



# CRANDUN Technologies Inc.

1434 Binbrook Rd, Binbrook, Ont. L0R 1C0

Tel: (905) 692-0012 Fax: (905) 692-0025

[www.crandun.com](http://www.crandun.com)

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## Top 10 Advantages of a Commercial Software product

When evaluating a commercial software product such as the Crاندun Technologies libraries, the decision often becomes a choice between purchasing the commercial product versus developing the software in-house.

While it may be perceived that developing the software in-house is less costly than purchasing a commercial product, the reality is often exactly the opposite, for the following reasons:

- 1) Cost and time estimates for software development are almost always wrong! The average time overrun of software projects in the U.S. is 222%. The average cost overrun is 189%. Only 61% of originally specified features are finally available on these projects\*. Although initially it may appear less costly to write the needed functionality in-house, the vast majority of times this proves untrue. Accurate estimation is particularly difficult when the development involves specialized issues such as hardware interfacing, as is the case with the Crاندun libraries. Even a small error in estimating the in-house development effort will wipe out any cost savings from not purchasing the commercial product.
- 2) “But we only need a portion of what the commercial product offers, so we can develop that piece in-house cheaper than purchasing the product.” A common belief, but often wrong – for two reasons! At the outset of a project, it may *seem* that only a small subset of the Crاندun library functionality will be used. However, if an accurate assessment of the *true* costs of developing even that small subset is done, it is almost certainly still cheaper to buy the commercial product than develop in-house. Secondly, as most projects progress, it is often found that more and more of the capabilities of the library are actually required. If you are writing that functionality in-house, instead of using proven commercial code, your team is reinventing the wheel with fresh, untested code. Is this the best use of their time? The library’s capabilities are there for good reasons – because customers need them. Not every project uses every feature, but it is extremely likely than a given project will use a substantial portion of the functionality.
- 3) Debugging in-house software often consumes substantial (unplanned) time, whereas a commercial product immediately delivers a fully debugged, proven design. The significance of this point is often overlooked – a commercial product is not only debugged, it is *proven*. The design and architecture have been tested and used by many other users in many ways. Moreover, it continues to be used and tested, and usage issues or latent bugs continue to be found and fixed. Conversely, a poor design in a user-written product may require a complete

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\* The Standish Group International study, 1996

rewrite, or a tough bug can take many days to find and fix, quickly eliminating any anticipated cost advantage of in-house development.

- 4) Do you really want your developers spending time on things that are not core to your business? The Crandun libraries handle the details of interfacing to the hardware, and retrieving data from the sensor systems. Your developers should be concentrating on using that data to solve the problems of your business, not spending time re-solving issues that others have already tackled. Using a commercial product for the low-level hardware interfacing ensures that your developers can concentrate on making your application work, with the assurance that the data acquisition from the sensor already works properly.
- 5) The Crandun libraries have been carefully performance tuned to provide maximum performance “out of the box”. Considerable effort has been spent identifying code “hot spots”, and optimizing these to the fullest extent possible. This optimization would be very difficult and time-consuming for even the most experienced programmer to duplicate.
- 6) The cost of documentation (or lack of it) is often overlooked. It is rare for in-house projects to be well documented. Usually, the knowledge exists only in the heads of those who did the work. When those individuals move on, the product becomes costlier to support, maintain, and extend. The Crandun libraries are fully documented, with a comprehensive user manual and programmer’s guide, and sample programs, greatly reducing both initial and long-term learning costs.
- 7) The Crandun libraries provide rapid prototyping capabilities to allow customers to quickly determine if the proposed application will work. Once the application concept has been proven, the software libraries also have the performance and features for even the most demanding production application.
- 8) “It’s too hard to learn a commercial product”. It is obviously much harder to invent than to learn. The Crandun libraries have been designed to be easy to learn and use. The library comes with numerous sample programs that can be used as the starting point to build your own applications.
- 9) When you develop in-house, whom do you turn to for technical support (especially after the original developer has left)? With a commercial product, in-depth technical support is always available – at the outset of your project, and many years later.
- 10) Obsolescence protection. By purchasing a commercial product, you can take advantage of any upgrades or improvements that are done to the product. As computer systems and technologies change, you can take advantage of the upgrades available, without additional effort.