

according to the elements of Porter's Diamond on national competitive advantage can be carried out. It would give a broader perspective to the Europe as a whole.

*Alhanagiah O., BSU (Minsk)*

## **SOME FEATURES OF USING PERT-MODEL IN PROJECT MANAGEMENT**

The Project management (PM) discipline is acknowledged worldwide as one of the most dynamically developing science. PM is considered to be the main method of corporate management in constantly changing business environment. Complex projects require a series of activities, some of which must be performed sequentially and others that can be performed in parallel with other activities. This collection of series and parallel tasks can be modeled as a network.

The Program Evaluation and Review Technique (PERT) is a network model that allows for randomness in activity completion times. PERT model for project management was invented by United States Department of Defense's US Navy Special Projects Office in 1958 as part of the Polaris mobile submarine launch project. PERT is basically a method for analyzing the tasks involved in completing a given project, especially the time needed to complete each task, and identifying the minimum time needed to complete the total project. This method has the potential to reduce both the time and cost required to complete a project.

In a project, an activity is a task that must be performed and an event is a milestone marking the completion of one or more activities. Before an activity can begin, all of its predecessor activities must be completed. Project network models represent activities and milestones by arcs and nodes. PERT originally was an activity on arc network, in which the activities are represented on the lines and milestones on the nodes. Over time, some people began to use PERT as an activity on node network. The PERT chart may have multiple pages with many sub-tasks.

The milestones generally are numbered so that the ending node of an activity has a higher number than the beginning node. Incrementing the numbers by 10 allows for new ones to be inserted without modifying the numbering of the entire diagram. The activities in the above diagram are labeled with letters along with the expected time required to complete the activity.

### **Steps in the PERT Planning Process**

1. Identify Activities and Milestones. The activities are the tasks required to complete the project. The milestones are the events marking the beginning and end of one or more activities. It is helpful to list the tasks in a table that in later steps can be expanded to include information on sequence and duration.

2. Determine Activity Sequence. This step may be combined with the activity identification step since the activity sequence is evident for some tasks. Other tasks may require more analysis to determine the exact order in which they must be performed.

3. Construct the Network Diagram. Using the activity sequence information, a network diagram can be drawn showing the sequence of the serial and parallel activities. For the original activity-on-arc model, the activities are depicted by arrowed lines and milestones are depicted by circles or «bubbles». If done manually, several drafts may be required to correctly portray the relationships among activities. Software packages simplify this step by automatically converting tabular activity information into a network diagram.

4. Estimate Activity Times. Weeks are a commonly used unit of time for activity

completion, but any consistent unit of time can be used. A distinguishing feature of PERT is its ability to deal with uncertainty in activity completion times. For each activity, the model usually includes three time estimates: optimistic time (generally the shortest time in which the activity can be completed), most likely time (the completion time having the highest probability), pessimistic time (the longest time that an activity might require).

5. Determine the Critical Path. The critical path is determined by adding the times for the activities in each sequence and determining the longest path in the project. The critical path determines the total calendar time required for the project. If activities outside the critical path speed up or slow down (within limits), the total project time does not change. The amount of time that a non-critical path activity can be delayed without delaying the project is referred to as slack time. If the critical path is not immediately obvious, it may be helpful to determine the following four quantities for each activity: ES – Earliest Start time, EF – Earliest Finish time, LS – Latest Start time, LF – Latest Finish time. These times are calculated using the expected time for the relevant activities. The earliest start and finish times of each activity are determined by working forward through the network and determining the earliest time at which an activity can start and finish considering its predecessor activities. The latest start and finish times are the latest times that an activity can start and finish without delaying the project. LS and LF are found by working backward through the network. The difference in the latest and earliest finish of each activity is that activity's slack. The critical path then is the path through the network in which none of the activities have slack.

6. Update as Project Progresses. Make adjustments in the PERT chart as the project progresses. As the project unfolds, the estimated times can be replaced with actual times. In cases where there are delays, additional resources may be needed to stay on schedule and the PERT chart may be modified to reflect the new situation.

*I. Plotka, M. Vidnere, Higher School of Psychology, Riga*  
**ETHNOCOMMUNICATIVE COMPETENCE (ECC) AND ITS  
ROLE IN CREATION AND DEVELOPMENT OF  
INTERNATIONAL RELATIONSHIP IN LATVIA**

Latvia is a multinational state, where due to economical situation, geographical and historical causes representatives of different nationalities have lived together for many centuries. This is the reason why the problem of regulation of intergenerational relationship is given so much attention in this state.

Throughout the world nowadays certain processes are noticeably developing, which can be characterized not only by a degree of ethnocultural awareness inherent to them, but also by the development of interethnic tolerance. A national personal consciousness is characteristic not only of a certain ethnic group, but also of thoughts, perception, feelings and orientations which form the system of values and attitudes to their own and to other nationalities. The following factors influence interethnic tolerance:

- specific elements of ethnocultural tradition;
- the level of internal referential awareness; the significance of one's own ethnic group in the individual life and activity.

ECC can serve as a qualitative indicator of one's personality development and characteristic international attitude in communication as well as development of the system of ethnic values and attitude to other ethnic groups.

In this research work the following objectives have been set forth and realized: