A Platform on Cloud for Education on Demand
– A R&D Project from the ArchiTech Consulting LLC

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This project is a cloud computing based common service platform for Distance Learning and Online Learning on Demand. It will shift the technical implementation and operation burden from individual education organizations to a common high-quality professional service place, so to reduce the duplicated efforts and costs and to achieve better performance. The education service providers, either organizations (e.g. professional education institutions, the corporate training organizations, universities, colleges, secondary education organizations) or individuals, can open their teaching service on the platform, and can select and customize their services based on their specific needs. The user selectable services will be implemented in the form of multi-tenant enabled Software as a Service (SaaS), instead of stand-along applications that we have today.

The platform will be structured in multiple layers to enable flexible update in each layer without stopping service, and to take advantage from cloud computing for easier scale and maintenance. The project intends to provide user convenient tools and service improvement tools across the platform. Both teachers and students can benefit from asynchronous communication with multimedia content in-time processing mechanisms, and from the platform community knowledge sharing and collaboration environment.

There are three major innovation aspects:

1) A new generation education/training model based on Internet in the form of *Service on Demand*
2) The cloud service implementation model, which is a multi-tenant based multi-media content management system. It will evolve from Software as a Service (SaaS) to Platform as a Service (PaaS)
3) The associated business model, service model, and operation model

Its benefits can be summarized as the following:
- The distance learning on demand allows the students and teacher interleave their questions, answers, comments and feedback throughout the course material, reducing the need for real-time interaction.
- Ability for a teacher to manage and offer interactive distance learning content through the web, through low cost subscription or pay per-use models.
- Course materials are improved with each teaching, as the teacher is able to modify the course precisely with exact student feedback on each aspect of the course.
- Based-on cloud computing model that obviates the need for large infrastructure or startup costs
- Take advantage from cloud computing environment via software as a service model with the new type of multi-tenant enabled applications for service sharing and scaling

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- Multi-tenant data management mechanism to support the software as a service running on the platform
- Flexible layered platform structure allows the platform to improve over time, modularly incorporating the best practices of current or future distance/online learning solutions.

Cloud computing is changing the world of how IT is running. Merrill Lynch estimates that within the next five years, the annual global market for cloud computing will jump to $95 billion. Therefore, the R&D of education platform in cloud computing environment is an urgent topic. It will enable education technologies to move into a new paradigm.

Note*: This project, initially named as "University on Cloud", was a fast-track (Phase I and II) SBIR proposal to the Dept. of Education in early 2011. It won the 2011 "Chunhui Cup" innovation and entrepreneurship competition sponsored by the Chinese Dept. of Science and Technology and the Dept. of Education latter during the year. Partners for development, production, and service hosting are welcome.