The SoftwareExpert app is not a comprehensive project management system. It helps to get a quick and concrete overview of the IT project situation and/or the essential software system features and to save them for simple comparisons.

SoftwareExpert helps to accurately measure the software scope. This app serves mainly for the application of the COSMIC Function Point method (as International Standard ISO/IEC 19761) in a simplified form (as LeanCOSMIC) and can be used via the button "Software Sizing". Up to 20 so-called functional processes and up to 15 associated data groups (as identification of the COSMIC metrics (data movement)) can be defined/acquired. The determination of the COSMIC Function Points (CFP) with the four sub metrics Entries, Exits, Reads andWrites then takes place via the COSMIC Sizing Button whereby each functional process receives its CFP and the total CFP (Total CFP) is then displayed. This app also enables the application of a shortened COSMIC method as Early & Quick Method and the local extension approach of the process CFPs (e.g. by considering the "inner" functional scope) as Extend Method.

The special benefit of this app is the possibility (in the Estimate button) to use the estimation formulas and relations known from the international experience for the effort, the productivity, the project duration and much more due to a circumference measurement (mainly as CFP). Some of these estimates are displayed under the Project Dashboard button as a general overview. If other circumference measurements are given (e. g. as LOC, IFPUG Function Points, Story Points etc.) a conversion can be done under Convert before and the estimation formulas can be used on this basis.

The informative part of this app is supplemented by an overview of some of the very classic experiences of software engineering (as Software experiences). The measurement data can be provided with an identification and stored within the app (and reloaded later). Some examples (mostly from the COSMIC community) are already available for the app user. For helpful information the app pages contain links to the COSMIC community, to SML@b, to our metrics bibliography on our GI website as well as to the risks of Peter Neumann and a SWEBOK classification for software engineering in general. This app is useful for short and fast IT project controlling in the agile development and as educational support for computer science students and professionals based on the current knowledge in empirical software engineering.

(sorry, SoftwareExpert app has a symbolic price)

1 LeanCOSMIC means that special aspects of functionality like triggering entry, layers and data attributes are not considered explicitly.
**Software Sizing:**

Software sizing starts with the definition of the Size measurement characteristics in the *Size Measure Description.*

After this input, the **Functional Processes** (limited by 20) are defined as basic of size measurement. Each functional process can contain several (limited by 15) data groups in order to identify the data movements.
The **COSMIC CFP Counting** supports the size measurement based on the Entry, Exit, Read and Write metrics. The *Set buttons* help in the case of large metrics values.

Every size measurement page have a *Help* button. The *Help* for counting includes an overview about the *COSMIC patterns* in order to support the COSMIC software model.

For faster CFP measurement, the **COSMIC Early & Quick method** can be used. Using this method, you define three classes of CFP values and use it for counting/measurement for every functional process.
Furthermore, the **COSMIC local extension method** can be used in order to involve CFP values caused by a high functionality in the software system or application. This allows the CFP value of each functional process to be adjusted.

A COSMIC size measurement can be **stored** or **loaded** using the Load/Store button.
The **SoftwareExpert** app is usable in four languages: **English, German, French** and **Spain** depending on the language setting of your Smartphone/Tablet.

**Software Estimation:**

The different aspects of software process estimation are essential features in the **SoftwareExpert** app. The Software estimation area can be used independently of Software sizing. It starts with a **Project description** as basic for the identification of the software process estimations.
Then you can continue with the estimations if you use the total CFP value from the software sizing before.

But, you can start with your own size value. You can choose between Lines of Code (LOC), IFPUG Function Points, NESMA Function Points, Feature Points, Use Case Points and Story Points and can transform this value to the general app unit as COSMIC Function Points (CFP) using the Convert features.

Then you can perform the different estimates like effort, test, cost, duration, documentation, team size, productivity, risk and error estimations.

Note, all estimations are based on the given/transformed/defined/assumed software size. You can choose the existing value (by measurement or converting before) or you define your own size value (in CFP!).

In every part of project aspect estimation you can select (one or more) between several estimates by Experts that you can find in the literature of the empirical software engineering. Press the Average button for storing the value in the Project dashboard.

In principle you can define your own estimation using your own scaling factors.

Development and test estimations
Costs, duration, documentation and team estimations

Productivity, risks and error estimations
Finally, these estimates values are stored in the so-called Project Dashboard. You can consider and accept this dashboard or you can make any corrections in the different estimation parts and define the Project dashboard again. Furthermore, some project metrics are delivered in a temporary manner and can help to characterize your IT project controlling with interesting aspects.

Software Experiences:

The part of software experiences summarizes the well known empirical knowledge in software engineering for typical software engineering areas.

The Web links to our Metrics bibliography, the Neumann risks overview and the software engineering description in the SWEBOK could be helpful for understanding and motivating of IT project aspects and problems.
This SoftwareExpert app is based on our COSMIC books:

**Dumke, R., Abran, A.:**

*COSMIC Function Points – Theory and Advanced Practices*


and

**Dumke, R., Schmietendorf, A., Seufert, M., Wille, C.:**

*Handbuch der Softwareumfangsmessung und Aufwandschätzung*


*The SoftwareExpert app can be helpful in computer science education in order to better understand the complexities and relationships in software project management in practices.*