

MANAGEMENT DEVELOPMENT PROGRAM

(LEADING TO THE AWARD OF MBA)

In association with the

CZECH TECHNICAL UNIVERSITY IN PRAHA

ASSIGNMENT

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Course: Diploma in Management Studies

Subject: Operations management

Lecturer: Peter Long

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You are required to write a report regarding the operations of workplace situations with which you are familiar, which involves issues related to one or two of the following areas. You may consider situations where attention to the issues is either currently required or has recently been paid.

Issue areas:

1. Service delivery
2. Quality management
3. Facilities management
4. Materials management
5. Planning and scheduling
6. Project management

Your report should include:

- a description of the workplace situations,
- an analysis of operations using appropriate frameworks,
- a description of actual or proposed changes that have or could be made to the operations,
- a justification of these changes, identifying actual or potential benefits accruing from them.

Your report should not exceed 1500 words.

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1. Introduction

It was quite difficult to pick a suitable topic for this assignment, which would allow me to fulfill all the requirements given above. Since I'm involved in power business, namely in transmission, I can hardly describe the manufacturing plant operations or material management. In fact, there were some very interesting projects I have managed, like interconnection of CENTREL to the UCPTE or emission monitoring in ÈEZ power stations, but in order to keep confidentiality I will not use them for the purpose of this assignment. After all, I have decided to describe the process of changes going on in Central and Eastern Europe among partners in interconnected grid.

Since 1962 the countries of Soviet bloc have operated their power systems in parallel. Special organisation was established for this purpose - **ÖÄÓ ÎÃÑ** - **Öäíòðëäüíäý äëñíäò÷äðñêèàý ïðãäíèçàòèèý Íáúääèíáííúð ýíáðãäòè÷ãñêèð ñèñòäì** (CDO IPS - Central dispatching organisation of Interconnected Power Systems). This organisation supervised an operation of the whole interconnected system - from DDR in the West to Pacific ocean in the East, from North polar sea in the North to Bulgaria in the South. All Soviet-bloc countries used to be members in it.

After 1989 the wind of change blew into the power industry in this part of the world. Beginning from the change in political orientation and ending with October 18, 1995, when 4 countries (CZ, SK, PL, HU) connected their systems to the West-European grid UCPTE and left the eastern interconnection.

All this seems like an inevitable end of CDO IPS. But there are many (including myself), who think that dissolving CDO without any substitute would mean losing a lot of advantages gained in the past. This idea launched a new project, known as

INTERNAL REFORM OF CDO - IPS.

Compared to the construction of a new nuclear power station this project is negligible, but since there is nothing better on my mind and since I'm responsible for managing this project, I will devote this assignment to it.

2. A little bit of theory: What is operations management ?

Some time ago, operations management used to refer primarily to manufacturing production. The emergence of a wide range of non-manufacturing business activities, however, broadened the scope of the operations management functions. Today, the term operations management refers to the systematic direction and control of the processes that transform inputs into finished goods and services. This function is essential to systems producing goods and services in both profit and nonprofit organisations.

3. Trends in operations management

Several trends - a growing service sector, productivity changes, global competitiveness, quality, time, technological change and others are attracting attention to operations management.

3.1 A growing service sector

There is a significant service sector of the economy which breaks down into roughly three components:

- government and authorities on all levels;
- wholesale and retail companies;
- transportation, public utilities, communication, health, financial service, real estate, insurance repair service, business service, personal service

The growing service sector does not mean that the manufacturing sector is becoming insignificant part of the economy. This decline of manufacturing may be true now in economies in transition, like the Czech republic, where it was over-volumed, namely the heavy industry, but it will not take place in a long-term outlook. But now, Czech economy must catch up with the trends in developed countries and therefore the service sector is rapidly growing.

3.2 Productivity changes

Productivity is the value of outputs (goods and services) produced divided by the values of input resources (wages, cost of equipment, etc.).

$$\text{Pr oductivity} = \frac{\text{Output}}{\text{Input}}$$

Many measures of productivity are possible. For example, in an computer selling company a manager can measure productivity by sales per person per month. One of my colleagues in this MBA course is a managing director of DELL Czech republic and he uses this measuring method in his company. According to him, DELL CZ is the most productive branch of DELL Computers in the world.

How to measure productivity in power business ?

Many approaches are being used, beginning from number of persons per installed Megawatt up to earnings per person. The latter is of no use in the CZ, since the electricity price is strictly regulated. When using the former, one must bear on mind the differences between companies. Some have only generation, some have generation + transmission and some are also involved in distribution.

The simple comparison between ÈEZ and Electricité de France says, that ÈEZ is overstaffed - three times compared to EdF. And moreover - unlike EdF, ÈEZ does not operate distribution grid ! The impact on productivity is obvious. But on the other side, we do not have an incentive to reduce our staff, since the wages are kept artificially low by the government to maintain employment and promote the economical reforms. All this requires normal business environment to be settled. We expect this in about two to three years.

Productivity is the prime determinant of a nation's standard of living. If the value of output per work hour goes up, the nation benefits from higher overall income levels (according to Porter, 1990).

3.3 Global competitiveness

To prosper, the company must more and more treat the world as its stage. It must view its customers, suppliers, facility locations and competitors in global terms. This applies even to power sector, where a competition was something incredible some years ago. Now even in the Czech republic we were "thrown" in the middle of competition coming from abroad. Our government adopted a policy of "open market" with electricity and now ÈEZ is no more a single supplier for the regional distributing companies. The competition comes both from East and West. But, on the other side, we are able to compete in other territories, outside the ÈR.

3.4 Quality, time and technological change

Productivity measures more than only efficiency and cost. The numerator in the ratio is the value of output, which therefore introduces quality as a key variable. Without quality, a company loses its ability to compete in the marketplace and its cost structure can also become incompetent.

Another important trend is that more firms are competing on the

basis of time. Filling orders earlier than the competition does, is but one dimension. Equally important is the ability to introduce new products or services quickly and reach the market first.

Another increasingly important factor in operations management is accelerating technological change. It affects the design of new products and services and also the production processes themselves. Many new opportunities are coming from advances in computer technology. Robots and various forms of information technology are just two examples.

4. Managing projects

Project may be defined as an interrelated set of activities that has a definite starting and ending point and that results in a unique product - both tangible or intangible. An activity is the smallest unit of work consuming both time and resources that the project manager can control and schedule. It is very common, that with exception of the simplest projects, each activity is carried out by a different person. The project manager must first describe the project in terms that everyone involved will understand. This description should include a clear statement of the project's end point. In addition, the project manager must define all project activities and precedence relationships. A precedence relationship is a sequencing constraint between related activities; that means it determines that one activity cannot start before the preceding one not been completed. If this precedence relationships are determined, the project diagramming can start. For complex projects this diagramming may be rather complicated but its omitting can end in costly delays. (This is not the case of my project.) After time requirements for each activity have been determined, the Critical path may be found (in CPM method).

5. General implications for the power industry

Power industry operates in quite specific conditions. The innovation cycle is very long and the industry itself is very capital - intensive. Therefore some of operations management formulas are not entirely applicable in it. But this does not mean that power industry can afford to ignore operations management at all.

One very good reason to care for its operations is the growing competition. As shown in 3.3, even here, in the formerly typical monopolistic business, competition is growing. To be able to compete, each company must care for its operations and make them transparent, efficient and cheap.

6. CDO reform as a project

If I should try to apply the general project description to the CDO reform, it could look like the following:

6.1 Precedence relationship

There is nothing like financial implications in case of delaying this project. The end-point of the project is the existing new organisation. The only problem with defining this end-point is, that in case of too long duration some members of CDO (namely those from CENTREL) may loose their interest and leave the organisation at all. From my viewpoint it would't be very wise, but *errare humanum est*. The Central-European people (at least some) are so „proud“ not to be members of East-Bloc any more, that they are able to cancel all cooperation with their former partners in the East. This is only a good support for their wiser western competitors who fill the gap immediately. All this means, that the project should not take a very long time.

But still, some precedence applies. Since the present organisation has been established by a multilateral governmental agreement, its reform is not so easy. Before any reform is launched, it has to be approved by all governments involved.

6.2 Present status

Today, after CENTREL (CZ, PL, HU, SK) reconnection to the UCPTE, CDO does not operate in the old way any more, but still has not adopted new ways of operations.

In the old days CDO used to be really what its name says - a Central dispatching office. It gave orders to all national dispatching centers in Central and Eastern Europe and supervised their implementation. There was an operations planning department in CDO,

responsible for a long- and short-term planning.

Today, CDO does not fulfill these duties any more, since there is not any „customer“ for this service. The operating rules in UCPTE, already adopted or planned to do so by CDO members, are different, putting emphasis on individual responsibility of each partner and no central dispatch of this form is needed.

It could be very simple to cancel CDO totally. But seen more broadly, it would mean losing almost 35 years of experience with multilateral cooperation and, as some western partners fear, it could bring chaos to the power industry in Eastern Europe. Therefore it was decided to start an internal reform of CDO.

Since I was one of the first member representatives who came up with this idea, by an unanimous vote I was elected as a chairman of the group which prepares this reform.

6.3 Proposed way of operation

As was said above, today there is no more need for a real-time control of interconnected systems. First - there are no more interconnected systems in the form as they used to be in 1962, when CDO was founded. Second - all members already have or plan to re-connect with West-European UCPTE and therefore have implemented new philosophy of operating the system. In it, every company is solely responsible for its own operation and no international dispatch is needed. This way CDO lost its „customers“. Its only chance for survival is to find another activities useful for its members. For example it could change into a mediator between its eastern members and UCPTE, provide a place for discussions and sharing ideas. It could represent its members in other international organisations, like UNIPEDE, Euroelectric or Phare.

Unfortunately this means that the staffing of CDO has to be almost completely redesigned. Its present employees usually don't speak any other foreign language than Russian, what is not satisfactory. Moreover, usage of personal computers is very limited in CDO. People working there are usually in higher age and don't want to learn new things. Solving this problem will be very sensitive, but is inevitable. People will have to travel and command of English will be essential the same way as Russian. Moreover, number of people will be reduced by about

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6.4 Project activities

From the beginning to the end, following activities already have or will have to be carried out:

- recognizing the problem - see 6.2;
- proposing the goal and obtaining support for it - see 6.3;
- starting to solve, which means defining and solving
 - legal implications
 - organisational implications
 - human resources
 - financial implications
- presenting the solution to all members
- final implementation.

All items generally mentioned here are discussed hereinafter.

6.5 Project evolution

The description and history of the Project is given in Flowchart 1.

The reform of CDO started to be considered in 1990. It took next 3 years before some activities started. First the CDO headquarters tried to make some proposals. But these proposals were only like prolonging a present situation without any substantial change and therefore they were finally rejected in 1995 and a special group was established instead, in which the employees of headquarters are not present. This means that the group is not biased in its decisions.

In 1995 - 1996 the group held 3 meetings - in Prague, Moscow and Berlin. Part of the results of the last meeting is enclosed.

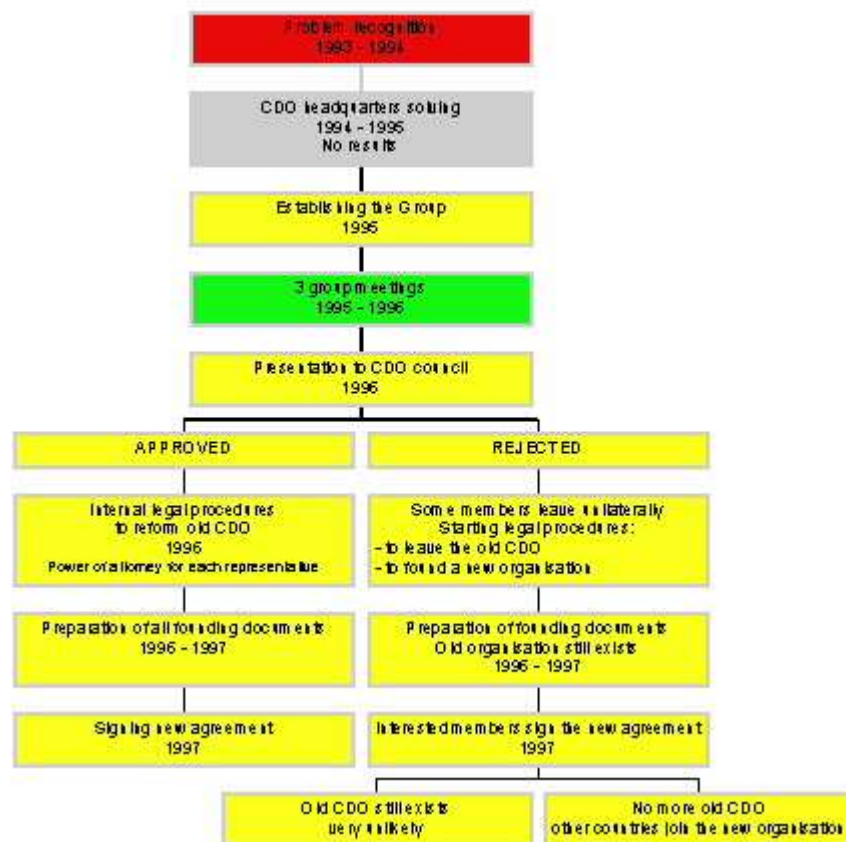
The group proposal is like following:

1. Present organisation is worn out and its existence must be ended.
2. Since the cooperation must be maintained, a new organisation must be established at the same moment.
3. The new organisation will not be a governmental one, but rather a commercial one, founded by the companies

commercial one, founded by the companies.

4. Two forms of existence are possible: with or without a permanent body (The Headquarters) with permanent staff.
5. In the second possible form - without a permanent staff, the organisational duties will be fulfilled by each member in alphabetical order for two years.

Flowchart 1 - Internal reform of CDO



This proposal will be presented to the CDO Council in May in Moscow. If the council approves, the legal procedures will start. Each country representative will have to obtain his government's approval for signing end of the old organisation. This end could be signed in fall 1996. The situation will be a little more complicated for me as a Czech representative, since the Czech republic is a host country of CDO. But with a kind help of our lawyers and Ministry of Foreign affairs we'll make it. At the same time these representatives (at least those interested) will sign a founding document of a new organisation.

A little more complicated situation will occur if the Council rejects our proposal. In that case it is very likely that some members (CZ, SK, DE, IT, RO) will unilaterally cancel their membership in the old CDO.

PL, HU, RO) will unilaterally cancel their membership in the old CDO. Those interested may establish a new organisation with a new name and without any relation to the old one. I personally expect this be a most likely outcome and the members of the new organisation will be in the first step Russia, Germany, Ukraine and maybe Bulgaria. In the second round, maybe a year after, CZ and others will join.

The main goal of the new organisation is to act as a counterpart to UCPTE in all issues associated with power systems operation and international cooperation. Namely in these days, when the extension of synchronous operation is considered, such a partner is very important.

6.6 Legal implications

As was said hereinabove, the legal status of CDO will change dramatically. Now its employees - foreigners are treated as a diplomatic staff with all advantages. After the change is made, if there is any permanent staff, they will be regular employees of a regular international business organisation, the same as thousands others in Prague. From their viewpoint the most important is losing the diplomatic advantages.

From our viewpoint it seems important, that the organisation will change its nature from a governmental one into commercial. In practice it means that it will be much easier to control. Even though there are good people in governmental authorities, it takes too much time to discuss every detail with them. Moreover, by changing the legal status, Czech republic will get rid of some obligations associated with its host status. These obligations have got rather costly recently and the bills should be spread among all members. And finally - Czech state is not interested in this kind of organisations at all.

6.7 Human resources

The staffing will have to change substantially. Now there are 9 foreigners and 14 supportive staff in the headquarters. The official language is Russian, what means hardly anybody speaks any other language (with about 3 exceptions). These people have one choice: either to learn English as quickly as possible or leave. The same situation is with personal computers utilisation. But regardless to their learning, the staffing will be reduced substantially.

New Headquarters (if any) will have 0 foreigners and about 5

NEW HEADQUARTERS (if any) will have 7 FOREIGNERS and about 5 persons supportive staff, the former being preferred new young and skilled people, the latter could be some of present staff.

6.8 Financial implications

Because of the staff reduction and responsibilities change, the budget of CDO will decrease as well. Our group estimates 50% savings after the new organisation is implemented. The annual budget today makes approximately CZK 20M, after 1997 it could be CZK10M.

7. Reference

[1] Krajewski, Ritzman: Operations management, Addison-Wesley 1993

[2] CDO Internal reform - proposal for CDO Council, 1996

8. Appendix

First part of the proposal for CDO Council - in Russian.