precizan prethodni plan takve analize i tražene ishode. To bi zapravo bila dijagnostika na povijesnim podacima, što je objektivni pokazatelj.

Također, važno je opet spomenuti da postoji presjek između 1. i 4. grupe jer je projekt ciklusan, a ne linijski što je iznimno važno u odabiru instrumenata istraživanja u prvoj fazi treba dobro razmislići jesu li oni mogući i za 4. fazu projekta kako bi dobiveni podaci bili usporedivi.

Zaključak, umjesto ankete u prvoj fazi bi se provodio model DOI na temelju e-učenja, uz Sanju će na tome raditi i Sandra, Vjeran, Blaženka.

Valentina Đurek u okviru istraživanja za svoj doktorat ima zadatak razviti istraživačku metodologiju (koje kategorije, kako će biti mjereno, napraviti predložak za e-readiness). Da bi napravila e-readiness Valentina mora prvo izgraditi instrument što predstavlja pravi izazov, trebala bi proučiti različite e-readiness instrumente te doći do zaključka koji bi to bio instrument. Nakon toga, treba izraditi metodologiju – kvantitativnu ili kvalitativnu. Ova druga metoda bi bila bolja.

Nikola Kadić započet će istraživanje literature na temu modela odlučivanja u VO što će sumirati u preglednom radu.

U okviru ove grupe još dvije doktorandice uključene u projekt rade na temama e-kompetencija – Katarina Pažur Anićić te Ivanka Đeri. Njihove aktivnosti više će biti izražene početkom druge godine projekta.

GRUPA II - Development of decision making methodology and strategic decision making in HE

Naglašeno je da su za rad ove grupe iznimno važni i dokumenti na koje su upozorili međunarodni partneri.

Ponovljen je istaknuti neostatak u delphi tehnicu jer veliki broj ispitanika dolazi iz anglosaksonskog područja, 3 knjige koje su naručene u projektu treba također proučiti.

U prvoj fazi aktivnosti bi trebale završiti do studenoga, kao izlaz ističe se rad za konferenciju u Španjolskoj (srpanj), pregledni rad koji priprema kolega Kadoić te izlaganje u okviru doktorske radionice na CECIIS konferenciji.

Drugi dio aktivnosti odnosi se na definiranje što su to streteške odluke i što su taktičke odluke (tijekom listopada i studenog). Nadalje, analizu potreba ponovno je provesti kako bi se utvrdilo isto treba napraviti, koju potrebu imaju donositelji odluka u visokom obrazovanju i za koju vrstu odluka, kojom metodom bi se napravila analiza potreba.

Maja je istaknula da je u organizaciji radionica u Splitu koja bi bila o velike koristi za dio aktivnosti koje treba provesti Nikola.

Nakon toga u planu je izraditi mapiranje.

Sandra organizira krajem rujna 21-30. 9. 2015. Tjedan centra za e-učenje.



Dan e-učenja je jedan dan u prosincu za koji su članovi tima također zainteresirani.

GRUPA III - Implementation and strategic decision monitoring in HE

Vezano za temu ove grupe - metodologiju za nadgledanje implementacije u okviru koje je prva aktivnost definiranje kriterija za razinu organizacijske zrelosti za implementaciju i monitoring što bi se provelo u tri sljedeća koraka: 1. analiza procesa i aktivnosti implementacije i nadziranje, 2. analiza faktora koji utječu na proces implementacije strategije (Huberov model bi se mogao nadograditi; Huber: Effective Strategy Implementation), 3. definiranje kriterija procjene razine organizacijske sposobnosti (engl. capability).



Model zrelosti će raditi Katarina što je i tema njenog doktorata, Valentina K. bi radila s njom na teorijskoj fazi. Kad se dođe do primjene radila bi i Sandra.

U 18. mjesecu projekta aktivnost će rezultirati prvim radom.

GRUPA IV - Evaluation of the effects of strategic decision in HE

Dvije stvari se moraju napraviti u okviru ove grupe: karakteristike problema kad se govor o evaluaciji (u smislu efekata i procesa) te razvoj matematičkog modela.

U prijavi je bilo planirano govoriti o efektima, ne o procesima te se o toj mogućnosti treba posebno raspraviti u kasnijem fazama projekta, a prema preporuci Wima Van Petegema koji bi bio uključen u tu aktivnost.



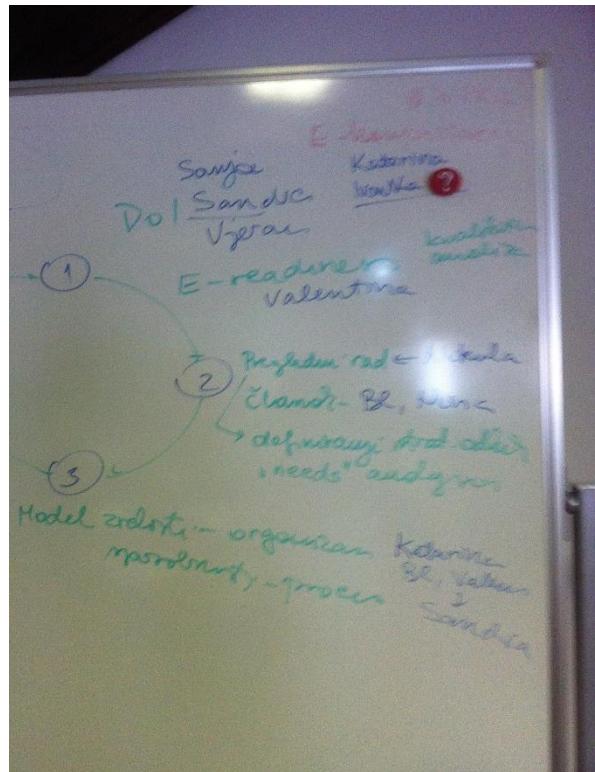
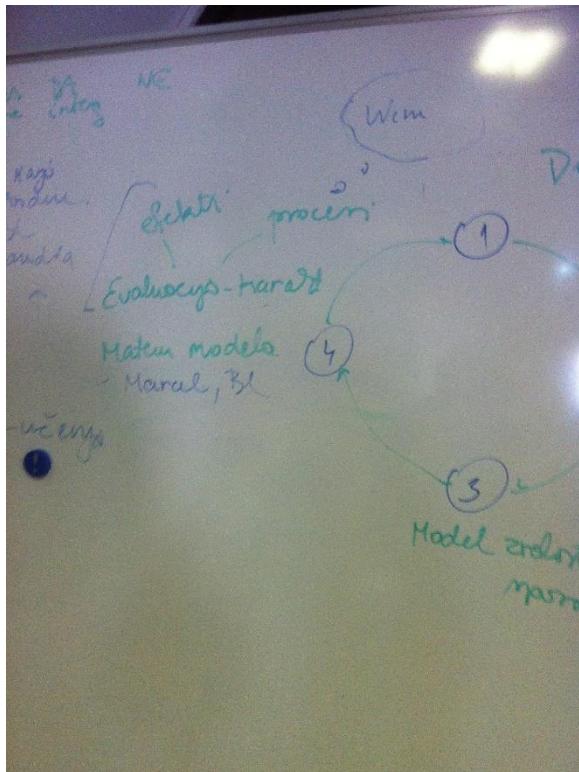
Za razvoj matematičkog modela zaduženi su Marcel i Blaženka, dok na karakteristikama rade Maja, Andrina, Blaženka, Sandra i Marcel.

U zaključku voditeljica projekta i ove radne grupe istaknula je:

Strategija može biti da ili ne. Može biti;da,zasebna; da ali integrirana u nešto; ili ne. Pa se mogu gledati i razine: sveučilišna, fakultetska, katedarska, predmetna. Dobro je što za Sveuč. u Zagrebu od 2007. god postoje evaluacije u obliku anketa preko kojih se mogu pratiti rezultati i kad se to usporedi sa Sveučilištem u Splitu koje nema startegiju, ali ima e-učenje, to je za komparaciju odlično. Dodatno, postoje i neanalizirani podatci Ministarstva koje je provelo anketu po sveučilištima koja nije dublje analizirana pa bi se s Ministarstvom pokušala dogovorila

ponovna analiza (Sandra). Prikupit će se i postojeći neobrađeni podatci koji su dostupni, ali i oni koje je prikupilo Ministarstvo. Pripremit će se dopis za Ministarstvo za odobrenje korištenja podataka. Posebno, projektni tim zanima aspekt veze donošenja strateških odluka i e-učenja.

Za početak će se proučavati podaci vezani za Sveučilište, a analize će se pripremit i za objavu.



Radionica je završila prema planiranom rasporedu.

Zapisnik sastavila:

Josipa Bađari

Zapisnik odobrila:

prof. dr. sc. Blaženka Divjak, voditeljica projekta