THE DEVELOPMENT METHODOLOGIES OF THE INFORMATION SYSTEMS

METODIKY VÝVOJE INFORMAČNÍCH SYSTÉMŮ

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Abstact
The development of the information systems on the base of user‘s requirements is very difficult process. In the world there are a lot of methodologies that facilitate the information technology development. But their use is rather limited. They are either too specialised or too general. The author is interested in the process of creation the methodologies as an engineering science and tries to find the basic rules for their creation. As a result of the research will be the method for general purpose in the creation and development of the specific methodologies according to the concrete information system requirements.

Abstrakt:
Vývoj informačních systémů dle uživatelských požadavků je velmi složitý proces. Na celém světě proto vzniká množství metodik, které se více či méně úspěšně snaží optimalizovat vývojový proces IS. Jejich využití je ale značně limitované. Buď jsou velmi specializované na úzkou problematiku, nebo velmi obecné. Autor se zabývá procesem tvorby metodologií vývoje IS jako inženýrskou disciplínou. Hledá základní pravidla, podle kterých je možné metodiky konstruovat. Účelem práce je nalézt obecný postup tvorby metodik při řízení vývoje specifických informačních systémů.

Key words
Information system, development, engineering science, methodology, process, user,

Klíčová slova:
Informační systém, vývoj software, motodologie, proces, uživatel

Methodology algorithm

Finding the correct algorithm, how to develop the information system successful requires a lot of experience. The borders of approach are “at first do programs, then write the documentation” and “ at first do analysis and describe problems and then do programs”. It is not possible denounce these extremes. Certainly it is possible to find the situation, when the first example matches better as second and to the contrary. Because among the borders approaches are a lot of other approaches, it is important to study the border ones in more details.

The methodics creation for the development of generally IS

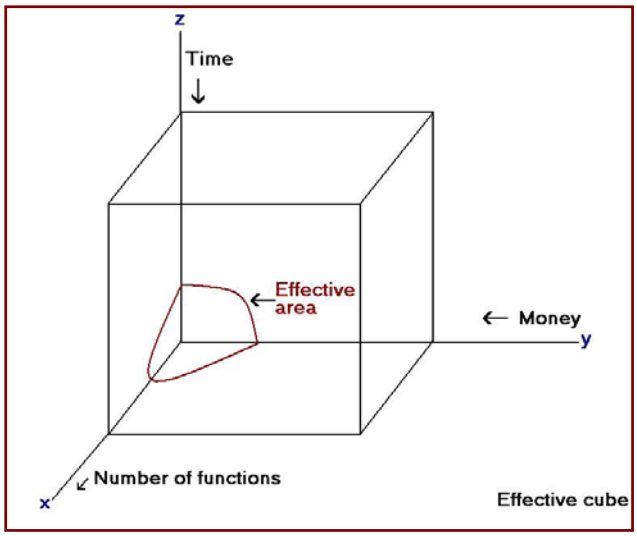
Let’s imagine, that we get to create such a methodics, which could be applicable for the development of any IS. Even though we are feeling, that this setting is similar as the setting of the development of the flying submarine, let’s see the setting in more details.

Affinity of the analysis to the effectiveness of the development of the IS

The cube of effectiveness

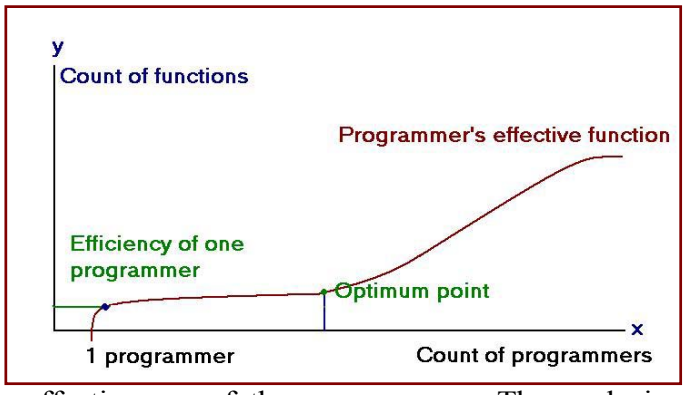
Any company developing the IS for the client is limited by the three factors. The author calls the model of the factors “the cube of effectiveness”. On the axe „X“ is viewed the

number of the functions, that is the company disposed to realize in the concrete time „Z“ for the certain money (internal costs for the development) „X“. The effectiveness area than describes the interval, in which the company is effective (we understand, the company is able to sell with profit on market „number of the realized functions“). The time and the money interact down, the number of the realized functions interacts outwards. If the time and the money decrease and if the number of the functions increases, the firm is situated in ideal position. It’s effectiveness of the development of IS increases. The increase of the effectiveness is limited and after some time will stop. The analysis and the established methodics of the IS development have a lot in common with the increase of the effectiveness. And we are finding right the „general“ methodics of the IS development.



The model of the effectiveness of the programmer

During the development of the IS stand the old rule. The most effective is one programmer. The more programmers we put the produktivity of the IS development decrease. It does not decrease linear. On the model we can see how the effectiveness of the team decreases. One programmer is effective, other is not effective in a small dimension of the functions. In the moment when he can work on the relatively big sum of functions, his effectiveness is increasing. Only some of the amount of programmers (it is displayed as the optimum) is suitable for the constant number of the functions, which are needed for the implementation. The intense raise of the number of the programmers in one project will not lead to the speeding of the project (so called influence of the tense terms).

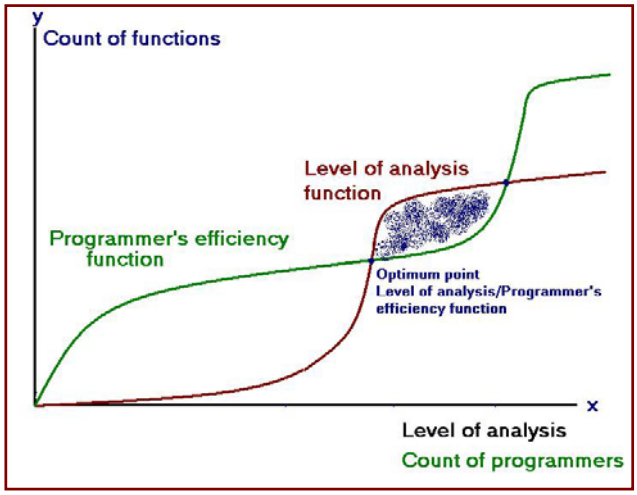


The model of the effectiveness of the analysis

With the analysis it is the similar as with the programmers. The function of the effectiveness of the analysis has the inverse course to the function of the effectiveness of the programmers. The analysis consequence is opposite than in case of the function of the effectiveness of the programmers. Instead of one programmer is able in short time to write a lot of functions, the analyst is able to analyse in short time only a small part of the functionality of the system. The following rule appears. The analysis begins to be effective only in case of the big projects with a huge number of the functions. It is evident that the analysis specification goes for only to the certain point. The detail analysis means the intense increase of the time within the minimum increase of the analyse functions.

Conclusion

It is not possible to create the generally methodics for development of the generally IS. The limited factors (money and time) and the number of the realized functions influences differently in every type of the project.



Solution

The small projects (size of the developer's team up to 10 people, time of the development process up to 6 months)
In the event of the small and non important projects (from view of the safety - for example IS for driving medical robots etc.) is the analysis uneconomical. It is possible to recommend the development process in the fast iterations.
The quality of the IS is determined in particular by the quality of the test scripts.

The middle-sized projects

In this part is necessary to define the common procedures (for example RUP). These procedures can be thanks the impact of these three factors very general. In terms of these general procedures is necessary to prepare the specified methodics. This methodics has to be suitable for the defined area of the development process.

The big projects

In agreement with the requests of projects is suitable to prepare the specified methodics. This methodics will guide the rise of IS for his all-live cycle.

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