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## **Ethics of Systems Thinking**

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## **Systems Thinking**

Represented by the pioneering works  
of **West E. Churchman, Russel Ackoff,**  
**Ian Mitroff** and others.

Hungarian contributions by **Ludwig von**  
**Bertalanfy** and **Jozsef Kindler**.

## **Multi-criteria evaluation of complex systems**

- (i) the completeness of evaluation criteria,**
- (ii) the measurement of evaluation criteria,**
- (iii) the problem of disqualification.**

# **The King's City Project**

**Lake Velence, Hungary**

In 2008-2010 a group of American and Israeli investors wanted to develop a huge **gambling** and **holiday complex** called the **King's City** consisted of 5000 apartments in a nearly natural environment, at the the **Lake Velence**. The project was about **USD 2000 000 000** and expected to generate a good return on investment in some years. However, it would **destroy** the nearly natural **ecosystem** and **transform** the **life of local people** with increasing traffic of gamblers and the corresponding criminal activities including drugs and prostitution. The area represents one of the **most vulnerable parts** of Hungary. It is populated by **low income people** and **poor holiday-makers**. The territory is important because of the **historical** and **cultural sites**. Some considered the King's City project as "**raping the soul of Hungary**".

### **Lake Velence, the place of the King's City project**



**The Casino looks like this**



**The lake is used by local people**



## Modest living in the area



### (i) The completeness of evaluation criteria

In the case of a complex system we should consider **all** the important **aspects** of the **system** and create **appropriate evaluation criteria** for them.

If project transforms the local ecosystem and the culture of the local community, it is **not enough** to study the **direct capital investment, job creation and the expected tourists flow** but one should also consider the ecological, social and cultural impacts of the project.

**(ii) The measurement of evaluation criteria**

**Every evaluation criterion should be measured on its own scale.** It can be an absolute scale, an interval scale or an ordinal scale.

Influenced by the **economic cost-benefit analysis** today's evaluation practice tends to measure everything in money terms. This is rather **problematic** because it transforms **lower scale** measurements to the **absolute scale** measurement of money.

**Higher level** (absolute or interval scale) measures can be **transformed** into ordinal scale and can be compared with **lower level** measures. In this way we make justice to the **qualitative aspects** of the decision situation. This is consistent with the philosophy of **social choice** advocated by **Amartya Sen** in his latest book "**The Idea of Justice**" (2009).

### **(iii) The problem of disqualification**

There is **no super system**, that is a system which would be superior to any other system considering all the relevant value dimensions. Every complex system has some **disadvantages** in comparison to other systems. We can calculate the so-called **disqualification coefficient**, which shows in % term that a given system is worse than the other systems in comparison.

We should define a **maximum level for disadvantages**. In the multi-dimensional decision making framework a **system** is **acceptable** only if its **disadvantages** do not **exceed** a certain level.

This logic is very different from the philosophy of **cost-benefit analysis** which says that a system is acceptable if its **advantages** are **greater** than its **disadvantages**.



## **Whole Systems and the Quality of Life**

Systems theory suggests that the **quality of life** can be served by taking the **view of whole systems**. This requires considering all the relevant value dimensions, evaluating the performance of systems on adequate scales of measurement and using disqualification criteria for blocking trade offs among **non-substitutable values**.

## **Shingkar village, Bhutan**



**The Richness of Being can be preserved if we take the whole system view and use multidimensional decision making methodologies to evaluate the ecological, social and cultural aspects adequately.**