**Biographical Summary**

Born and raised in Saskatoon, CEO, Founder and Developer of CollegeMobile (CM), Mr. Chad Jones graduated with a combined four-year degree in Computer Science and Electrical Engineering from the University of Saskatchewan in 2000. After graduation, he worked for three years as a programmer at Apple, on many challenging projects. Seeing the growth of the mobile technology industry, but also the difficulty in building a company in Silicon Valley, with its soaring costs and fierce competition, he returned to the University of Saskatchewan, knowing that its Computer Science Department was "really, really strong," and its top graduates as good a pool of talent as any at Apple. Mr. Jones began teaching as a sessional lecturer, to "grow the talent" for his mobile technology firm that he could not find locally.[1] He regularly met mentor Computer Scientist Dr. Eric Neufeld, who was concerned about dwindling enrollments in Computer Science and who was interested in Mr. Jones' ideas to revise curriculum to include the Smartphone and related programming. Both men also wanted the Computer Science Department to be "in" the ubiquitous mobile phones of undergraduates, so that when those students compulsively checked their messages, "they would know that the department is a force to be reckoned with."

Dr. Eric Neufeld is a Professor of Computer Studies at the University of Saskatchewan, and has been Head of that Department since 2008. After taking his first two degrees at the University of Saskatchewan, he completed a Ph.D. on Artificial Intelligence at the University of Waterloo. Since returning to the U of S as a faculty member in 1990, he has taught across the curriculum. His two major research areas have been Anatomical Visualization, in which he built software for visual models of organs that could be measured for medical purposes, and Artificial Intelligence, in which he explored how people reason under conditions of uncertainty, to survive situations without full knowledge of what is occurring around them. Because in both areas Dr. Neufeld has strived to make practical applications, he has been a likely collaborator for Mr. Jones in mobile technology. Dr. Neufeld has published some 111 books or book chapters and articles (both invited and non-invited), and in good years brings in $80K in research funds. He supervises two PhD students and one MSc student and has directly supervised an additional 15 students.

**Description of the Innovation**

Dr. Neufeld first challenged Mr. Jones to write an interesting application for the iPhone at the University of Saskatchewan, which would get national attention. Work on the iPhone project, that came to be called the "iUsask Application (App)," led to the "iPhone Programming Course" in 2009 (CMPT 298.3, team-taught by them), which led directly to the founding of CollegeMobile (CM). Seeing in his collaboration with Mr. Jones the potential of the Smartphone iUsask App, Dr. Neufeld spent many hours assisting him in establishing CM in 2009-10.

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1 Mr. Jones says that it was and is difficult to find good mobile developers in Saskatoon, because programming for Smartphones does not require the kinds of skills that most Computer Science students are taught. Mobile Programming for mobile technology is more demanding than "writing a webpage or building a program for Windows."

CollegeMobile (CM) is "one of North America's leading developers of applications (apps) for both Smartphones and tablet computers." In its website promotion, CM reports that "four mobile phones are bought for every computer" and that "[h]alf the world's population owns a mobile phone."[2] The iUsask App, originally started by Mr. Jones and Dr. Neufeld, was a first for Canada, and offered broader, unprecedentedly secure access to confidential information like grades, and other difficult-to-program services, like a regularly-updated news feed, the library catalog and a GPS-assisted, real-time campus map.[3] The project exemplifies their belief that mobile technology can improve the social aspects of people's lives.

CM offers both Educational and Business Apps for Smartphones and other portable mobile devices. iUsask is based on "Mobilversity"--a technology platform that enables students to access the kinds of functions mentioned above. CM has adapted "Mobilversity" to create other educational apps (e.g. the app for Carleton University). Mobilversity runs through "Luminus"—a portal to such features as interim grades, participation, instructor feedback and more, so that the app (according to Mr. Jones) is really a "one stop shop."

A second factor that sets CM apart from the competition is that it integrates its apps with complicated "back-ends," to preserve the security of information. The "back-end" refers to the place where secure data is stored. This software is complex because it requires the developer to build the back-end to talk to the Windows Computer, to allow the computer to access (but also keep secure) sources stored in the back-end, while also keeping Mobile functions, like the "log-in" function, separate from it.

Not all of CM's work involves building iPhone apps, however. CM develops programs for all four mobile platforms-- iPhone (or i OS), but also BlackBerry, Android, and Windows Phone 7-- unlike other companies who work with only one platform and out-source the rest. Multi-platform capacity, in addition to back-end integration, set CM apart, by meeting clients' expectations that the format of their browser should be familiar to them. This strength allows CM to provide Business services (e.g. Research in Motion's BlackBerry.

In writing for mobile technology, a programmer is constrained by the limited space of the hardware, whose small size prohibits it from running a huge processor, as a computer would, without overheating. Programmers must not make any errors in the code they write, or misuse a resource that would drain battery life, because such flaws will prevent an app from being used. In that programming, CM developers choose between Native and Web Applications.[4] Occasionally, however, the Web browser fits the programming need better, and sometimes an application requires a hybrid version of both Native and Web Applications. For instance, with the iUsask Application, the

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2 See www.collegemobile.com

3 Only Stanford and the University of San Diego released apps prior to iUsask, but they were less ambitious in scope.

Library button is a webpage contained within the application (as a Web application), while other parts like the class listing and grades are fully Native.

**Commercialization and Marketing**

The major media attention that the iUsask Application received in its first two years (including three articles in "MacLean's," stories on CBC and CTV, and in *The Globe and Mail*) prompted companies and universities to call CM, wanting applications of their own. Today CM has 20 projects in-progress, mostly in Canada and the US, but also in the UK; and it fields calls from as far away as Egypt. CM has built apps for diverse clients like Carleton University, McGraw Hill, the Saskatchewan Party and the Credit Union Centres of Canada, amongst numerous others.

CM typically sells a license to clients to use the software that CM creates—typically $35K upfront, followed by an annual fee (of 20%) of about $7K. CM's profit is the fee charged minus the cost of the developing the software. The university remains a part-owner of CM, as it owns shares in the company, as does the ILO (at 12% ownership, for a $45K initial investment). Dr. Neufeld remains a consultant to CM, confers with its board of directors and continues to hold shares in its enterprise. In addition to a new statistical Software educational app that reflects 10 years of research, Dr. Neufeld estimates that he will have at least two more potential projects with CM that will come to fruition in the future.

**Social and Economic Significance**

Before the iPhone's release in Canada, Apple had sold more than 21 million iPhones and many millions of apps for them.[5] Mobile Applications now rival the internet as the new technology of choice in Business and not only in Educational markets.

Through the success of CM, Mr. Jones and Dr. Neufeld (with some interaction with colleagues in the Department of Computer Science) are building a mobile industry from scratch. High–tech mobile machines are relatively cheap (many under $200), so that great ideas, not large funds, are needed. This means that there is a huge opportunity for post-secondary students and researchers to innovate. Mr. Jones continues to teach his annual "iPhone Programming Course," to serve his ongoing need to recruit more of the province's best Developers for CM. The founding of CM also demonstrates the usefulness of the university collaborating with business.[6]

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4 A Native Application is software written from scratch, without the assistance of a browser. It is harder to write, but usually better to view. By contrast, a Web Application runs on a browser (as a webpage does), and is easier and faster to write, but does not usually look as good.

5 Between 2007-2009. The international market for these apps is huge, evident in the fact that Stanford's first ever iPhone App was downloaded by nearly 20,000 people in its first year—more than the population of its entire campus. The iUsask had 3,000 downloads in the first three months after its release in 2009, and is expected to reach 10,000 in 2012.

After decades in which multinationals have taken the money of Saskatchewan graduates to move elsewhere, CM takes in money from the world to be spent here, in Saskatchewan. As a result, we are becoming known as a centre for mobile technology.  The iUsask Application and its fruition in the founding of CM were major events in the university and the country. CollegeMobile shows that Saskatchewan can keep pace with--or even outdo—wealthier, world-class institutions. Hard work, great timing and keen intuition into the needs of contemporary society have enabled Mr. Jones and Dr. Neufeld to take us there.

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6 CM has been assisted by Saskatoon's "Ideas Inc.," a business incubator, funded in part by the university and by the province, to reduce the costs of new business development.