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HARMONISATION OF RUSSIAN AND INTERNATIONAL COST ACCOUNTING PROCEDURES AND SYSTEMS IN THE SPACE INDUSTRY®

(PILOT PROJECT)

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ABSTRACT

The current and foreseen level of business between the international space agencies/companies and Russian space companies has created a need for Russian companies to be able to enter into contractual relations with international organisations on similar terms as other suppliers. One extremely important aspect of these relationships is to have cost accounting systems capable of calculating the actual as well as projected cost of projects and/or services in accordance with International Accounting Standards (IAS). However, Russian space companies maintain their accounting records based on Russian Statutory Accounting (RSA) principles and statutory requirements. These records are not directly comparable to IAS and do not provide the required level of cost details. As a result, Russian space companies are not able to comply with requirements for presentation of cost information. Thus, financial and accounting systems currently in place at Russian space companies constrain the use of Russian resources and know-how in international space programs and slow down the integration of the Russian space industry into commercialisation of international space activities.

In addition, Russian space companies experience significant difficulties during the bidding process and in securing international sources of finance since many financial institutions require a high level of reporting for justifying, accounting for and controlling costs.

This paper will discuss the project that was aimed at providing a framework that will allow Russian space companies to increase significantly mutually beneficial participation in the international contractual relations and foster the integration of Russian space industry into global space activities.

INTRODUCTION

The paper presents the results of the pilot implementation project "Design of a management / cost accounting system according to International Accounting Standards for *TSNIIMASH-Export*". The project presents joint efforts of the *European Commission* under its TACIS/BISTRO scheme, the *European Space Agency (ESA)*, the *Russian Space Agency (RKA)*, *TSNIIMASH-Export* and *Deloitte & Touche*, and constitutes the result on activity aimed at harmonisation of Russian and international cost accounting practices in the space industry.

Project Background

The project started in 1994 following an agreement with *RKA* and *ESA*. The leading Russian aerospace companies were invited to participate in the project under *RKA* support: *NPO MOLNYA*, *NPP NAUKA*, *LII GROMOV* and *TSNIIMASH/TSNIIMASH-EXPORT*

The project included two pre-implementation phases:

Phase 1 - design of conceptual framework of an IAS-compliant cost accounting system. The Phase 1 results confirmed that the accounting systems used in the space companies were similar and proposed a number of potential system design options with varying degree of sophistication and cost.

Phase 2 -development of timely and cost effective approach for implementation of cost accounting procedures and systems in the Russian space companies. In particular, three different options to implementation were thoroughly studied and one of them, working from Sub-accounts in RSA format, was recommended for implementation.

Upon the completion of Phase 2, the company *TSNIIMASH-Export* was selected by the parties for pilot implementation of the new cost accounting system.

Pilot Implementation Project Objectives and Expected Results

The major objective of this pilot project was to install a computerised system which would be able to generate cost reports complying with International Accounting Standards in consistent and understandable manner. Each cost component should be logical and reasonably reflect the actual consumption of resources/benefits by projects/cost centers. The level of detail and format of these cost reports should allow *TSNIIMASH-Export* to fill out *ESA PSS series Cost Forms*. In addition, the departmental staff should be trained to operate the cost system independently and to interpret cost reports of the system.

It was also intended by the parties that the system should represent a solution which could be transferred to other enterprises in the industry without significant adjustment.

In using this cost accounting system companies should be able to:

- Comply with the tendering requirements of *ESA*, and other Western institutional customers
- Exercise more effective control of costs as a result of having systems in place to properly identify and allocate costs
- Enhance the manageability of a company by using cost and time management techniques
- Improve prospects of attracting financial investment from within and outside Russia and also give more confidence to potential western collaborators in joint ventures.

Brief Description of TSNIIMASH-Export

TSNIIMASH-Export was founded in 1991 by the scientific

research institute *TSNIIMASH*, the leading aerospace research institution in the Russian space industry. The company is the official representative of *TSNIIMASH* for managing international contracts. The company's mission is to provide, manage and promote international activity of *TSNIIMASH* and of other Russian space companies. *TSNIIMASH-Export's* major development goal is to become a leading provider of project management services for Russian space enterprises which operate in the international arena and to increase their involvement in international space programs. The main activities of *TSNIIMASH-Export* are.

- Organisation, execution and project management of contractual activities according to requirements of international customers
- Marketing and promotion of research assignments and technology
 - Technical feasibility analysis of projects
 - Project cost planning and analysis
 - Legal advice, including preparation of export licenses
- Information service regarding Russian space industry.

The Purpose of the Project Post Accounting Methodology

The purpose of the Methodology is to minimize five major types of considerable cost distortion as viewed from IAS perspective, which occur in the accounting systems in Russia.

- First, some costs are allocated to products that are unrelated to products being produced. Examples of such unrelated but allocated costs include excess capacity costs and general research costs.
- Second, distortion is introduced by omitting costs that are related to the products being produced or to customers serviced. Examples of such costs that are frequently omitted include regular employee benefits or expenses in excess of governmental standards. These costs are omitted for financial reporting purposes.
- Third, distortion can be introduced by costing only a subset of the outputs of the firm as products. This may often be the case with the space industry, when the outputs of the firm include both tangible and intangible assets.
- Fourth, distortion can be introduced by inaccurately assigning costs to products. Often the costs are assigned to products using basis that is not proportional to the actual consumption of resources by product. For example, labor-intensive products are often over costed when direct labor hours are used to assign all overhead costs to products.
- Finally, distortion is introduced by attempting to allocate joint or common costs to products. These costs occur when multiple products are produced using the same individual resource. For example, a unique machine is often set up to allow a batch of products to be produced.

Each of these distortions leads to inaccurate pricing and can result in incorrect management conclusions and wrong decisions.

Methodology Overview

Methodology Content

The developed Methodology consists of:

- Procedure for entering transactions and assigning entry status
- Expanded chart of cost accounts in Russian Statutory Format
- Data storage procedures
- IAS-type chart of accounts (internal system report)
- Reclassification procedure from RSA to IAS chart of accounts
- Fixed and intangible assets module according to IAS
- Procedures of cost allocation to projects/costcenters
- Defined allocation bases
- Project costing procedures for IAS purposes
- Time accounting and reporting procedures
- Labour rates computation model
- Management reports on costs:
 - total costs of the company for the period by category
 - project work-in-progress and related expenses
 - cost center expenses for the period
 - cost center allocated charge to the projects
 - non-allowable (periodical) project expenses
- Project cost cards
- ESA PSS series cost reports
- Russian statutory financial reporting

Project Cost Card The focal point of the costing Methodology is the project cost card. A separate card will be opened for each contract, on which direct project cost will be recorded.

Data Processing The two most important sets of transactions to be entered into the system are regular RSA entries and IAS adjustments. Each entry is characterised by a set of codes and by transaction status. All IAS adjustments are computed in strict accordance with IAS principles and have different status, and thus are 'invisible' for the Russian financial reporting system. Transaction code and status are two most important components which the system uses for constructing trial balances under RSA and IAS standards.

Reporting The system is able to produce virtually any type of report on costs through the advanced report generating function. The macro language allows users to construct a data-base request for the period which can be defined without any limitations within the current financial year¹. The system also produces three different sets of standard build-in reports.

The first set of reports is aimed at supplying management with actual company and project costing information prepared in accordance with IAS. The compatibility and high visibility of the reports is achieved by using the same cost categories in the different reports. These reports provide information on:

- Total expenses of the company by categories analogous to those used in IAS chart of cost accounts
- Project direct expenses by categories in three dimensions:
 - from the beginning of the project
 - from the beginning of the year

- for the pre-defined period within the current financial year²
- Project related expenses in the same three dimensions³
- Expenses incurred and/or initiated by cost centers in the performance of their job responsibilities from the beginning of the year and for the current period
- Cost centers charge allocated to the projects⁴ in proportion to service performed for the period within the current financial year⁵
- Overhead company expenses to be written-off in the current accounting period that are not directly related to the projects or cost centers⁶.

The second set of reports produced by the system consists of time accounting reports in various dimensions. Together with the first set of reports they constitute documents necessary for preparation of most often used *ESA PSS* series cost reports, including PSS-A1, PSS-A2 (together with Exhibit A), PSS-A8, PSS-A10 and PSS-A15. *ESA* requirements for filling out these forms are such that they allow a lot of flexibility which must, however, comply with IAS principles. The most important costing forms including PSS-A1, PSS-A2 and some others are coded in the system.

The third set of reports encompasses the documents necessary for financial reporting prepared in accordance with RSA (Balance Sheet, Statement of Profit and Losses and others as required).

Key Issues for Accounting in Accordance with IAS

The system is set up on four principal techniques to close the gap between Russian and international accounting standards:

- IAS adjustments
- Usage of sub-accounts
- Transaction coding
- Mapping of accounts.

The accountants should use their professional judgement in identifying which techniques are to be used for each account for each particular business case.

1. Financial year in Russia matches the calendar yearly period from January to December.
2. Defined period is pre-set as a current month, and can be adjusted if required.
3. Categories depend on the nature of expenses incurred for the project.
4. The costs are presented in the matrix 'cost centers - projects' as well as on the project cost cards.
5. Cost centers charges to projects from previous periods are also recorded on the project cost cards
6. These expenses also include non-allowable costs for *ESA* purposes (see Clause 6 from General Clauses and Conditions for *ESA* Contracts for the definition of allowable, partly allowable and non-allowable costs).

Summary

The developed computerized cost accounting solution for the Russian space industry:

- Is thoroughly designed to reconcile industry specifics, current state of accounting practices and requirements of International Accounting Standards
- Allows minimisation of five major types of cost distortion

- Includes and effectively uses the concept of cost centers
- Consists of cost accounting and time accounting components with multi-level data entry, reclassification and allocation procedures to ensure accurate reflection of actually consumed resources by projects/cost centers
- Contains a powerful cost/time reporting function
- Is built around four principal techniques to close the gap between RSA and IAS
- Demonstrates that an inexpensive local cost accounting solution suitable for dissemination exists
- Provides a sound basis for building a comprehensive industry cost accounting standard at the subsequent stage.

IMPLEMENTATION FINDINGS AND CONCLUSIONS

Key Benefits from the Installed System

At *TSNIIMASH-Export* the system contributes to the business in the following ways:

- The system allows production upon request without time delay project/cost center cost reports in a format easily understandable both to potential clients and management, and which can be used without additional processing for decision-making purposes. These cost reports define a sound approach to justification of costs when contracting with clients and, as planned, substantially reduces the time required for preparation of tender documentation. Most important, the cost reports will allow to price the jobs accurately.
- Most of the company activities, including the financial reporting and contract development, are now integrated and built around the system. Selected software allowed automation of the activities and information exchange of many departments. Especially important, a link was created between accounting and planning departments, which will result in a substantial
- reduction in the amount of paperwork and document flow.
- Time 'accounting sub-system has numerous benefits itself; project management capabilities are the most important.
- Cost reports can and should be used for control purposes and for measuring cost centers performance, while they also facilitate sound budgeting in the space company.
- The system presents a clear non-distorted picture of resource consumption patterns across the company.
- The most valuable intangible benefit is that *TSNIIMASH-Export* and their potential western clients will feel much more comfortable when dealing with each other.
- As the system matures and accumulates historical data across the financial year and about the contracts managed with the help of the system, the capabilities and delivered benefits will greatly increase.

Lessons Learned

It was intended that the results of this project would be transferred to other enterprises in the space industry. Several observations are important in designing and managing the subsequent dissemination.

- **The system can be installed without damaging the confidentiality.** In order to design a system that is tailored to a specific company, it is necessary and sufficient to understand the business and to know the expenditure process but not the actual amounts of costs recorded in the RSA accounts.
- **Loading historical data is the major bottleneck.** The day-to-day operation of the system starts once all historical data is loaded, and the primary responsibility to do so rests with the space company. Thus, at every subsequent implementation, a schedule for preparing data, converting and loading it should be agreed beforehand and closely monitored by space company management.
- **Participation of TSNIIMASH-Export at subsequent stages will be a critical success factor.** The experience already accumulated by TSNIIMASH-Export and the unique positioning of the company in the space industry will allow it not only to transfer skills smoothly but also to rationalize implementation and operational costs. The best approach would be to create a Learning Center under the direction of TSNIIMASH-Export, which will allow for self-sustainability of the Methodology.
- **The successful cost system solution embraces many departments, not just accounting department.** The quality of cost accounting is highly dependent on the measurement of resources consumed in various departments and the early attribution of costs to projects/cost centers. Without integration of other departments the cost system will be build on too many assumptions about the cost driver and allocation basis. Thus, in order to satisfy the specifics of each company cost system design should be built around this fundamental factor.
- **Time accounting procedures and 100% time sheet discipline are critical.** Without the time procedures proper calculation of hourly rates is impossible. In order to comply with requirements, 100% of the company employees and subcontractors (with very few exceptions) should be preparing timesheets.

company. The functional, technical and industry expertise required mandates business, financial and technical consultant resources committed to the project but, more important, committed to the success of the Methodology in the long run.

PROPOSED DISSEMINATION MECHANISM

The developed IAS-compliant cost accounting solution ' for *TSNIIMASH-Export* on the basis of an software package Etalon (developer - Russian company Tsefei) clearly demonstrates that it can be used for the development of a standard solution on costs for the Russian space industry. Therefore, the major objective of the parties at the next stage is to enhance the system into a comprehensive solution. An initial site-by-site approach will ensure that the system is thoroughly tested and embraces most of the key similarities and specifics of the space industry. At the subsequent stages further dissemination on a mass scale in the industry and the approach to it can be considered. The next project will form the base for the subsequent implementation of the developed cost management system for the whole industry. It is a complex project that demands close coordination of many separate tasks and resources from both the consultants and the 'selected target