MODEL OF FULL COSTING METHOD AT HIGHER EDUCATION INSTITUTIONS BASED ON BUSINESS PROCESSES – CASE OF CROATIA

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Introduction

• The key objective of this paper is to present an implementation of full costing model based on a business processes at one higher education institution (hereinafter HEI’s), in Croatia.

• Authors have identified internal business processes and all associated costs that are attributable to provided services.

• The paper is presenting field research, snap shots of business processes and employee interviews and analysis of accounting data about the costs allocated to cost objects.

• HEI’s as an object of implementing the full costing method, have a more complex structure of output (services), users, activities
• Making appropriate cost structures, the structure of business processes and cost drivers requires detailed knowledge and study of the processes within the educational system for the application of full costing method.

• Detailed knowledge of the HEI’s system and their full costs will help the management in use of limited resources and in savings with the constant rising costs of educational services.

• It will also make causality relation between processes, costs and services, which will lead to improvement of transparency for HEI’s in financing, processes and management.
Reasons for ABC method in HEI’s

- This will lead to a number of positive trends in the business of high education institutions, which will primarily be reflected in the following:

  - making the right decisions based on real costs which will contribute to the achievement of economy, efficiency and effectiveness, as a measure of the achieved degree in cost control, but also as an expression of business success;

  - increase business efficiency, ie. the switch from losers to winners, minimizing and eliminating losses from business activities resulting inability to cover its operating costs with operating revenues, identification of the actual cost of provided services and the elimination of non-value added services and processes; and

  - increase business performance by developing a system for performance measurement expressed through cost reductions in development and implementation of cost management, reviewing costs, re-engineering business processes and increase the quality of service. All of that offers HEI’s at the same time the satisfaction of users with provided services.
Snapshoots of business processes – case study in HEI, Croatia

• This model was build based on interviews with employees and empirical research of internal documents at one HEI in Croatia.

• Through the interviews we build processes models also with working hours of administrative personnel and teaching personnel.

• Therefore, some assumptions regarding this model were set up by authors:
  
  - HEI is a place of costs with different programs or activities and management is responsible for efficiency and effectiveness, especially for occurred costs.
  
  - Full costing model is provided as a separate tool in accounting information system which will allow tracking and recording of all occurred costs (e.g. depreciation) which are important for internal usage and decision making process for management as well as for University because they must demonstrate that benefits from their programs and activities which they attempt are appropriate to the costs.
Figure 1. Activities at HEI

**Basic activities**
- Teaching activities;
- Scientific research and artistic activities;
- Development activities;
- Continues training of employees;
- Students interest organization and students programs.

**Additional activities**
- Additional teaching activities that are not founded from state budget in the whole amount (seminars, summer school, specialist postgraduate studies, etc.);
- Additional scientific and artistic activities (local and international programmes, Projects, etc.);
- Other additional activities such as publishing, sales product resulting from scientific, artistic and professional activities.

**Support activities**
- Activities related to student standard, sports, cultural and other activities and other activities that are not directly related to classes;
- Activities of general interest for croatia and other users (library, information, etc.).
There is a large number and importance of problems and questions which are unique for faculties and which are including significant amount of money and demanding individual solving approach.

Some of those problems which are specific for faculties are for example that faculty personnel (assistant and professors) could be employees and users of faculty services, question of scholarship treatment and support for research which are given by external subjects and etc.

Activities of educational staff are mutually related and couldn’t be separated.

Considering that educational staff doesn’t have classic working hour and classical description of working place, it is hard to determine during working hour how much hours did they spent working on lectures, research or providing professional services.
Often those activities are interweaving.

For example, to conduct research lecturer could guide and educate postgraduate and doctoral students.

During work on scientific papers for academic publications, lecturers are coming to cognition which will influence his lectures and further research.

At faculties quite often users of services aren't clearly defined and employees which are achieving those services.

For example, students of doctoral studies could work as assistant at faculty and in that case there are users of services but also faculty employees.
• we recognized cost objects or particular services of HEI.
• Main cost objects are:
  ➢ undergraduate,
  ➢ graduate, and
  ➢ postgraduate studies, science – research projects or
  ➢ commercial projects.
• Cost categories could be allocated with some cost drivers
  that are actually responsible for cost causality.
Table 1.: Possible activities at HEI and possible cost drivers

<table>
<thead>
<tr>
<th>Activities</th>
<th>Cost drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lectures</td>
<td>Hours</td>
</tr>
<tr>
<td>2. Advisory</td>
<td>Hours</td>
</tr>
<tr>
<td>3. Research</td>
<td>Number of research</td>
</tr>
<tr>
<td>4. Other services</td>
<td>Number</td>
</tr>
<tr>
<td>5. Lecture support</td>
<td>Hours</td>
</tr>
<tr>
<td>6. Research support</td>
<td>Number of research</td>
</tr>
<tr>
<td>7. Administration</td>
<td>Hours</td>
</tr>
</tbody>
</table>
### Table 2. Cost categories and cost drivers for HEI

<table>
<thead>
<tr>
<th>Cost categories</th>
<th>Cost drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gross wages and other expenses for employees (bonuses, awards, severance pay and fees) and payroll;</td>
<td>Hours or some other relevant coefficient for activity</td>
</tr>
<tr>
<td>2. Compensation of employees;</td>
<td>Hours or some other relevant coefficient for activity</td>
</tr>
<tr>
<td>3. Intellectual services;</td>
<td>Money per hour for activity</td>
</tr>
<tr>
<td>4. Material and energy costs (materials, energy, small inventory);</td>
<td>m² or m³ or lit. or spent resources for activity</td>
</tr>
<tr>
<td>5. Costs of services (telecommunications, transport services, rent);</td>
<td>m² or spent resources for activity</td>
</tr>
<tr>
<td>6. Current and investment maintenance;</td>
<td>Spent units or number of maintenance for activity</td>
</tr>
<tr>
<td>7. Financial costs (interest, insurance, etc.);</td>
<td>Depends for what they are: number of maintenance, new programs and lifelong learning depend on activity</td>
</tr>
<tr>
<td>8. And other expenses if they are specifically mentioned in the contract concluded between Universities and relevant ministries.</td>
<td>None</td>
</tr>
<tr>
<td>1. Depreciation</td>
<td>Usage proportion of each activity</td>
</tr>
</tbody>
</table>
Based on interviews with the personnel we were able to establish which personnel is involved in which activity with the consummation of time and with the consummation of resources.

That is needed for attribution of costs to the activities.

The mapping of processes was done and based on that we were able to make some suggestions in order to improve the value added to the students.
So, the suggestions were:
- Efficient management of space and human resources;
- Efficient management in time and engagement of personnel;
- Reducing the idle time;
- And improving the quality of services;
Conclusion

- Under full costing method the quality and reliability of financial statements will be improved and significant data from which the efficiency indicators are calculated and counted.

- It would be possible to maintain effective control of resources, but also monitoring the qualitative and quantitative information which would improve financial management and decision-making process by monitoring administration of HEI and the University through a reliable accounting information, both financial and non-financial nature under which it will be possible to attempt to apply the system of internal controls, and significant support for the introduction of external control and audit.