

# Ten Scalability Factors in Distance Education

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## INTRODUCTION

The institutional decision about how much technology should be used to scale distance education enrollments, reduce costs, maximize profits, and protect course and program quality is both institutional specific and complex. Guri-Rosenblit (1999) noted that “many conventional universities worldwide operate as large-scale universities and are in a continuous search to find the right balance between massification trends, quality education, and the catering to the individual needs of students” (p. 289). This research is an outgrowth of the authors’ own efforts to identify relevant scalability factors and their interrelationship one to another in a traditional university’s distance education program.

This article identifies 10 additional factors beyond information technology (IT) or information communications technology (ICT) that merit careful consideration by decision makers as they define their own institutions’ degrees of scalability. Each institution’s level of scalability is determined or characterized in part by the interrelationship of these 10 factors within their given technological context or infrastructure: interaction, learning levels, student class standing, faculty tenure or continuing status, completion rates, cohort versus noncohort settings, degree- versus non-degree-seeking programs, market type, tuition costs, and profitability. The authors briefly examine their own distance education program and others, including those of mega-universities, across these 10 scalability factors.

## BACKGROUND

Scalability at many universities is defined as the ability to increase enrollment while still remaining profitable,

or at least financially self-sustaining, without adversely affecting course and program quality. Scalability for many mega-universities is defined as reducing costs to retain eligibility for government subsidies, grants, foundation awards, and other funding sources (This will be discussed in further detail later in the article.). In any case the perpetual challenge for universities is to effectively manage the tensions of the eternal triangle: to widen access, to improve quality, and to lower costs. Achieving success within the constraints of this strait-jacket sounds impossible, but is nonetheless deliverable in varying degrees (Daniel & Mackintosh, 2003).

One large distance education program in the United States, Brigham Young University (BYU), with total annual enrollment approaching 100,000—the threshold for being considered a mega-university—has experienced extraordinary growth in the past 7 years in its university enrollment and unprecedented growth in its secondary and noncredit enrollments. In 1996, there were 37,691 total enrollments, and at the end of 2003, there were 96,513 enrollments. The program has managed to multiply three times over this time period and remain very profitable, but like many other institutions, BYU is trying to “manage the tensions of the eternal triangle” as it seeks to determine the acceptable but certainly varying degrees of scalability and success. (Professor Farhad Saba, Letter, June 11, 2003), international distance education consultant, recently made a site visit to BYU and wrote in his final report, “The outstanding question for [BYU’s] Independent Study, as well as for the university community, in general, therefore, is to what extent courses could be made scalable...”

The large mega- and open universities of the world, such as Anadolu University, China TV University System, Universitas Terbuka, Indira Gandhi National Open University, Sukhothai Thammathirat Open University,

Korea National Open University, Payame Noor University, the Open University (United Kingdom), and so forth, are accustomed to an enrollment scale that most distance education programs elsewhere in the world have not even considered. Sir John Daniel, president and chief executive office of the Vancouver-based Commonwealth of Learning, reported on September 7, 2001, that a new course at the Open University (United Kingdom) entitled, *An Introduction to the Social Sciences: Understanding Social Change* “attracted nearly 13,000 students, an all-time high for a single course” during the previous year (p. B24). Contrast this success scaling a course at a mega-university to the following perspective on scalability by Jeffrey E. Feldberg, chairman of Toronto-based Embanet Corporation, which represents a much smaller North American distance education program:

We have all heard of a college or university that was successful with one or two courses and then had major problems when they scaled to multiple courses... going from 20 to 30 online learners to 2,000 online learners requires a different skill set, IT environment, and resources...If you are unable to scale, you are out of business. (Feldberg, 2001, p. 3)

While the issues, challenges, and questions about scalability differ from one institution to another, these differences vary in degrees across the 10 factors discussed in this article. However, all institutions seek some measure of scalability as they endeavor to maintain or increase enrollment, leverage scarce resources, minimize or contain costs, maximize profits, and establish a sound IT and ICT infrastructure. Sir Daniel, upon receipt of his honorary doctorate degree from the Hong Kong Open University, said that this idea of scaling for open universities is not a theoretical issue because of numbers and associated costs. He said that even trying to experiment with a new method is risky, especially for students, if not done correctly because a “small” experiment is not small when it comes to the large-scale context that open universities must operate within (Daniel, 2002).

## **SCALABILITY FACTORS**

Scalability for distance education institutions, including mega-universities, is defined by a complex set of at least 10 interrelated factors. In Figure 1, 10 scalability factors

are depicted: interaction, learning levels, student class standing, faculty tenure or continuing status, completion rates, cohort versus noncohort settings, degree- versus non-degree-seeking programs, market type, tuition costs, and profitability. Superimposed over these factors is a rudimentary three-level relationship or categorization loosely illustrated by the solid-line, dotted-line, and no-line rectangles. Generally and roughly speaking, the solid-line rectangle represents the profitable courses, and programs that employ automation and target lower learning levels. The dotted-line or middle rectangle in Figure 1 represents moderately profitable courses and programs, whereas the far-right, no-line rectangle represents the less profitable, more specialized, but higher level learning courses and programs.

The solid rectangle in Figure 1 depicts BYU Independent Study’s level of scalability. BYU’s profitable distance education program focuses on secondary through second-year (sophomore) university students. This program features an automated assessment-feedback system called Speedback™ for many lesson assignments, assesses lower tuition costs for students, and is less able to influence faculty load, rank, and status issues. However, the trade-offs for this kind of scalability yield moderate levels of completion since students enter courses anytime without a cohort and progress at their own pace without the faculty-student or student-student interaction that would be expected for the higher grades and levels of learning.

Many mega-universities operate in the middle or far right of Figure 1, which includes degree programs (undergraduate and graduate), cohort groups, higher levels of learning and completion, and more faculty involvement and consideration for continuing status. However, faculty and tutoring burdens are greater, costs are higher, and subsidy requirements are more significant.

The reader will benefit from referring to Figure 1 occasionally as the 10 factors are briefly introduced. The interplay among the factors is complex and the graphical attempt to represent the complex and institution-specific interactions is an oversimplification. Nonetheless, sliding the imaginary rectangle across the graphical depiction of factors should be illustrative of the relationship among some factors and of the more complex interplay among all factors.

Now a brief introduction—more brief for some factors than others—of the ten factors follows.

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