Enhancing architecture curricula with organisation and management for the adaptation and change of operations in architect associations in Taiwan

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ABSTRACT: Architect associations in Taiwan are currently faced with several critical issues. Scholars and architects must address issues about change, which concerns two main areas, namely: the changing form of architect associations, and the delegating authorities and duties to related professions. However, according to the misinterpretation of *struggling for power and benefit* and *shirking responsibilities* by the public, there will not be any change in the short-term. Under current laws, architects are both *the owner of the organisation* and *the manager of the profession*, yet they lack managerial skills in the training they have received from the Academy of Architecture. This article discusses the design of organisational structures and tasks, operational patterns, work schedules and the association's strategies in the field of architecture. Over 70% of graduates from the technology-vocation education system become the architects and associates. However, students of architecture must be taught organisational knowledge and managerial skills in order to survive and develop competitive careers.

INTRODUCTION

An architectural association in Taiwan must be dominated by individuals or more than two professional licentiates have regulated for more than 30 years. Recently, as the size of constructions has increased, technology has become more complicated and the number of licentiates has increased rapidly; this is despite the market shrinking. The overspecialised division and the statutory form of the organisation means that it competes disadvantageously against other groups. Architects need to recognise risks if the organisational structures and management have not adjusted properly. Figure 1 shows this study's framework and procedures.

LITERATURE REVIEW

Performance of the International Architect

This article covers four countries to study the operations of architect association: Japan, Singapore (which are near Taiwan) and, as examples of the west, the USA and France.

- *Japan*: Japanese architects must acquire a degree in architecture and pass the national or local test. In order to practice professionally, there must be at least one registered-licentiate architect who is responsible for a specialty technique [1]. Its form may include individuals or corporations (proprietorship, quasi-partnership, partnership or stock/limited liability corporation). Proprietor relationships are regulated by civil laws and contracts [2].
- *Singapore*: the *Architects Act* stipulates that architects need to pass the test sponsored by the Board of Architects to obtain qualifications. There are two forms of execution: an architecture professional company with architecture

licentiates, or a multidisciplinary company with relative technicians. The *Architects Act* was amended in 1974 so that at least 2/3 of the directors of an architect association must be licentiates [3].
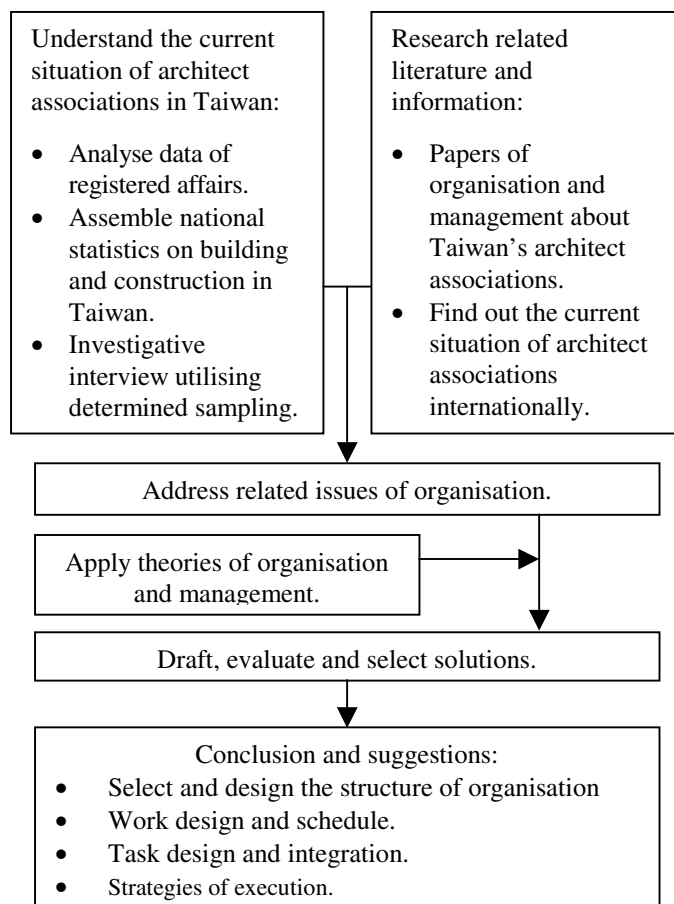

Figure 1: The framework and procedures of the study.

- *The USA*: All laws governing architects are regulated by the National Council of Architectural Registration Boards (NCABR), and administered by the Department of Consumer Affairs in each state. The form of its operation may be divided into proprietorship, partnership (general/limited) or corporation (professional/general business) [4].
- *France*: Influenced by the mainstream of liberalism, the principal form of architecture execution was originally individual licentiate. In 1966, work teams took shape and developed into diversified operational forms. In 1985, the *Architects Act* stated that an architect can operate in any form of organisation, but the form of corporation must be registered and printed in publication and be governed by a commercial court [5].

In summary, the executive form is diversified and international examples differentiate between the profession vs. management.

Literature of Organisation and Management about Taiwan's Architect Associations

The literature indicates that professions that have architecture as an educational background face various difficulties, including: codes of architecture that restrain creative design, supervisors, proprietors and builders who do not focus on quality, the design fee is too low to support the operation of the association, differences between other specialists regarding authority vs. duty have become blurred, the architect is often made the scapegoat, the form of association confuses individual and corporation taxes, the association cannot operate continuously, etc. Inasmuch as the external environment cannot change or fight against the trend, it is better to face these issues and change the patterns of operation so as to improve the business and innovate the organisation.

CHALLENGES

The annual *affair-equivalent* of practicing architects can be defined as the *yearly total floor area of building licenses divided by the number of professional architect licentiates*. Table 1 shows the changes in the affair-equivalent of architects, which has deteriorated over ten years. Yet the number of architect licentiates has rapidly increased, resulting in an over-development in the amount of work. Figure 2 shows the declining trend.

In 2001, the affairs per architect were almost less than half that from 20 years ago, yet triple the number of graduates have entered the field. Increased competition means cutting fees to get the contract, thereby sacrificing the quality of service [6]. Furthermore, competition between associations will intensify due to the globalised market, enlarged construction, division and integration, and the rapid development of technology.

The current primary form of operation is the architect as individual. Architects are both *the owner of the organisation* and *the manager of the profession*. Their management decisions are based on personal interests.

Staff may think that all the property of the association belongs to the architect. They do not identify themselves with the association. Therefore, inferior performance and high employee turnover rates mean that the organisation will not be able to accumulate experiences and develop new techniques.

Table 1: Progress of architecture training in Taiwan [7].

| Year	Total Floor-area of License	Number of Architects	Affair Equivalent
1983	25,781,000	1,323	19,487
1984	25,473,000	1,419	17,951
1985	26,195,000	1,477	17,735
1986	30,069,000	1,517	19,821
1987	34,275,000	1,560	21,971
1988	37,525,000	1,620	23,163
1989	46,187,000	1,684	27,427
1990	40,066,000	1,804	22,210
1991	53,671,495	1,906	28,159
1992	76,435,671	2,069	36,943
1993	72,490,148	2,217	32,697
1994	61,214,450	2,346	26,093
1995	45,686,642	2,410	18,957
1996	37,688,650	2,464	15,296
1997	45,779,247	2,589	17,682
1998	42,783,888	2,695	15,875
1999	37,154,211	2,796	13,288
2000	34,986,526	2,932	11,933
2001	21,674,000	2,950	7,347
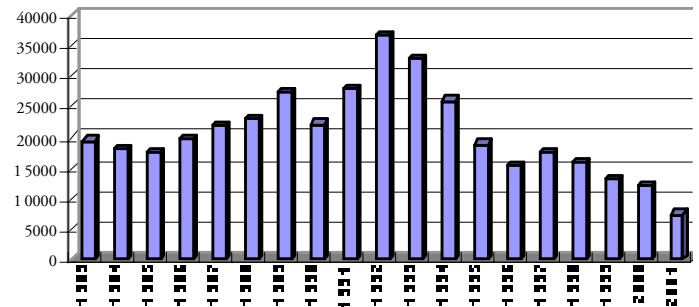
Figure 2: Trends in architecture operations (1983-2001).

SOLUTIONS

The following suggestions, derived from the perspectives of management and organisational theory, shed new light to address these challenges. The following must be taught:

- Architects have to select the appropriate organisational structure for their firms in order to improve performance and efficiency.
- Architects can utilise the Job Characteristics Model (JCM) to design tasks and apply the concept of *empowerment* to promote the staff's contribution to the organisation.
- Architects can apply multi-mode task designs and combine work schedule options to exercise human resource management.
- Adaptive and competitive strategies can enhance architects' competency through self-learning and self-training [8].

APPLICATION

Organisation Design

Most architecture associations utilise a simple structure, but this will not work in the long run. Associations should reconsider developing new structures to aid their firm's competitiveness. Medium or large sized associations may

utilise the matrix structure. The strength of the matrix structure lies in coordinating tasks for diverse functional specialists; major disadvantages of the matrix lie in the confusion it creates and its propensity to foster power struggles. Dispensing with a direct command structure increases ambiguity and conflict ensues.

The network structure is highly recommended in Taiwan. The advantage of this structure is that architects can concentrate their attention on their core competency: programming and design. However, control is looser than in traditional organisations, suppliers may be less trustworthy and, most seriously, innovative ideas of associations can be easily stolen. Despite these disadvantages, the network structure is more suitable and gives a more competitive match for architects given the continuing innovation in information technology.

Job Design

The Job Characteristics Model (JCM) describes the job with five core job dimensions: skill variety, task identity, task significance, autonomy and feedback [9]. Architects could design jobs in accordance with the conceptual framework of the model by utilising the following examples:

- The architect could combine various tasks (eg drafting, drawing, supervising) into a novel mould, thereby increasing the skill variety and task identity.
- The architect could assign tasks to be a significant and meaningful entirety by creating natural work units. Staff should regard constructions as their creations.
- As the client is the end user of the products, the architect could establish a wide network of clients and employees.
- The architect could expand vertical integration of the job by giving staff responsibility and power of control that originally belonged to the architect; this will generate greater job satisfaction and job empowerment.
- The architect could open feedback channels by increasing feedback; such performance feedback can be received directly and immediately, rather than from the architect on an occasional basis [10].

Empowerment Leader

The trend to empowerment has become increasingly popular around the world. There are two prime forces: first, in order to compete successfully in global, management must be able to make decisions faster than ever; empowerment improves the speed and quality of those decisions. Secondly, the process of flattening structures has left many managers with a large control span; as such, many managers have been forced to let go of some of their authority.

If the association's staff have the knowledge, technique, experience and autonomy, empowerment can encourage those staff to share the management responsibility of an architect. Then the architect could concentrate on the authorities and duties of an owner.

This would be a perfect state theoretically. However, an architect would not practice empowerment for those with the required characteristics of being architects too. Empowerment may also encourage ambitious staff to start their own enterprises, and the architect may eventually lose the proprietorship and business.

Task Design

The term *task design* relates to the integration of multiple tasks into a complete job unit. Its application to architecture associations can be described as follows:

- Job engrossment: staff in a large-sized association have, in the past, repeatedly done the same work (eg drawing or modelling). This has largely disappeared because of the progress of computer technologies and Computer-Aided Design (CAD).
- Job rotation: broadening staff views and experiences may inspire staff to shoulder responsibilities that belong more to higher-level managers. This could encourage managers to search for partnerships or train professional managers.
- Job enlargement can increase the variety of tasks, but may do little to instil challenges or meaningfulness to a worker's activities.
- Job enrichment refers to the vertical expansion of jobs; staff have the absolute responsibility to serve and deal with clients.
- Work teams: the association constantly applies integrated work teams in ad hoc case committees (programme, design, overseeing) of constructions. Applying self-managed work teams contributes to competitiveness by emphasising originality, speed and quality because of the advantages of high degrees of vertical integration and autonomic adaptability [11].

Work Schedule Options

Working in the architecture association is not like a traditional business: five days per week, eight hours per day. There are other types of work schedules and the architect should take account of labour market trends, work types and staff needs in order to arrange a proper work schedule, including:

- Compressed workweek: coordinating complex jobs will be difficult and frequent overtime pay can burden the association.
- Flexible work times: flexitime can reduce absenteeism, promote morale and increase productivity. However, it can disadvantage architecture associations due to inconsistency in work, ambiguity in shifts and an inability to effectively command employees after work.
- Job sharing: permitting two or more people to share a job is not applicable to architecture associations because jobs emphasise thinking, construction supervision, etc.
- Contingent workers: the job loads of architecture associations significantly display the phenomenon of *peak-valley* (competing case, document examined, asking for license are the peak; depression and empty periods form the valley). There is an urgent need to search for flexible patterns of human resources. The concept of contingent workers promotes associations to adopt a dual-strata worker system: a section with a small number hired for the long term, and hiring contingent workers according to demand and activity.
- Telecommuting: working at an association emphasises originality, thinking, quality; equating a character of non-regularity could fit this schedule. Nevertheless, issues such as social contact, effective and informed judgement, evaluation, and supervision influence developments in the future.

Organisational Strategy

The rapidly changing and increasingly competitive market has destroyed the stability of standard operative patterns from the past. Architects need to find systematic ways to evaluate the performance of the association and to enhance their competency; this concerns the organisational strategy. Several important strategies are discussed further below.

There are four main types of adaptive strategies: defender, prospector, analyser and reactor [12]. Selecting a suitable strategy may enhance the success of an association. For instance, as a *defender*, the association could focus on particular structures (such as campus, hospital, museum, etc). As a *prospector*, the association could encourage professional staff to target a specialised field in construction systems (such as computer animation, construction pricing, exceptional material application, etc), in order to focus on exploitable markets. As an *analyser*, the association could search for successful organisations similar in scale and human resources to be the *benchmark* in the same business; then, using newer knowledge, lower costs, better designs and service, compete in the same market synchronously. The architect association should never resort to being a *reactor*, which does nothing but misuse one of the above strategies.

Competitive strategies target the utilisation of organisational strengths and weaknesses of competitors, and the avoidance of becoming mired in fighting all opponents [13]. When the architect directs his/her association to have the lowest costs in the same trade, then this is following a *cost leadership* strategy. However, the product or service of the association must be comparable with competitors or a minimum of acceptance by proprietors. When the architect attempts to be unique and generally be appreciated, then this is adhering to a *differentiation* strategy. This may accentuate high quality, exceptional services, innovative design, technological skills or brand image; nevertheless, the diversity must be worthy of paying more than cost. The *focus* strategy is when the architect distinguishes a certain field from relative businesses, such as building type, final user type, work source or particular zone, and specially designed systemic and particular tactics. Essentially, any of these strategies all need to act continuously, such as resisting attacks from competitors or adapting to the setting's evolvement, in order to successfully obtain an advantageous position in the long term.

CONCLUSION

Whatever the type of architect organisation, the small-sized architect association should refer to the *network form* as a design framework and form an alliance with complementary professions, but should alert authorities in the face of any illegitimate activities. Medium to large-sized associations should focus on the matrix organisation design, which accentuates elasticised work teams and simplifies work practices.

The JCM helps to estimate suitable job patterns in an architect association, ie the direct architect ought to combine tasks, produce natural work units, establish relationships with clients, vertically enlarge jobs and open feedback channels.

The application of task design and job rotation could foster future managers or aid in the search partnerships for association; job enrichment may increase job depth so that staff have the absolute responsibility to serve and deal with clients. However, the architect dare not practice such task designs because the number of architect credentials is already too much in Taiwan. Empowerment may be a good approach to increase staff's organisation-centred conviction, and also to avoid encouraging powerful staff to start another enterprise.

With regard to the concept of schedule selection, architects can arrange human resources as follows: using contingent workers suits architect associations because of the phenomenon of peak-valley. Given this, there is an urgent need to search for flexible patterns of human resources. It is anticipated that more associations will adopt dual-strata worker system. Furthermore, a job at an association emphasises originality, thinking, quality and a flexible fit for the telecommuting schedule.

The perspectives of adaptive strategies and competitive strategies promote architect and staff self-learning and self-training to own the competency within a career setting. Further, those students who have graduated and entered the workforce can adapt and compete against severe market conditions. Fostering an architecture specialty is important, as is learning organisational and management skills.

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