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Software Development Common Practices

We will like to clarify well-known facts. Since many of our customers are not in the software development business the cost of the software development, customization and maintenance and related services may be considered high. Ideally the design and development of software includes a well structure work plan that is target to prepare or manage documentation, coordination, administration, coding, testing, quality control, deployment, training, and maintenance. Each project should have a minimum of initial documentation as the requirements, development and testing, training and deployment. On many instances customers will not value some of the outcomes of each of the require tasks and want just to pay for the actual application and/or deployment, especially on small projects. Still, if some mechanism/s can be found or establish to distribute its costs within expected targets it will help for the establishment of a solid software development and support infrastructure.

Here is a description of common software development practices that may help in figuring out the overall cost:

Task	Description
<i>Pre-design (Concept design and product description)</i>	
Interviews	Generally the expected users are interviewed and all require items, issues are documented.
Functional Specifications	Preparation of functional specifications. Detail breakdown of required functionality, database schema, systems response, data protection, security and others...
Users Manual	A healthy practice is to prepare the users manual even before any coding. Here sketches of each input forms, and all user available dialogs and its expected behavior and interaction are laid down.
Project Coordination	Project schedule / cost is prepared after having some idea of the require components. Project coordination, administration and management help to control the implementation and deployment of the expected application/s.
Meetings	In each of the above meetings are use to gather additional information, test concepts, brainstorm, and to maintain all parties informed.
<i>Design</i>	
Detail Specifications	Given all pre-design collected information then is common to lay down overall strategy, identify software components and further detail each one. Here a detailed model of the system and each subcomponent is documented.
Prototype Building	Also common is to build a prototype with as much functionality as possible, still including all require and essential components.
Meetings	As soon as possible each of the above is presented to target users (customers) to maintain everyone informed and test the design.
<i>Development</i>	
Coding	Using the provided specifications the coding process starts.
Testing	After each basic component is place the testing process starts. It has

	been documented that for each hour of coding several hours of testing are needed.
Pre-Release	After each module is fully tested by the development team it is presented to potential users for further testing.
User Documentation	The user documentation is further enhanced and correlate with the actual implementation.
Technical Documentation	In this stage the technical documentation is prepared and maintained.
Project Coordination	Project schedule / cost are monitored against initial projections. This information is also used to maintain everyone informed.
<i>Pre-Deployment</i>	
Testing	After the whole application is in place a scenario as similar as possible as target production is prepared. In this stage the system is loaded with common tasks and performance is tested for all automated processes.
More Testing	The application/s is tested from top to bottom going through all modules, options and available functionality to make sure that all is working as expected.
And More Testing	The application interaction with the system and network is monitored. Adjustments are done as required and the testing procedures start again.
User Documentation	The user documentation is further enhanced and correlate with the actual implementation.
Packing	The software package is prepared as required for its distribution. The distribution test is tested and tested as many times as needed to make sure that all potential problems are solved while its installation.
Project Coordination	Project schedule / cost are monitored against initial projections. This information is also used to maintain everyone informed.
<i>Deployment</i>	
Software Installation	The software is installed and configure on client / servers.
Training	Training is offered for prospect or existing users.
User Support	A help desk should be in place so that problems found while using the application can be solved.
Technical Support	Some problems will go beyond a typical problem frame of knowledge, in this case technical support should be given to track and document software defects.
Software Maintenance	As software defects are found and documented, they are reproduced and corrected. The actual fixes are collected for the next schedule release of the software.
Adjustments	Once in production, the software will start its live-cycle and will require continuous revisions and adjustments that can be release to users periodically.
Project Coordination	Project schedule / cost are monitored against initial projections. This information is also used to maintain everyone informed.

Although the above list does not pretend to be exhaustive, it contains common tasks that are done or required for a successful end product. On various instances, especially on

projects that do not have an economic platform some of the above required or recommended tasks in the natural evolution of the software development process are not performed. In those cases quality control, product development, documentation quality and software maintenance is difficult to control. Again, figuring out how to maintain a solid software platform and reasonable economic platform is the challenge.