

Chapter 6

Smart Learning in Corporate University

Abstract Corporate university is a platform providing further education for employees in the corporation. Smart learning advocated by the corporate university helps the corporation to maintain its uniqueness and succeed in fierce competition. This chapter introduces the development and current status of corporate universities in China, including their background, features, functions, teachers and the structure of courses. The connection of learning elements in the corporate university and smart learning is also identified with case analysis in this chapter. The online platform of corporate university is introduced by description of its framework, functional module, application and effective implementation. In the end, the future directions of corporate universities are discussed.

Keywords Corporate university · Smart learning · Learning elements · Online learning platform · Future development

6.1 Introduction

As described by Allen (2002), a corporate university is any educational entity that is a strategic tool designed to assist its parent organization in achieving its goals by conducting activities that foster individual and organizational learning and knowledge. According to Jeanne Meister, corporate university is the chief vehicle for disseminating an organization's culture and fostering the development of not only job skills, but also such core workplace skills as learning-to-learn, leadership, creative thinking, and problem solving (Meister 1998a). It develops because of "the emergence of the knowledge economy" (Meister 1998b).

Corporate university was also studied by Ramli (2008), who drew a conclusion that the following explanation aptly describes it, which is "A Corporate University (also known as an Academy, Institute, learning center or college) is an organizational entity dedicated to turning business led learning into action. It is designed, driven and intricately linked to the company's business strategy with the aim of achieving corporate excellence through improved staff performance and a

company-wide culture in which innovation can thrive. In addition to generating value from their intellectual assets, it helps organizations to identify, retain and promote key employees, whilst at the same time providing valuable, work based learning and career development opportunities for staff.”

Corporate universities (CU) are a growing trend in corporations. In 1993, corporate universities existed in only 400 companies. By 2001, this number had increased to 2000, including Walt Disney, Boeing, and Motorola (Denise 2002). Just as Zeng and Liu (2006) stated, “The education of enterprise university research cooperation is the demand of economic and social development and is the demand of the enterprise and school development.”

The concept of corporate university (CU) originated in the United States in about the early 1920s and became popular with most of organizations of America after the 1980s. (Ji 2011) However, CU in China is a recent phenomenon although it existed more than eight decades in the western world (Sham 2007). The development of corporate university in China is a result of “drastic economic growth and fundamental structural change” (Sham 2007). Just as Jiang (2012) said, university of China enterprise development in recent years has caused widespread concern in the various sectors of the community, began to rapidly increase in number, has become the fastest growing area of Chinese higher adult, the most striking part. And there is no doubt that CU as a new education model in China and will last 10 years also has made significant progress in development, to promote the development of knowledge economy and social progress provides a powerful intellectual support (Jiang 2012).

It is obvious that CU has been studied by many excellence experts for a long time, such as the comparative study of the traditional public university and the corporate university, which raise questions as to the appropriateness of the corporate bodies adopting the term “university” (Blass 2001). Paton et al. (2005) analyzed the initiatives reasons of the corporate university and Levinson (2007) interprets the main goals of corporate university. What’s more, Anderson and Lichtenberger (2007) present an overview of the corporate university landscape in Germany. Dealtry (2000) sets the scene for the exploration of corporate and company developments in the field of the corporate university and related development paradigms. In addition, Prince and Stewart (2002) try to offer a contribution to enabling an understanding of the concept of the corporate university to be developed. Amy and Jessica (2012) explore and advance the understanding of the corporate university phenomenon. In a conclusion, most of researchers are focusing on the concept, the origin and development models of corporate university. However, the future development trend and learning methods of corporate university are rarely mentioned in the former studies, not to mention the new term smart learning.

In the Internet+ era with rapid development of information and technology, smart learning has become more and more important. Under this situation, it becomes unavoidable to popularize smart learning in corporate university. Smart learning is changing the way we learn and it is starting to change the way we live. This study is going to investigate the smart learning in corporate university and the relationship between them. For the smart learning in corporate university has

become an inevitable trend in the future on account of its intelligence and adaptability, it should be the issues drawing the close attention of researchers. Analyzing the corporate university from the perspective of smart learning may stimulate corporate universities to rethink their future development tendency as well as management direction.

6.2 History of Development and Current Status of Corporate Universities

The enterprise is one of the important places for staffs' learning. When the era of knowledge economy is globally coming, the enterprise competition will be finally ascribed to the competition of talents, and will be further embodied as the competition of staff quality and staff learning ability. Therefore, it is the important contribution of the corporate development strategy in this period to acquire and foster excellent staffs and management talents, and integrate management staffs with corporate culture. Corporate university is undoubtedly one of the main pathways to complete development strategy.

6.2.1 Developmental Background of Corporate Universities

In the 1920s, the degree of corporate intervention in education and occupational training continued to increase, and the development of high-qualified human resource has become the core element to improve corporate comprehensive competitiveness. In this condition, corporate university emerges as a new corporate education mode. Three main factors account for the emergence of corporate universities as follow:

1. Responding more effectively to the global challenges. The increasingly intensive competition environment proposes new requirements for corporate development: an ability to integrate learning strategy with commercial target; an ability to increase learning opportunities for staffs; etc.
2. Establishing a new form of continuing education. Corporate university emphasizes on common development between organization and individual, and provides for people in various ages with multiple educational opportunities in convenient and timely ways.
3. Supporting the staffs' occupational demand. New contractual relationship is formed between the corporate and the staff, that is, the corporate provides for staffs with opportunities to enhance abilities, and staffs will pay back their higher production capacity and commitment to corporate mission during the working period.

6.2.2 *Features and Functions of Corporate Universities*

Corporate learning regards the whole corporate as a learning subject (Ke 2010), which is a series of management activities to improve the staff quality, ability and job performance, and its core is to learn and gain knowledge. Corporate endows staff with the opportunity of learning while working, and utilizes technology to achieve the maximization of learning and outcome. The effectiveness of corporate learning depends on the attitude of enterprise manager. It is necessary for enterprise manager to consider the value and significance of learning based on decision-making level, and formulate the corporate learning strategy in accordance with the requirements of the corporate and the staffs. Meanwhile, corporate university, built on a relative mature stage of corporate development, is regarded as an organization supplying learning service. It embodies the escalation of administering functional department, and represents the spread and extension of service client. (Please refer to Table 6.1).

The word “Corporate University” was firstly adopted by Walt Disney in 1950s. Corporate university is also known as Company University, which is a new type of educational training organization funding by the corporate, and propel the learning of individuals and organizations by various planned learning activities, and propel knowledge and intelligence development, to support the corporate in carrying its mission (Li and Wu 2013). Corporate university is a senior form of corporate education development, and one of the important means for the corporate to effectively improve core competence and maintain the uniqueness.

Corporate university differentiated in its orientation, teachers and training methods as following (Wu and Liu 2013):

- It is established by corporate funds, and it owns the self-development goal and strategy;
- The internal trainers lead all business lines, and also are assisted by the teachers from higher education institutes, research institutes and professional training institutes;
- The training method is based on analogue simulation and mobile platforms to implement self-course design, interactive self-help;
- Form the educational and training system which integrates the value chain process externally, and integrates tangible business and staff ability promotion internally;
- It does not aim to education and training, but it pays more attention to practical problems and the discovery of human resources in the enterprise.

The functions are mainly realized by corporate university are (Jiang 2012):

- To provide a guarantee for corporate strategy and corporate development. As a part of corporate development strategy system, corporate university supports a series of reserve force supply and related resource expanding work.
- To provide an effective path for corporate cultural construction. By the effective utilization of internal and external training paths, corporate university offers help

Table 6.1 Development stages and features of corporate learning

Development stage	Initiate stage	Growth stage	Mature stage	Sustainable development	
Learning service organization evolution	<ul style="list-style-type: none"> • Administration department • Personnel department 	<ul style="list-style-type: none"> • Human resource department • Training department 	<ul style="list-style-type: none"> • Training center • Learning development center • Human resource development center 	<ul style="list-style-type: none"> • External corporate university in service of supply chain 	<ul style="list-style-type: none"> • Export-oriented corporate university in service of society
Corresponding features	<ul style="list-style-type: none"> • Emergency training without professional training post or definite training plan • Transit to human resource department gradually 	<ul style="list-style-type: none"> • Establish professional training post, and starts to plan for annual training plan • Select courses as per organization development and post demands, and starts to establish training system • Establish training system and starts Training Department, which belongs to Human Resource Department 	<ul style="list-style-type: none"> • Established relatively perfect training system, and starts to pay attention to staff occupational career plan, and formulates corporate internal training courses, and establishes teacher system • Training institute independent with Human Resource Department, and is the early form of corporate university 	<ul style="list-style-type: none"> • On hardware aspect, it has independent training base and advanced teaching facility • On software, it has perfect training system and management system 	<ul style="list-style-type: none"> • It has advanced training resource and brand influence power. • The service objects are expanded to the whole society, and can promote corporate image and benefit
Service object	Middle-layer staffs in the corporate	Middle and high layer staffs in the corporate	Staffs in the corporate	The whole supply chain	The whole society

for corporate culture construction. The training of corporate university to external students, potential customers and strategic partners can make them understand the corporate culture better, and solidify the loyalty and stable relation between cooperators.

- To provide featured education service for corporate development. By carrying out various education activities, corporate university can specifically and efficiently provide high quality education service for different level staffs in the corporate, in order to cultivate excellent knowledge-based staffs and to meet the requirement of high quality human resource development.
- To optimize knowledge resource in order to realize the long term development of the corporation. As the upgraded version of traditional corporate educational institute, the corporate university is just like a resource integrator, which can capture the forefront knowledge resource of the corporate, to concentrate various types of knowledge resources into the corporate university to a maximum extent.
- To foster high quality staffs for the corporate. Corporate university is not only the complementation to knowledge and training to skills of staffs, it injects new vitality to the corporate by the potential ability development to staffs.

6.2.3 Teachers and Course System in Corporate University

Based on corporate practice activities, the Corporate University is closely related to government policies, technological reform and cultural concept; in order to be “innovative, practical and effective”, it is necessary to change the learning content of corporate, to make it follow the change of times, and the teachers of corporate university present flexible and diversified features.

The faculty contains external teachers and internal teachers:

1. External teachers engagement. The external teachers mainly include professors of higher learning institutions and lecturers of professional management consulting companies. They are equipped with advanced management philosophy and thoughts, abundant teaching experience and diversified teaching skills. However, they are usually the experts in certain course field; they give almost the same lessons when faced with different industries and corporate with different requirements, therefore, they will not provide substantial significance and help for the practical operation of the corporate.
2. Internal teachers selection. The channels for corporate university to select internal teachers include: middle and high layer management staffs of the corporate, middle and high layers of technicians, business backbone as well as grass-roots staffs with excellent achievement or extruding contribution. The superiority (advantages) embody on that: the senior managers in the corporate clarify the training requirements and development objectives of the corporate, and the

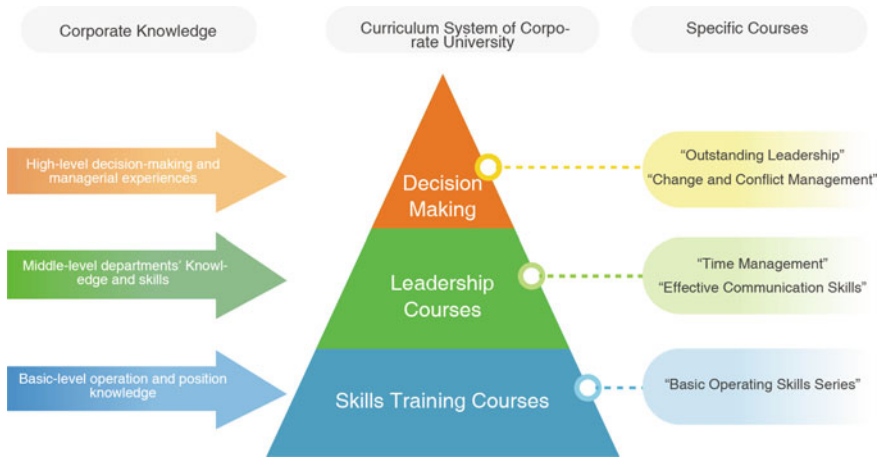


Fig. 6.1 Corresponding relation between corporate knowledge and corporate university curriculum system

course design and teaching content are more practical and targeted; the teachers are senior corporate managers, which makes it easier for the broadcasting of strategic objectives and corporate value system, corporate culture and corporate vision. But relatively, they have limited teaching skills and cannot effectively motivate students; they have relatively less teaching experience (Tian 2013).

The course system of the corporate university is composed by unique knowledge of different positions and the public knowledge of the whole corporate. They form the three-dimensional, complicated and internally disciplinary organization structure including corporate staff layer structure, corporate and staff development stage. The course objective of corporate university can be analyzed, developed and concluded as per the specific work responsibilities of different posts, or the different knowledge needed by different staff. Corporate university courses can be divided into three types: the first one is general type, mainly refers to culture, occupational quality and basic capacity; the second one is specialty/technology type, mainly refers to marketing, audit, finance, human resource, operation, market and public affairs as well as professional basic skill; the third one is management class, mainly refers to management basic skill, management move forward and leadership promotion (Fig. 6.1).

6.2.4 Revolution of Corporate Universities in China

The corporate university in our country appeared and developed with the change of corporate development and competition environment, which can be divided into the following three development stages:

The first stage: embryo stage regarding training school as main part (beginning of new China—initial stage of 1990s).

In the planned economy times in the last century, many corporates established their own corporate technical schools or staffs and workers universities to cultivate their staffs; taking academic education as the emphasis, it became a kind of important supplementation to national academic education. In the 1980s, with the establishment of the market economy, the idea that corporate training school takes academic education was not changed, but it turned the emphasis on the improvement of staff skills gradually. In this stage, most corporate universities were held by traditional manufacturing industry corporate, and with the aim of satisfying the corporate production post requirement, and provided staffs with immediate and practical production skill training.

The second stage: the primary development stage focusing on improvement of staff skills (early 1990s—later 1990s).

In the early 1990s, with the intensive corporate competitions, there were abundant amount of overseas funded corporate rushing into China, and a large number of private corporate came up. In 1993, Motorola China Zone Corporate University established. Under the driving of foreign-funded enterprises, many domestic corporates began to realize the superiority and importance of learning in cultivation and improvement of corporate competitiveness. During this period, the corporate training schools in our country began to change into the corporate university taking improvement of staff skills as the emphasis, with their main function as a training center and relatively low training layer. The training contents mainly include post requirement and individual performance improvement. Most of the training teachers are external teachers, and most students are internal staffs of the corporate.

At this stage, emphasis is laid on training for the corporate internal staff. It is the most primary and direct purpose to conduct systematic training of the internal staffs to improve their comprehensive quality and professional ability.

The third stage, the reform period taking realization of corporate strategy as the emphasis (later 1990s to today).

In the late 1990s, the development of corporate university was in a management reform period focusing on improving competitiveness. Corporates required their universities to improve corporate competitiveness and promote organizational reform, to realize the corporate strategy objective. According to the strategic requirements, the objective for corporate university training and development may be extended to the members of the upstream and downstream of the whole commercial value chain, and it may provide staffs with educational background learning, such as MBA.

In this stage, by providing customers, staffs, suppliers, partners and other potential customers with targeted service training project, to realize the win-win on each process of the industry chain.

Corporate universities in the past usually laid stress on standardized construction, as well as training systems, teaching team and course development, the work mode of which can be call as fragmented and processed standardization construction, which makes corporate university input a large quantity of resources and energy, but obtain limited effectiveness. With the evolution of university development process, different from traditional standardized thought, the modern corporate universities lay stress on result-oriented thought; it is necessary to utilize systematic thought and grasp the critical process of corporate university value creation, and conduct effective resource configuration, to create the maximum value (Table 6.2).

Specific development situations of corporate universities in our country:

The corporate universities originated from the Crotonville college established by General Electric Company (GE) in 1956. In 1993, Motorola firstly introduced the concept of Corporate University into China; in 1998, Hisense and Chunlan established their own corporate universities, respectively; after 2008, the number of corporate universities increased in a speed of 236 each year and 1.5 each day. Up until the end of 2012, the number of corporate universities in China had reached 1186. And then, the number was increased by 800 each year. Up until 2014, the corporate universities in China had been more than 2500. And nearly 50 million people accept the education of corporate universities (Fig. 6.2).

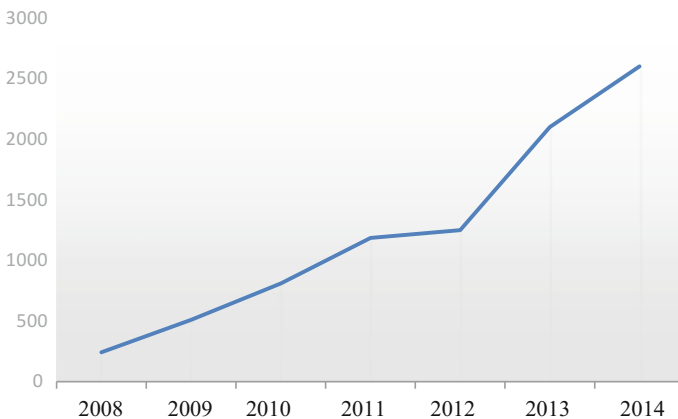


Fig. 6.2 Corporate university establishment quantity trend during 2008–2014

Table 6.2 Development revolution of corporate universities

	Training item	Learning item	Performance item
Leading personnel	Training teachers	Students + instructors	Students
Training mode	Based on ability + task	Based on ability + task + problem	Based on ability + task + problem + performance
Roles of training department	Demand analysis, purchase instructor and organizational implementation	Analyzing and planning, purchase instructor and implementation together	Providing method and tools, and integrating expert resources
Roles of students	Individual learning application	Solving problems for group learning	Improving group performance
Roles of experts	Formulating course and giving lessons	Planning, giving lectures and coaching	Giving lessons and coaching
Project effectiveness	Group ability improvement	Organization ability promotion	Organization performance promotion

6.2.5 *Smart Learning in Corporate University*

According to the global environment uncertainty, it is required for corporates to conduct continuous updating and recycling based on a learning organization to obtain success. As for corporates, learning becomes a kind of basic competition element and survival method, and all the changes propose new requirements to the organization type and learning ability to the corporate. Smart learning in corporate university is one of the formats for evolution of learning organization. It means that organizations have the ability of continuous learning, and can give full play to the innovative thoughts of staff. It is a kind of organizational atmosphere which can form learning sharing and interaction. The smart learning in a corporate university becomes the inevitable trend of corporate development because of the intelligence and adaptability.

Corporate digital learning is a process in the corporate or between corporates that promote group interaction and knowledge sharing through information and communication technology. To realize the application, conversion and creation of corporate knowledge, to improve corporate adaptability and competitiveness (Ke 2010). This is also the obvious features of smart learning in corporate university. This form of learning focuses on corporate staffs or corporate learners, and is a new learning model with complete learning experience.

Features of smart learning in corporate university:

1. Information technology as the main support.

The smart learning in corporate university must be established on the basis of effective informationized learning environment and mechanism, to realize the information acquisition, broadcasting, explaining, sharing and knowledge conversion of learning subject at any time and place, by any method and any step.

2. Offering diversified collaborative communication work.

The smart learning in corporate university can provide diversified collaborative communication tools, in convenience for corporate members to construct effective network practice community, to build up relaxed and efficient learning atmosphere.

The smart learning in corporate university includes four aspects of contents: staff learning activity, training teaching activity, staff learning content and corporate learning space-time.

Staff learning activity is the learning tasks, the learning method adopted and the learning result after finishing the learning objective of corporate staffs on learning,

Training teaching activity refers to the teaching strategy during selecting, organizing, adjusting and controlling of student learning activities by training institute, the learning support during learning activities, and the learning evaluation during and after learning activities.

Staff learning content refers to the learning media and learning resource of learning activities, as well as the learning objective when guiding students to develop learning activities.

Table 6.3 Instructions to features of smart learning of corporate university

Characteristic dimension of smart learning in corporate university		The learning condition should be achieved in corporate university in the future
Technology support	Tracking and analysis technology	Utilize learning behavior tracking technology, to obtain the learning behavior data of staffs, for example, learning system log in times, online time and public comment, to know the learning status of staffs and give suitable and timely help
	Evaluation and support technology	On teaching support aspect, there will be digital teaching materials in the future, which will play the role of supplementation to paper teaching materials by virtue of abundant learning resource and learning activity management system
	Perception and adaptive technique	The interaction-based brand new informationized construction idea, in combination of whole set of teaching terminal equipment such as Smartphone, tablet computer and electric white board, and in integration of excellent and abundant teaching resources, to form man-machine interactive and instant interaction network learning environment
	Organization and reconstruction technique	The high technology means are used to enrich learning methods, for example, utilizing disk to conduct man-machine dialogue and self-coaching training, and utilizing terminal technology network to conduct large scale remote training, to achieve qualitative changes on training and teaching methods
Learning system	Staff learning content	The fragmented learning will become the mainstream learning form in the future. The learning of corporate university shall be in accordance with this feature, to achieve short length, focused content, to meet the requirements of querying when needed and using after learning of the corporate staffs in the future. The learning content can be extended to cases, experience sharing and some standard operation norms
	Staff learning activity	Provide corporate staffs with the double learning resource including face-to-face teaching and network teaching, which supports for not only collective learning but also individualized learning
	Corporate learning space-time	By technologies such as virtual classroom, immediate chatting and micro world, corporate staffs conduct learning, and extend corporate learning into the social life, but not limited to the corporate environment
	Training teaching activity	By means of group discussion and online chatting room questions and answers, the training teaching activities eliminate the boring and uneasy emotions during training process. By utilizing smart teaching environment, the classroom face to face teaching can grasp the requirements of staffs, in convenience for training instructors to adjust their teaching contents flexibly

Corporate learning space-time is the learning sequence for the corporate learning resource arrangement, the learning space of developing learning activity (including the learning space of physical learning environment and virtual learning environment) and the learning community of participating learning and discussing learning (Table 6.3).

6.3 Learning Elements in Smart Learning of Corporate University

At present, most of the corporate universities in our country are still in primary development stage. Although the number of corporate universities in our country is considerable, only a small part of them is in accordance with the connotation elements of corporate universities. With the development of the internet, and with the propelling of new generations of information technology such as cloud computing, big data and ubiquitous network, corporate universities are constructing smart learning environment of smart learning and smart education, and the frame of smart learning has been preliminarily formed.

6.3.1 Learning Elements in Corporate University

We will conduct a brief analysis on the learning elements of corporate universities in combination of smart learning frame, on four aspects of staff learning activity, training teaching activity, corporate learning space-time and staff learning contents.

1. Staff learning activity.

Staff learning activity includes elements of learning outcomes, learning tasks and learning methods. “Staff-centered” learning mode is the leading mode of smart learning, which can meet the individual, ubiquitous, immigrating and group intellectualized development requirements of learners (Feng et al. 2013).

In which individuality means teaching students in accordance of their aptitudes and making the best use of the circumstance aiming at learning activity. Individuality usually includes interface individuality and service individuality. For example, in the same course, learner A is provided with video explanation, and learner B is provided with character explanation. The ubiquitous learning means to provide learners with necessary, sufficient and well-organized learning resource at any place and time.

Learning in context is efficient, and it is necessary for smart learning to provide learners with necessary support for situated learning; this design shall be person-first and situation-based, and the learning situation can be perceived and

evolved, to establish knowledge base according learning situation, to provide optimum learning service. Group intellectualized learning refers to a group composed by learners, teachers, experts and instructors, who often conduct communication during learning process, and share various learning resources and finish certain learning tasks together.

2. Training teaching activities.

Training teaching activities include elements of teaching strategy, learning support and learning evaluation. In the smart corporate training teaching activities, the teaching method lays stress on activity design, and it evaluates learning outcomes based on the adaptability of the cognitive characteristics of learners. In corporate universities, training teachers can utilize augmented reality technique to present various real learning situations, to make learners experience the learning objective in an immersive way, to enhance their learning interest and motivation. According to the learner preview result recorded by the system, the training teachers lay stress on the explanation of the difficult knowledge points for students; by utilizing the abundant learning resources provided by the system, they design various learning activities.

3. Corporate learning space-time.

Corporate learning space-time includes elements of learning time sequence, learning space and learning community. Training teachers can utilize the videos recorded by classroom recording system and the student generating resources recorded by learning support platform to conduct analysis, and rethink their experience and shortcomings during teaching process, and compile reflection and exchange with colleagues, or they can utilize the learning support platform to give coaching and communication to the problems proposed about homework.

The smart corporate learning space-time is the high end form of digital learning environment; it is the appeal of corporate staffs to learning environment development under social informatization background, and is also the support condition for effective promotion of teaching method evolution. Smart learning space-time aims to make the learning field percept learning situation, to recognize the characteristics of learners, to provide suitable learning resource and convenient interaction tools and record learning process and evaluate learning outcomes automatically, to improve the effective learning of learners.

It is required for the smart corporate learning space-time to promote the learning and development of learners, to make learners achieve happy and efficient learning in classroom. In order to achieve this aim, it is necessary to take learning environment and activity into consideration, in which environment includes physical environment and learning support platform. On physical environment aspect, it is necessary to provide high interactive teaching and learning equipment for classroom subjects, to effectively support for the acquisition, treatment and presentation of classroom subjects to learning resources. The smart environment control can

provide preferable external environment for classroom subjects, and conduct adjustment on light, temperature, sound, background music and air quality according to the real-time state of classroom. Innovative space layout mainly takes the supply of more humanized tables, chairs and facilities for learners, and the implementation of combination of tables and chairs according to the requirement of teaching and learning activities, to form learning groups to be convenient for the development of group learning activities (Chen et al. 2012).

4. Staff learning contents.

Staff learning contents include elements of learning media, learning resources and learning objectives. Smart corporate university learning can conduct intelligent analysis on the target information submitted by learners, and help learners to acquire the needed resources in a quick and accurate way, and intelligently push related resources. Besides, learners can select learning resource from resource supermarket according to their learning requirements, and teachers can give suitable guidance during the selection process. The system pushed and self-selected learning resources will be put into the smart individual learning spaces for learners to conduct further filtering, screening and recombination of resources (Guo et al. 2014).

6.3.2 Case Analysis on Corporate University Learning Elements

1. Overview of W university

Founded in July 2007, W University is the talent cultivation base for a leading online game as well as a mobile internet platform developer and operator company in China. As the powerful supporter and important constitute part of the integrated strategy of W Company, W University concentrates on providing professional and systematic training service for corporate staffs, undertaking the responsibilities of inheriting corporate culture and promoting corporate reform. By abundant teaching methods, W University brings more experience and value for staffs, high quality customers, partners and other potential customers in a highly effective way, to deliver corporate culture and establish wider commercial ecological system.

W University is equipped with three functional colleges of Commercial College, Game College and Experience College as well as E-learning development group.

- Commercial College: serious training projects of leadership for middle and high level cadres, various management training and new staff professional training, to improve the occupational quality of management team and staffs in a long term and systematic way.

- Game College: concentrate on the cultivation of product creation and operation talents, and establish and perfect professional technological course and teachers system based on the corporate qualification system, and propel skill certification for key posts based on E-platform.
- Experience College: according to the requirement of the construction of various teams of the corporate, utilize experiential learning method to associate for the integration of new staffs and groups, to improve group work efficiency, and broadcast corporate cultural value system.
- E-learning development group: establish online learning and online authentication platform according to various training projects and courses, to make learners conduct autonomous learning.

2. Comments on smart learning elements in W university

W University has distinctive features on learning activity and learning contents:

Gamification learning is adopted on learning activity aspect. For example, on corporate culture promotion activity aspect, W University develops “Culture Regiment Campaign” and “corporate culture authentication test” activities. According to seven cultural value systems, and by means of answering questions and making breakthrough and dragon ball collection, it successfully implants corporate culture into all the staffs. The gamification learning method combines enjoyment with effectiveness, to achieve the purpose of popularizing corporate culture.

The micro lesson design methodology is adopted on learning content aspect. In coordination with the educational technology research of the corporate, it quickly organizes internal experiment and verification in the organization, and integrates internal and external resources, by researching micro lessons in the industry and generally analyzing real situation of the corporation, outputs the micro lesson design methodology in accordance with the corporate value system and departments, i.e., the “walking into micro lessons—disassembly of original lessons—design architecture—compiling script—courseware making” five steps from the concept and definition of micro lessons to the output of micro lessons.

6.4 Smart Learning in Corporate University Online Platform

In the knowledge economy times with the basis of globalization, informatization and network, the development and management of talents is one of the key elements for the corporate to win in the competition. The improvement of staff ability by corporate university online platform is the strategic selection for the corporate to maintain competitive advantage.

6.4.1 Framework of Corporate University Online Platform

The corporate university online platform is an organic, complicated and diversified functional entity composed by learners, instructors, learning environment and learning resource. Different from electric training or remote education, corporate learning system includes the mutual communication, as well as the establishment, management and sharing of knowledge between staffs, and it provides solution for the delivery, evaluation and management of the whole learning experience. The materialized presentation of corporate university online platform is establishing a network platform for learning and communication, to conduct effective training and evaluation for the staffs by this platform, to provide the corporate with a preferable environment for staffs to promote learning ability.

6.4.2 Functional Module of Corporation University Online Platform

At present, the corporate online learning system is realized mainly by three aspects of technology, content and service. The technology mainly refers to learning management system. The content mainly refers to training course material. As for the corporate, there are mainly new staff training, post skill training, management training, tool training and other general training. Service mainly refers to the overall plan and implementation to training system, course system and technology system.

The functions of corporate learning system are mainly embodied on the support of three groups: training managers, training teachers and corporate learners (Table 6.4).

Table 6.4 Corporate learning system modules and the functions

Corporate online learning system	Corporate learning system module	Functions and objectives
Technology	Learning management module	Learning plan, post learning, technology training, exam center, individual learning, questionnaire and voting
	Evaluation and learning tracking module	Learning statistical analysis, post learning tracking, training management statistic, occupational technology evaluation and resource statistic analysis
Content	Knowledge base management module	Platform course resource base and courseware mall resource base
Service	System management module	User management, post system management, role authority management, training teacher management and department and division institute management

6.4.3 Case Analysis on Corporate University Online Platform

The construction of Z University learning platform started in 2001, which was one of the first corporate to introduce remote training in our country. During the 14 years, it experienced the preliminary construction period of 2001–2007, the development period of 2008–2010 and the deepening stage of 2011 until today; with large scale investment and practice, continuous optimization and construction, the construction and operation effectiveness of remote training system has become an important business of the corporate and takes the leading position (Fig. 6.3).

1. Online learning management system

Z University creatively applies mature IT technology into the development of Group Level Learning Management System (GL-LMS), and it expands the narrow online learning to the whole process including online and face to face training and learning, which effectively supports the training and learning activities of the corporate, and promotes staff learning experience, active learning and self-management enthusiasm. The system mainly includes the following functions:

- (1) Core learning functions; including requirement management, activity management, strategy management and content management.
 - Requirement management, i.e., in combination of the change of various strategic objective of the corporate, and by organization, post, ability and technique system to identify and design learning requirement, to make staff learning objective matched with technology objective.
 - Activity management means divide course learning into formal and informal learning activities, and automatically record the design and development, authority distribution, learning implementation and tracking feedback of each learning activity according to the property of the learning activity to be managed.

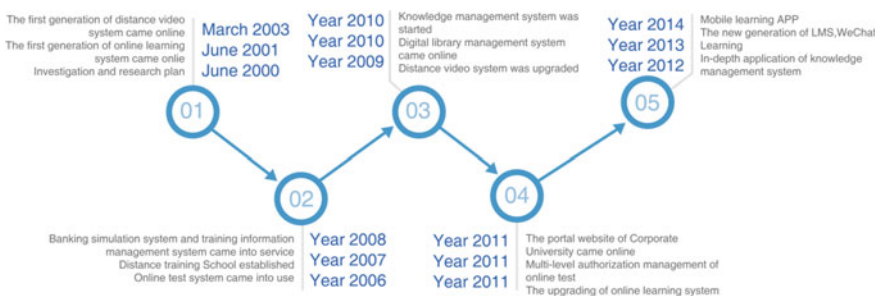


Fig. 6.3 Construction history of Z corporate university cloud learning platform

- Strategy management means formulating learning strategies in a flexible way, in support of combined learning.
 - Content management means to adopt methods of learning community and conduct content management and information communication to all the staffs, and utilize a set of tool and management mechanism to convert the contents of information or knowledge layer into learning contents.
- (2) Extended learning functions. Including the objective management, organizational management and performance management involved in learning, as well as staff occupational career plan.
- Objective management means to decompose the organizational objective into department, group and individual objectives, to automatically connect organizational objective with individual learning objective, to better support the realization and update of various levels of strategy objective.
 - Organizational management can fully meet the learning requirements of the whole corporate, and various levels of managers can deploy and adjust the learning framework of the group.
 - The performance management is butt jointed with performance management system, to analyze the performance data contents and formulate learning requirement and develop learning contents, and put feedback of learning performance into the performance system, as the data for performance evaluation.
 - Occupational development plan means to draw the clear occupational development path by a series of data analysis, to associate the development of the organization and individuals, to provide matched learning resources and learning activities for each possible post promotion in the future.
- (3) Report functions. Between core functions and extended functions, quantify management learning activities and provide visible statistic information service for managers and staffs.

2. Online exam system

It is developed by utilizing advanced cloud computing technology, with modularized, componentized and cross-platform architectural design, integrating functional modules such as information issuing, FAQ, personnel management, applying management, database management, exam paper management, exam management, questionnaire management, authority management and system management, fully meeting the complicated requirements of exam, competition, evaluation, investigation and analysis for corporations. In support of 5000 people online exam at the same time, and ensure the realization of large scale and high difficulty applications. Besides, the system can also conduct whole course dynamic supervision to the test process, to avoid cheating and form individual skill analysis report image.

3. Knowledge management system

Z corporate university takes the two dimensional viewpoint of knowledge-management and IT-governance, and starts from the top layer design, and concentrates on solving the long term knowledge management problems in the corporate; the developed knowledge management systems include public knowledge base, professional knowledge base, knowledge expert, knowledge questions and answers, knowledge engine, knowledge classification and knowledge map. The public knowledge base is mainly planned as a whole by the corporate university, and cooperated by various business lines; the construction of professional knowledge base is mainly dominated by business department, and guided and cooperated by corporate university; the knowledge management platform is unified planned by corporate university, and serves for various business lines.

4. Simulated production system

The so called simulated production systems means to establish a system independent from the real production environment of the corporate, and provide simulative practical operation service for new staffs, new institutions and new business. This system is equipped with most functions of the real production environment, but is totally isolated with the production environment physically, which is safe without operation risks.

5. Digital library

Digital library means the library utilizing digital technique to process and store various data. It stores various information resources of different carriers and different geographic locations with digital technique, which is convenient for the cross-regional object-oriented network query and broadcasting. It involves in the total process of information resource processing, storing, achieving, transfer and utilization. Popularly, digital library is a virtual library without walls, and it the extensible knowledge network system constructed and shared based on network environment, and it is also the extra large scale, distributed type, easy for using and space-time free knowledge center which can achieve cross-base seamless link and intelligent retrieval.

The construction of Z corporate university digital library can effectively promote the learning initiative, and is beneficial for the promotion of the comprehensive quality of staffs, and is the fundamental construction for the corporate to build up learning organization, and is the effective supplementation of training methods.

6. Remote video system

Remote video system means the system equipment used for individuals or groups of two or more places transfer the sound, image and document data by transmission line and multimedia equipment, to achieve immediate and interactive communication, to finish meeting or training objectives. This system is a typical image communication.

At the sending end of the communication, the image and sound signals are changed into digital signals, and they are reproduced into visible or audial information at the receiving end; compared with teleconference, it is more direct with larger information amount. The remote video system can make people listen to the voice as well as see the participants of the meeting, to make every participant feel as on the scene.

The Z corporate university remote video system is distributed all around various places, realizing the meeting training mode of combination of concentration and dispersion; the video is clear, and it is available for two-way communication and interaction, which improves the meeting training efficiency.

7. Mobile learning system

Mobile learning (M-Learning) means the remote learning by utilizing modern communication terminal such as mobile phone and PDA equipment (the laptops with wireless internet access function are generally not included) under the guiding of lifelong learning thought.

The mobile learning system of Z corporate university is mainly composed by Wechat terminal and App terminal. Mobile learning system is based on the cloud service solution, and the method of taking App client end as the emphasis and public Wechat as subsidiary is adopted, to realize the interactive popularity, to achieve the infinite sharing of learning resource, to gradually establish the “learner-centered and comprehensive” new learning platform.

As one of the corporate mobile learning gateways, the mobile learning App provides learning contents including training information, learning data, electric books and mobile courseware, and is the center for mobile learning of all the staffs. In the future, this system will open the level-to-level management authority, for various branch institutions (lines) to upload and download learning contents at the same time, and conduct butt joint to platforms such as knowledge management system, digital library and Yixuntong, to help staffs to realize the “one-stop” learning experience on the mobile end.

8. implementation effectiveness of online platform

In recent years, Z corporate university has obtained abundant implementation achievements in system learning field, which further releases the potential value of training and learning, and promotes the reputation and image of the corporate as well as the research influence of the university. The implementation achievement of the corporate learning system is mainly embodied as:

- (1) Provide convenient online learning service experience for staffs, and effectively relieve the conflict between work and learning.

The learning management system continuously optimizes and promotes the training and learning efficiency, and realizes the unity of training and learning activity, and lays foundation for the construction of group learning ecology. In latest 5 years, the organization has developed 499 standardized electronic course wares, in which 219

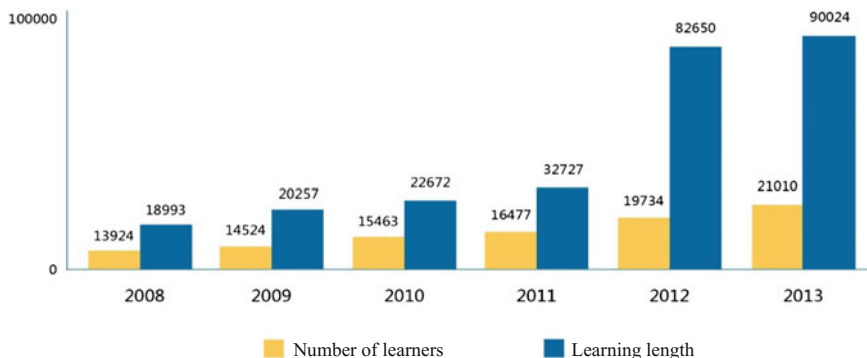


Fig. 6.4 Distribution of number of learners (persons) and learning length (hours) during 2008–2013

are self-researched and developed, and the proportion for self-research and development rises to 55% of 2013 from 30% of 2008; the online learning total length is 240,000 h. The substitution rate of electric learning to traditional learning rises to 30% of 2013 from 8% of 2008 (Fig. 6.4).

(2) Provide high-efficiency online exam and investigation evaluation service for all the staffs.

The online exam system has become the important platform for corporate post qualification exam and professional sequence exam. Up until now, there are 300 exam managers, with the capacity of 5000 people, and 2000 exams are organized each year, with total number of people who participate in exams of 200,000 (Fig. 6.5).

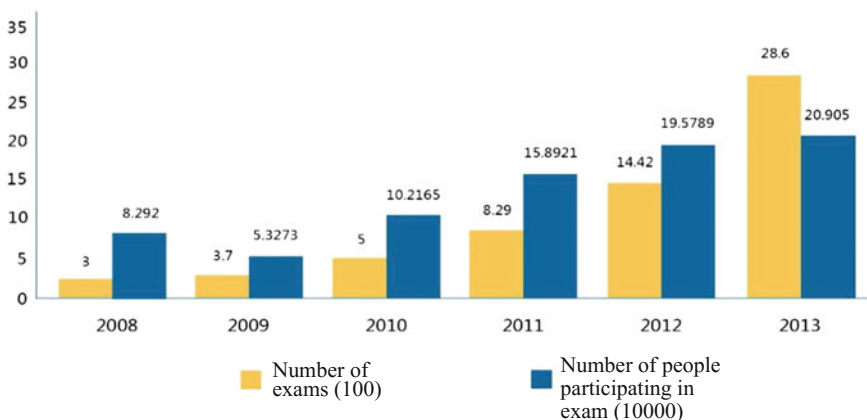


Fig. 6.5 Distribution of number of exams and number of people participating in exams during 2008–2013

- (3) Develop systematic and normalized knowledge management practice activities in the whole corporate.

With the construction of 4 years, the system has constructed 6 business channels, with nearly 10,000 effective knowledge, and page view of 1,00,000 person-times every year.

- (4) Provide daily simulation practical operation service relying on integrated background software.

Since the operation in 2008, relying on powerful background software and classrooms distributed in various operation points, it supports for the simulation operation for workers at the production line, to promote their operation skills and effectively reduce the error rate.

In a word, W and Z are successful examples of corporate universities, they are the prototype of future corporate universities. By analyzing the two cases, the author could tell that mature corporate universities should have perfect online learning management system, unique curriculum system and their own characteristics. Online learning management system could realize remote education as well as mobile learning, which would be helpful to popularize smart learning. Unique curriculum system should meet the learning and development requirements of the corporate, and it could be constructed based on corporate citizenship, contextual framework and core competencies (Chen 2009), which is often abbreviated as “3C”. Mature corporate universities will not blindly imitate other universities because they know themselves very well and have clear direction and objective, which means they must have their own characteristics. So the future development of corporate university could use the two successful cases as a reference and discard the dross and select the essence.

6.4.4 Promotion of Corporate Online Learning Platform to Smart Learning

1. Support blended learning

The learning management system provides learners with blended face to face teaching and network teaching learning resources, which supports for not only collective learning, but also individualized learning according to personal situation.

2. Interactive learning support

When encountering a problem during learning or working, the learner can browse the knowledge base of resource management system, to find out related contents, and he can also seek for help from colleagues on the forum. In a word, the information technology function can achieve the good interaction between learners and resource management system.

3. Record learning behavior track

The learning system can record the learning course of learners, including online length, receiving and sending e-mails, public comments and online note. It is beneficial for the corporate to understand the learning behavior of learners in time, and conduct proper analysis to the learning state of learners, and give timely help in combination of the features of the learners.

6.5 Directions of Future Development of Corporate Universities

The internet is a great milestone for human historical development, and human enters into the informationized society by internet, and there have been great changes on production, life and learning. Under this background, the future corporate will transfer the traditional learning activities to the internet to breakthrough the time and space limits, to meet the requirements of learners to build up intelligent ecological system by means of informatization. The construction orientation of future corporate universities will at least include the following two aspects:

6.5.1 *Platform Construction Based on Big Data Analysis*

Construct big data analysis based learning platform, and by acquiring, storing, managing and analyzing of learning big data, provide digital decision plan for corporate training and education work.

Collect the interactive data between learners and learning platform, including answer correct rate, time for answers, quantity and nature for help and the repetitive rate of incorrect answer, and this part of data can be on layers of course, learning unit or knowledge point. By data mining and analyzing, it constructs learner knowledge model, and selects suitable method and provide proper learning contents at the right time for learners by automatic or manual feedback.

Collect the data of learning time, course learning completion situation, online or offline exam result and learning behavior change situation in class or during face to face learning of learners on the learning platform, and explore the correlation between learning behavior and learning outcomes of learners, to finally construct learning behavior model of the learner.

Collect the learner related data in the learning platform and the offline learner basic information data, to construct learner individual learning file by data mining and machine learning algorithm, to analyze the learning features of learners, and conduct clustering and grouping for learners with the same learning features, to

provide individual learning environment for different types of learners, to promote effective learning. By the big data mining and learning analysis of education, it conducts reconstruction to the existing professional knowledge model of the corporate, to explore the correlation between course, learning unit and knowledge point learning content organizing method and learning outcomes.

6.5.2 Platform Plan Based on the Trends of Mobile Learning

The following functions shall be noticed when planning the platform based on mobile learning trend:

1. Intelligent pushing.

The digital learning resources in big data times will increase in an explosive way; facing with the great number of learning resources, it will be the main problem for the learners to select, or how to push suitable learning resources for learners. Based on the mining and analyzing of big data in the future, it is available to analyze the learning style, characteristic and current situation precisely, to push suitable learning resource for learners in an active way.

2. Effective learning.

The learning platform in the future shall be equipped with self-learning ability and the logistic interaction between knowledge, and can automatically increase the knowledge needed to solve the problem, and generate learning resources. This learning system can grow with learners, and the previous learning experience can be accumulated to answer to the question of the later learners. The solving of problems is not limited by time, space or environment, and can collect the knowledge and experience of multiple fields experts and support the mutual association between learners, to solve major problems.

3. Immediate interaction.

The design of future learning platform shall be equipped with interaction methods of dialog mode, interactive mode and athletic mode and so on, and can give positive response to the requirements of learners, and motivate the enthusiasm of learners. The 4G based application can ensure the immediate interaction between learners and teachers as well as between learners; it supports for individualized learning, and presents different learning resources after knowing the related characteristics of learners, and tracks learning record or process, and automatically collects and analyzes the mobile learning behavior features of learners, and establishes the individualized learning development model and gives individualized guidance based on the model.

References

- Allen, M. (2002). *The corporate university handbook* (p. 9). AMACOM Div American Mgmt Assn.
- Amy, L. A., & Jessica, L. (2012, March 19). Exploring the corporate university phenomenon: Development and implementation of a comprehensive survey. *Human Resource Development Quarterly*, 23(1), 103–128.
- Anderson, M., & Lichtenberger, B. (2007). The corporate university landscape in Germany. *Journal of Workplace Learning*, 19(2), 109–123.
- Blass, E. (2001). What's in a name? A comparative study of the traditional public university and the corporate university. *Human Resource Development International*, 4(2), 153–172. doi:10.1080/13678860121806
- Chen, L. (2009). Corporate university: Background, definition and pattern. *Journal of Ningbo University: Education Science*, 2009(2), 16–21.
- Chen, W., Ye, X., & Xu, Y. (2012). Future classroom: Smart learning environment. *Distance Education*, 5, 42–49.
- Dealry, R. (2000). Strategic directions in the management of the corporate university paradigm. *Journal of Workplace Learning*, 12(4). doi:10.1108/13665620010332903
- Denise, R. H. (2002, May 10). *Education in the workplace: An examination of corporate university models*. Retrieved January 27, 2009, from <http://www.newfoundations.com/OrgTheory/Hearn721.html>
- Feng, X., Wu, Y. H., & Zhu, Z. T. (2013). Design of smart learning experience. *China Educational Technology*, 12, 14–19.
- Guo, X. S., Zheng, X. D., & Yang, X. M. (2014). Conceptual framework and model design of smart learning. *Modern Educational Technology*, 8, 5–12.
- Ji, W. N. (2011). Corporate university on the platform of American higher education. *Renmin University of China Education Journal*, 29, 3.
- Jiang, Y. L. (2012). *Research on the development of enterprise university in China* (master). Jiangxi Normal University.
- Ke, Q. C. (2010). Enterprise digital learning: Concept, research framework and practice model. *Distance Education*, 1, 49–54.
- Levine C. I. (1996). Corporate university or corporate college—which is right for you? *Corporate University Review*, 4(2), 52.
- Levinson, M. (2007). *Knowledge management definition and solutions*. Retrieved March 7, 2007 from <http://www.cio.com/article/2439279/enterprise-software/knowledge-management-definition-and-solutions.html>
- Li, M. L., & Wu, S. Y. (2013). Research on issues of enterprise university: Exploration and analysis of the current situation and vision of the future. *Vocational & Technical Education Forum*, 33, 36–41.
- Luo, J. H. (2011). The development and inspiration of foreign corporate university. *Comparative Education Review*.
- Meister, J. C. (1998a). Extending the short shelf life of knowledge. *Training and Development*, 52(6), 52–53.
- Meister, J. C. (1998b). Ten steps to creating a corporate university. *Training and Development*, 52(11), 38–43.
- Paton, R., Peters, G., Storey, J., & Taylor, S. (2005). *Handbook of corporate university development*. USA: Gower Publishing Ltd.
- Prince, C., & Stewart, J. (2002). Corporate universities—An analytical framework. *Journal of Management Development*, 21(10). doi:10.1108/02621710210448057
- Ramli, A. H. (2008). *An overview of corporate universities*. Retrieved December 24, 2008 from <https://zh.scribd.com/doc/9407517/An-Overview-of-Corporate-Universities>

- Sham, C. (2007). *Corporate universities in China*. Retrieved February 13, 2013 from <http://www.studymode.com/essays/Corporate-University-In-China-1423133.html>
- Tian, Y. (2013). *Research on teaching management model of enterprise university* (master). College of Education of Tianjin University.
- Wu, Zh H, & Liu, X. (2013). Characteristic analysis of enterprise university and research on its mobile knowledge system. *Leadership Science*, 29, 40–42.
- Zeng, X., & Liu, X. (2006). Necessity of mechanism of enterprise university institute binding. *Chongqing University (Social Sciences) No. 3*.