Routine Production or Symbolic Analysis?
India and the Globalization of Architectural Services

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Developments in information technology have reduced the need for spatial proximity in the geography of architectural employment: computer-based drafting allows for better standardization and more efficient production of project information, whilst electronic communication links make the immediate transfer of this information possible across long distances. The ability to compress time and space paves the way to the relocation of architectural production facilities from higher-wage to lower-wage regions. Numerous examples already exist of firms that have adopted this strategy to reduce their overheads. Thus far, discussion of the viability and desirability of this emerging trend has revolved around a narrow definition of its costs and benefits. By looking at the Indian context, this paper will show that the analysis of task relocation in architecture cannot be limited to the microeconomics of the firms involved, the implementation of labour standards, or the macroeconomics of the region. Rather, it must include a qualitative assessment of its causes and consequences from an educational, industrial, and sub-cultural perspective. The text articulates this position by: (1) analyzing India's professional tradition and technological infrastructure; (2) stressing the cultural separation between the two, and the almost exclusive use of the latter in the delivery of non-professional drafting services; (3) discussing whether professional reticence in openly debating the phenomenon hampers a broader assessment and possible exploitation of the opportunities offered by this changing geography of work.

ARCHITECTURE: A LABOUR-INTENSIVE AND TRADITIONALLY LOCAL PRACTICE.

According to the Royal Australian Institute of Architects, architectural services in Australia employ approximately 30,000 people. Of these, about 10,000 are owners or principals, 15,000 are technical staff (either qualified professionals or unqualified fee-earners) and 5,000 fulfil support and administrative functions. On average, the salaries of technical and support staff (including superannuation and leave) represent 43% of office billings, for an industry total of about $650 millions a year. Rent or lease of office premises, telephone, electricity and maintenance take up another 12%. (Draganich, 1998) Such statistics are not at all unusual: from the beginning of architecture as a profession, wages have been the heaviest cost component of practice – a set of activities adding value mainly through the application of knowledge, planning and representational skills rather than use and assembly of materials.

From an economic geography point of view, architectural practice has always been a local employment industry: an industry, that is, where commodity production (in this case the production of advice and physical information) takes place in close enough proximity to the place where these commodities are consumed. This is due to the socially complex and thus operatively uncertain nature of the building process. Within it, architects are required to produce, submit, issue and transfer design information at an almost constant pace: decisions must be progressively formalised, discussed and agreed upon with a panoply of project participants coming from different directions, and eventually modified.

Such a distinctive lack of operative autonomy made it traditionally difficult for architectural firms to operate beyond the territorial limits of physical transactions (essentially the space allowing drawings to be exchanged in a reasonable time): information producers and information users had to inhabit, by-and-large, the same production domain. Limits could be expanded by establishing a satellite office or associating with a 'local' firm in charge of documentation and site administration.

This need for proximity produced a critical difference in the spatialization of production in architecture and the spatialization of production in manufacture. While the industrialising world could organise its processes by deciding which factors to play with – land, capital or labour – thus bringing workers to central cities or moving factories to distant cheaper locations, architectural practice could never follow these patterns. The difficulty to divide plant (the design office), process (the drawings) and product (the building project), meant that cost minimisation strategies had to be organizational rather than geographic. The best way to keep overheads under control was through low capital investment, capacity sub-contracting and workforce mobility, indeed the traditional balance wheel of professional practice. (Fisher, 1994; 1995)

TECHNOLOGY AND THE NEW SPATIALIZATION OF PRACTICE

Over the last fifteen years, the technological context has changed substantially. Telecommunications infrastructure and convergence technologies have become cheaper and more widely available (Clark, 1999). Fiber optic network connections have not only reached every industrial labour region in the world, but are rapidly expanding in developing countries, where government agencies are being set up to address, specifically, technological barriers to trade[1] (Industry Commission, 1998; Productivity Commission, 1999). International telephone costs and satellite utilization charges have fallen tenfold between 1970 and 1990, the year by which the price of fax machines had dropped to 25% of what it was in 1980. (World Bank, 1995)

The increases in global connectivity of telecommunication networks, in their capacity to carry data, and in the speed at which data are carried, are all beginning to benefit architectural practices. According to *AIArchitect*, the online publication of the American Institute of Architects, 83% of US architectural firms have been transferring drawings electronically in 1999, compared to just 35% in 1996 (Dalal, 2000b). At least in theory, the old need for physical contiguity between areas of drawing production and areas of drawing definition-and-use has been overcome. If so, the ability of graphic documents to travel quickly across space, either to provide instructions or to supervise the work carried out under such instructions, gives architectural practice the opportunity to catch up with the geographic dynamics of manufacturing. It can spatially disperse its activities according to relative production advantages. Rather than remaining fixed in place, architectural capital can now move to where labour is.

FROM LABOUR MOBILITY TO CAPITAL RELOCATION

The acquisition of geographic mobility could have a substantial effect over the microeconomics of design firms. After all, multifold differences exist in professional remuneration and real estate costs around the world. The relocation of information production activities to lower-wage and lower-rent locales would facilitate major reductions in office budgets as well as project budgets.

Yet, positions differ on advantages and feasibility of professional relocation.

Supporters maintain that the international relocation of design labour as made possible by information technology enables architectural offices to obtain substantial savings in workforce expenditure. These savings become particularly important when allowing for the foreign employment of experienced, skilled practitioners, at rates that would not be even enough to sustain entry positions in the local professional sector. In addition, since practicing in foreign locations has become commonplace for many firms, the use of the workforce employed at these offshore branches by the parent organization should be seen as a natural externality of the structure in place.

Detractors, on the other hand, consider the very information technology that makes drawing-transfer possible a deterrent to geographic relocation. The common argument is that good design professionals are difficult to find or keep, especially in distant locations. Geographic outsourcing must thus be limited to routine, low-skill activities such as technical drafting. In this case, labor advantages are minimized not only by the increases in productivity brought about by computer-aided design (e.g. standardization), but also by the cost of distance training, work monitoring, and infrastructure maintenance. There is evidence for both of these positions. Office productivity has, by-and-large, increased. The drafting-time standards used ten years ago no longer reflect real production times. Yet salaries still take up more than 50% of architectural office budgets. Within this context, electronic collaborations between different professional establishments have become frequent, even in the same city. Technology-derived capitalization (i.e., what sort of equipment one has to have and how often one has to replace it) has risen, but not just for the offshore office: drawing equipment must be replaced in traditional locally-based firms as well. In addition, the level of professional preparation of the architectural workforce is more comparable internationally today than it has ever been. Annual levels of employment turnover are high, at around 20% in both developed and developing regions; but the

internationalization of architectural education is producing more homogenous graduates from different parts of the planet who are prepared to practice wherever the work is. Besides, building activity does not spread evenly around the world. Surges in demand in one region often coincide with slumps in other regions. As a result, there are always good, professionally qualified firms seeking collaborations that extend beyond their local market.

This does not mean that geographically stretched offices or distant alliances are automatically viable and worth pursuing. Transactional activity is still better managed at close range rather than big distances, within the same structure of governance, and between people who know and understand one another well. When things do not go right with overseas collaborations, the specter of substantial rework always looms high. But there is nothing structural about these negative possibilities: they are the result of procedural flaws or mishaps rather than an automatic corollary of distance. In other words, geographic relocation may not be a problem in principle, it is the organization and management of the resulting structure that determines its feasibility, or lack thereof. The spread of geographic collaborations seems to support this position. Today, an increasing number of firms are attempting to lower design production costs by taking advantage of the supply of professional services in regions with lower wages and cost of living. The subdivision of design work generally takes two forms: either vertical integration between parent firm and satellite offices, or plain outsourcing of production responsibilities to a separate firm offering its services as a sub-contractor. Each arrangement has different characters and follows different modalities.

In the first case, the work is carried out within the same organization and does not suggest a clear separation of tasks. Design development and document production do not follow a geographic distinction and, due to the long-term nature of the link, the workforce employed shows similar characteristics and culture of work. Training is provided by and reflects the philosophy of the parent firm, and remains essentially within the domain of professional architectural practice.

In the second case, the relationship between firms is established on the market, and does not exclude similar concurrent collaborations for either one of the partners. The scope of the work tends to be more clearly defined than in the first case, and mostly limited to drafting services. This form of freelancing defines a territory populated by companies that specialize in image production rather than architectural practice, and that select *and organize* their workforce accordingly. The web sites of professional institutions around the world feature long advertising lists of offices working this way, classified as computer services and kept separate from traditional (i.e. full-service) architectural firms.

The difference between the two forms of trans-regional collaboration is not just organizational: each form implies different types of activities, and relies on varying qualifications and degrees of autonomy of the workforce involved. In the first case, the geographic link activates design expertise by outsourcing professional participation in the conceptual phase of the work: in the second case, it distributes simpler execution responsibilities that mostly require drafting (i.e. clerical/technical) skills.

In *The Work of Nations* (1991), Robert Reich identifies two service categories that can be of help to our discussion: routine production and symbolic-analysis. Routine production services entail repetitive tasks, such as data processing, and are not place-specific. They can thus be moved. Symbolic-analytic services include all the problem-solving, problem-identifying, and strategic-brokering activities. "Such services can be traded worldwide, (. . .) but they do not enter world commerce as standardized things. (. . .) Symbolic analysts solve, identify, and broker problems by manipulating symbols. They simplify reality into abstract images that can be rearranged, jiggled, experimented with, communicated to other specialists, and then, eventually, transformed back into reality. The manipulations are done with analytical tools, sharpened by experience. (. . .) Like routine producers, symbolic analysts rarely come into direct contact with the ultimate beneficiaries of their work." (Reich 1991:178)

Regardless of the strategy pursued, geographic collaborations are the result of firms' individual initiative rather than the unfolding of institutional policies. In 1998, the members of the World Trade Organization negotiated an agreement for global service trade (GATS) which includes professional services. GATS has been be followed by specific sub-sectoral negotiations, which started in 2000. So far, 61 countries have made commitments covering architectural services, and 43 covering Urban Planning and Landscape Architecture. (WTO, 1998; Government of Canada, 2001; WTO Services Database, 2002) Yet, in our review of the relocation phenomenon, only Scotland, the European Community, Malaysia, Canada, and Singapore appear to have considered or been considering the possibility of drafting an implementation program for regional labour alliances in the design professions. This particular instance of globalization is hence taking place both discretely and *discreetly*, as a series of isolated episodes that make it difficult to track it all down, grab the overall extent of the phenomenon, and analyze its spatial and economic geography. Instead of clear relocation regions, there are many individual lines (albeit all defined by the higher-lower wage relationship) connecting offices in Egypt and Arizona, Philippines and the US, Philippines and Singapore, California and Eastern Europe, India and Massachusetts, Poland and Australia, Malaysia and Australia, Mexico and Texas, Netherlands and Indonesia, and so forth. Yet institutional links may be at work indirectly. Empirical evidence suggests that, at least until very recently, most of these

relationships were based on historical and/or cultural ties. Whilst office collaborations were forged through principals' common university background or post-educational training experience, the choice of the university depended, by-and-large, on longstanding economic ties and cultural allegiances between the two countries. Still, the quasi ad-hoc nature of trans-regional design collaborations makes it difficult to structure such evidence in a theoretical fashion.

Are the examples encountered isolated instances of semi-professional globalization, or should they be considered the harbingers of a new, emerging structure of architectural production? And if the latter is true, what could the consequences of this situation be? Could the globalization of design workforce weaken and eventually replace regional professional traditions? Could it alter or displace the traditionally local structure of employment in architecture by making cheaper workforce available? Could it lead to a new kind of professional internationalism, with building design increasing its technical homogeneity around the world, or could it rather engender new forms of techno-economic colonialism, with richer countries determining the profile of the architectural workforce in poorer ones? More specifically: Are the work arrangements outlined earlier equivalent in this regard? Or should they (as well as their implications) be further analyzed?

TRANSACTION COSTS

While all these questions are concerned with viability and assessment of professional relocation, each of them is informed by a different perception of *cost*. When considered from the point of view of the firms potentially interested in relocating their services abroad, cost is generally regarded as a micro-economic parameter that connects 'productivity' to 'transactional activity'. According to the definition provided by Oliver Williamson, a transaction occurs when "goods or services are transferred across a technologically separable interface." (Williamson,1985:1) The theory of the firm developed by Williamson assumes that transactions carry costs that ultimately determine the organizational form of production. These costs result from the activities that firms must undertake in order to acquire knowledge, services or products that are external to their sphere of governance: price discovery and negotiation, physical exchange of documents, monitoring of performance, etc. The higher the degree of technical or physical correlation between functions, or the need of coordination between labor processes, the higher are the costs involved in recomposing separated functions. Two tasks are likely to split, i.e. result in two autonomous structures, insofar as the economies accruing from their separation (for example, better location, more efficient plant, lower wages, etc.) are not offset by the 'additional' cost of managing the re-integration of their scope. It is important to understand that the sphere of governance suggested by Williamson is not limited to bureaucratic guidelines, and includes a cultural dimension. Additional resources are spent not only when trying to communicate between different hierarchical office structures, but also when interpreting, developing and correcting unexpected or unfamiliar information travelling across different socio-technical milieux. This is exactly the case of trans-regional collaborations in architecture – a practice densely defined by uncertainty, interpersonal transactions, subjective decisions, and local technical traditions.

As a result, transaction costs in design can be minimized in two (not mutually exclusive) ways: by perfecting prescriptive procedures, or by creating a common cultural context and facilitating bridges. The first solution involves only the parties specifically involved in the collaboration; the second takes longer, concerns the entire 'host' region, implies a different scale of investment and has deeper consequences.

A parent (or sub-contracting) firm from a higher-wage region can decide to use and perfect specific links with a lower-wage locale: but it is the workforce reliability and preparation of the latter, its adequate technological infrastructure and professional alignment that make the collaboration feasible, enticing, and comparatively advantageous.

Acknowledging the dialectic nature of this relocation process helps us understand that cost-benefit analyses cannot be reduced to individual firms' savings. They must include an evaluation of the steps required to prepare the socio-technical grounds wherein these savings are made, as well as an assessment of the likely impact of the resulting structure over the local 'industry'. (This is especially important as a professional relocation policy could have positive economic effects for the companies using the geographic link, but negative effects for the local profession in terms of revenue generation and employment trends.)

PROFESSIONAL GEOGRAPHIES AND REGIONAL DEVELOPMENT

There are two ways of tackling this issue: the first is essentially quantitative, the second qualitative.

When considering only financial output and workforce of the firms currently involved, geographic relocation may not seem worth discussing in industrial or policy terms. The episodic nature of the service, its organization in small batches, and its tendency to be used as a device to economize on the lower end of the wage scale, concur to generate or mobilize only a limited amount of capital resources. Employment figures would also be limited, in light of the high value-adding capacity of professional labour. By Australian productivity measures – between

$98,000 and $132,000 per medium-large firm technical staff member per annum – a few thousand offshore employees can produce the entire gross value of Australia's architectural services. (Draganich, 1999)

Yet significant markets could be developed by predisposing local practices to global collaborations involving more than one country, or particular countries. World Architecture magazine's 2001 survey of architectural firms, for instance, show that billing differences between the largest 25 design firms by world regions vary enormously: North America ($ 4,010m) generates four times more value than Western Europe ($ 970m), two-and-half times more value than the Pacific Rim ($1,505m), and almost ten times more value than Australasia ($423m). The difference with the rest of the world is even more staggering. The ability of Central Asia ($143m) to secure design documentation services for one-tenth of the North American work would more than double its current output. (World Architecture, 2001)

Revenue generation, however, is connected not only to the amount of work carried out but also to its wage structure. Exploitation, in this case, does not seem to be a problem. There is ample evidence to suggest that the use of local resources by non-local structures generates income that is comparatively acceptable (and often competitive) for the society in which it gets consumed. This in order to convince qualified individuals to work for them on collaborations that are still perceived as temporary.

The type of workforce employed may have a larger impact over the industry's salaries. Routine producers and symbolic analysts are paid very differently: according to the Australian Association of Professional Engineers, Scientists, and Managers, design work wages are over three times higher than drafting wages (APESMA, 1998). The more qualified the outsourcing is, the higher its revenues.

The routine production/symbolic analysis issue is important also for another reason: the provision of architectural services does not end in the manufacture of the good (a drawing as opposed to a microchip, a piece of garment, or a unit of software). Rather, it affects future environmental practices by positing indirect technology transfers. Drawings not only respond to, but also spell out building strategies, procurement methods and technological paths. The information one works on or from, either as a designer or a drafter, becomes inevitably part of one's background. And given the high employment turnover rate that characterizes the profession, as well as the project-based structure of the market (where design teams are formed and undone each time), this background ends up filtering through the industry. Work developed in collaboration with a foreign, higher-wage partner can thus define an alternative form of technical education, which will reverberate at a local level. And while symbolic analysis allows for a critical examination of the work, routine production implies a much more passive acceptance of methods and solutions, less prone to re-elaboration. This difference could be critical to regions – such as South- and East Asia – already burdened by environmental pressures, which are expected to undergo further massive demographic and urbanization growth. While there is an urge to build professional capacity at all levels, there is also a need to be discerning about the technological choices that are built in to this capacity.

In summary, trans-regional collaborations between higher-wage and lower-wage locales should be organized in ways that benefited both. This could be done by minimizing transaction costs and yet strengthening local practices, by using and developing the host region's local professional skills without introducing inappropriate technologies, by positively complementing, or contributing to, the knowledge needed in planning the environment of that region.

The adoption of a multi-layered, regional development perspective on professional relocation clarifies its complexity and challenges. It also reveals the problem of reading and interpreting this situation systematically. In our review of the architectural and allied professional literature, we have found no attempts to tie the various geographic and social dimensions of this new division of labour into a cohesive whole. Part of the problem has to do with the essentially local, real, and contextual nature of a phenomenon which is normally abstracted as a large scale economic matter, and mainly defined through wage differentials, labour availability, trade barriers and technological paradigms. Yet the problem remains. How should we read and tackle relocation? Merely as a market-expanding opportunity determined by technological capability? As a strategy for professional sustenance in a situation of high competition and diminishing returns? As a means of industrial restructuring? Or as a combination of the three? And if this were the case, how should the analysis be organized?

INDIA AND THE RELOCATION FRAMEWORK

In response to these questions, we turn to a case study – India – as a staging context for the discussion. This is partly a rhetorical artifice: India embodies many of the elements introduced in the previous sections, and can thus be treated as an effective ideal-type for their concrete articulation.

With over one billion people and an annual growth rate of 1.8%, India is the world's second most populated country after China. Since independence from Great Britain, urban concentration has doubled, rising from 15% in 1947 (60 millions) to over 30% in 2001 (307 millions).[2] Some of the major cities – Bangalore, Hyderabad and Delhi – have surpassed this trend by growing almost three times in 20 years.[3] Despite the high annual rate of urban land conversion, crowding parameters are

very high. In 1993, Bangalore was the most spacious among major Indian cities, with 9.5 square meters of average floor space per person, while France and Germany figures were in the 30s, New Zealand in the 40s, Australia in the 50s.[4] (WDI, 2000)

India's economy (in terms of GNP) is currently ranked 4th in the world, with an active workforce growing at a steadily annual rate of 6%, but a modest overall productivity index. Wages are lower than those of most South-East Asia economies, other than the Philippines. The per capita portion of the gross national product is growing but it still very low. In 1999, it was $2,149, over ten times smaller than Australia's ($22,448), fourteen times smaller than the United States' ($30,600), and lower than its regional neighbours', except for Pakistan, Bangladesh, and Vietnam. (WDI, 2000) With them, India defines an area where the annual pay for skilled workers is lower than it is in China, Latin America and Eastern Europe. Yet, these average figures may be misleading, since India's sub regions present major economic differences. The state of Punjab, for example, produces over six times more wealth than the state of Bihar. (Sutcliffe, 2001)

From a structural point of view, services add strong value to India's economy. Between 1990 and 2000 their percentage of the GNP grew from 41 to 47 per cent, second only to the Philippines. Yet, according to Hong Kong's Political and Economic Risk Consultancy Ltd., India should be ranked first with regard to quality, cost and availability of manpower in Asia. (Goad, 1999) The quality of Indian skilled workforce is recognized by many sources, and it is in part the legacy of Pandit Nehru, whom in his 1958 science policy resolution stated: "It is an inherent obligation of a great country like India with its tradition of scholarship and original thinking, and its great cultural heritage, to participate fully in the march of science." (Mashelkar, 2001) Particularly significant is the percentage of Indian nationals granted work visas in the US. In 2000, Indian nationals comprised about 37% of the H-1B petitions subject to a cap, and 51% of those not subject to the cap. Computer-related occupations led with 53%, architecture, engineering and surveying services followed with 13%. (USINS, 2000)

The presence of rich human resources has been integrated with institutional measures to attract considerable foreign investment. Between 1990 and 1999, this grew from 162 to 2,169 million dollars – comparable to Indonesia but expanding rather than retreating, and second only to China.

Real estate costs are comparatively very high. Data from the office market in the 1997-99 period show that rents in Melbourne are much lower than any major Indian center, and that only Bangalore is cheaper than Sydney. Yet Bangalore has the highest house price to income ratio in India. Overall, Mumbay, Delhi and Chennai are amongst the most expensive real estate markets in the region. (Brooke International, 1998, Arthur Andersen, 2000)

Foreign investment and real estate prices are connected to India's wealth of technological infrastructure. A survey conducted by National Association of Software and Service Companies (NASSCOM) in January 2001 found that:

- more than 200 cities and towns in India have Internet connectivity.
- as of December 2000, there was a PC base of 5 million PCs. Out of these, there were more than 3.7 million machines that had Pentium I and above processors (i.e. machines which could be effectively used for Internet).
- more than 120 private ISPs would be fully operational by June 31, 2001 (out of the projected 500 licenses to be given by that date).
- at least 12 private international gateways for Internet were expected in the same period. Seven private international gateways were already operational by December 2000.
- over 81 percent of PCs sold during financial year 1999-2000 were driven by the need to access the Internet.
- more than 86 percent of top 100 corporate companies (which responded to the survey) endorse the Internet and e-commerce as an integral part of their corporate strategic framework.
- 91 percent of India's corporate web sites are located overseas.
- India's capital cities accounted for 79 percent of Internet connections across the country.[5]

The level of endowment may not yet be on par with that of advanced Western economies. But when compounded with workforce, market access and cost base, India's infra-structural potential ranks higher than that of Japan, Hong Kong, Kuala Lumpur and New Zealand.[6]

The situation is further strengthened by growth forecasts. The current 25,000 working ISDN connections are expected to increase sharply, in line with the doubling of computer and Internet penetration percentages between 2002 and 2005.[7] The expansion will reflect and consolidate geographic ties. The Indian IT industry exports to 102 countries around the world, with almost 62% going to USA. More than 185 of the Fortune 500 companies rely upon Indian software houses for their operations.

Two of India's strongest theoretical advantages in the global market for professional services are the widespread use of English as the language of professional training and communication, and the relative parity of its professional institutions and curricula with the norms and standards of internationally dominant organizations such as the RIBA. These cultural and

institutional assets are legacies of India's earlier colonial history and have therefore been in place for some time. Indeed it could be argued that the origins of the contemporary Indian architectural profession in that earlier 'globalizing' context of British empire-building efforts in India effectively institutionalized external, geographically distributed modes of professional production that ideally predispose the Indian profession to perform advantageously in the current climate of international collaboration and/or relocation. Certainly, the relative ease with which Indian trained graduates migrate to jobs and further professional studies overseas would suggest that these structural conditions have been maintained if not strengthened over the years since the formal devolution of imperial relations. The flux of Indian students to Anglo-American universities is high and constant, with increasing numbers now opting for Australasian universities as well.

However, whilst India's early professional history has undoubtedly had significant structural implications for the current professional scene in India, it is not a simple nor a uniform picture. The division of labor on the basis of subtle but discriminating social and cultural distinctions was another feature of earlier colonial administrative practices that has, indirectly, contributed to significant ideological and methodological schisms. To date, these still underlie the more readily discernible patterns of location and production on the contemporary Indian architectural scene. In this regard, the relevance and utility of formal professional institutions, not least the use of English in the negotiation and documentation of design contracts, are more limited and differential in the Indian case than one might assume. In order to make an effective assessment of the actual status and potential of the Indian architectural profession to exploit current opportunities for international relocation and collaboration, we need therefore to consider these institutional and cognitive legacies of the recent past more closely. In particular we need to examine the specific colonial origins and evolution of professional training in India's architectural schools, and the implications of that contested tradition for the production of skilled professional labour today.

The conventional institutional apparatus of the architectural profession, legal and educational, have been in place in India for close to a century. However it is only relatively recently that the profession has begun to secure effective recognition and status in either the public or the private sectors. Notably, this has coincided with the partial de-regulation and resulting globalisation of Indian economic practices since the mid 1980s. Directly and indirectly, these developments have tended to unsettle popular misconceptions of the actual role of the architectural profession on the Indian building scene. For most of India's half century of independent nation-hood, the role of architecture in the project of nation-building and development has been all but subsumed, in the popular imagination, by the seemingly more tangible and constructive role of the engineering profession as functionalist problem-solvers. Moreover, these perceptions were reinforced by the inertial hierarchy and management practices of the powerful governmental design and planning agencies that the British had established, and through which the contemporary architectural profession – as distinguished from the *shilpins* and *mistris* of traditional Indian architecture – had been introduced to India (Sharma 1983).

Both the organizational structure of the architectural profession in India, and the preponderance of engineering in the Indian building world, are legacies of British colonial policy and practice. Although the British were the effective rulers and administrators of India for close to two hundred years, it was not until the final decades of the regime that the colonial government had any sustained and significant demand for 'Architecture' as such. For most of the preceding century and a half, the government had relied on the engineers of the Public Works Department (PWD) to design and construct virtually all of its infrastructure and buildings. A distinction between the engineering and the architectural professions was only finally reflected in official policy at the turn of the 20th century when the environmental design and planning priorities of the colonial administration had effectively shifted from technical to political challenges. Amidst mounting nationalist agitation against colonial rule, the death of Queen Victoria, the Empress of India, in 1901 provided an opportune pretext for an official turn toward a conspicuously more monumental manner of colonial architecture. For the first time on a department-wide basis, RIBA qualified architects were engaged as salaried officers of the PWD to serve as the 'Consulting Architects to Government' in each of the provincial and presidency administrations. By contrast to the utilitarian pragmatism of the technocratic engineers and their standard plans, the new government architects sought to upgrade the built image of the regime through the design of a more sophisticated and self-conscious 'modern' Indian architecture. This was to be both worldly in its imperial grandeur, and archaeologically correct in its historicist references to local architectural character and details. (Scriver, 1994; 1997).

However, significant impediments remained. Without the regular patronage of the colonial administration in earlier years, there had been little to stimulate the independent development of the architectural profession in British India. Whilst the traditional design methods of the building crafts and guilds of the subcontinent had only been sustained sporadically through the patronage of certain princely states (Metcalf, 1989; Tillotson, 1989), there was virtually no pool of professional labour to draw on in India that was adequately equipped with the skills and working knowledge of 'modern' architectural practice. The new consulting architects to government perceived, therefore, that they had a double mandate. On the one hand they had to define and establish a role for professional architects in what would prove to be the final swan-song of British Indian empire-building. On the other had they had to pioneer the educational foundations for the future profession in India in order to

address their own acute need for suitably trained Indian recruits. The Architecture course at the Government School of Art in Bombay (the "J.J. School" today), first established in 1914 by George Wittet and his assistants in the office of the Consulting Architect to the Government of Bombay, was the first and for many years the only accredited course through which prospective Indian architects could gain entry to the profession. (Evenson, 1989)

With its effective monopoly on architectural education in the final years of the colonial era, and its original instrumental purpose to supply skilled subordinate staff to the government architects' offices, the Bombay course had far-reaching implications for the subsequent development of the profession. In the first place it promoted the latent Arts and Crafts values of its founders, idealizing the notion of the architect as something distinct from the techno-scientific engineer. But quite the opposite of an autonomous professional – skilled in the symbolic analysis and novel representation of design issues – the curriculum aimed to produce architectural craftsmen who would be the selfless artisanal avatars of the seamless synthesis of Indian and European building traditions favoured by colonial technocrats as the appropriate imperial style. Accordingly the Bombay course focussed predominantly on the meticulous measured drawing and documentation of India's architectural archaeology (Metcalf, 1989; Tillotson, 1989). This contributed to historical knowledge, but it was effectively an uncritical mode of data processing, the primary value of which was the development of practical architectural skills with which the school's graduates could 'serve' the architectural profession in colonial India, rather than lead it. Actual opportunities for architectural employment in government service remained quite limited until the end of the colonial era, but graduates of the Bombay School also found employment as the junior service corps of the first commercial firms established in India. In turn, it was the expatriate British principals of those firms, such as Claude Batley of the successful Bombay practice, Gregson, Batley and King, who were to succeed Wittet and his colleagues in the PWD, as the faculty and patrons of the Bombay/J.J. School. (Scriver, 1997; Lang, Desai and Desai, 1997)

At the time of Independence, the Bombay school and associated firms remained the only established stronghold of the architectural profession in India and the obvious source to recruit capable and duly qualified Indian successors to the retiring British staff of both government and commercial architectural agencies. The corporate service ethos that characterised the first generations of Bombay-trained Indian architects was thereby diffused throughout the fast ramifying PWD system of post-Independence India, seamlessly sustaining and propagating the characteristically utilitarian design forms and methods attributed to that powerful and influential institution. As with the most significant and technically challenging public works projects of the past – which the British administration had reserved for the 'Imperial Engineering Service' (a euphemism for British engineers trained in England) (Scriver, 1994) – major architectural commissions in the new India such as Chandigarh were entrusted to leading international consultants. But the more routine and largely repetitive design work of the PWDs, in domains such as public housing and minor public buildings, was entrusted to this new cohort of public service focussed architects. These were the counterparts to the first Indian-trained engineers of the former 'Provincial Engineering Service' of the colonial era that had been delegated the everyday routine engineering tasks and procedures of the local government PWDs. Moreover, little had changed in the organizational hierarchy of the PWD since the colonial era and these salaried architects of the PWD continued to work in a subordinate service capacity to the executive engineers who dominated the senior management of the departmental system.

In the 1950s and 1960s, the still fledgling architectural profession in India was infused with a new and very different spirit through the influential projects and ambitious Indian associates of Le Corbusier and Louis Kahn, and through the overseas training and work experience of others schooled in international modernist powerhouses such as Gropius's reconstituted Bauhaus course at Harvard. Though notionally concordant with the development prerogatives of the architects in the Indian public service, new schools of architecture – such as those established in New Delhi, Chandigarh, Madras, and Ahmedabad in this period – promoted the avant-garde tenets of the humanist vein of post-war European and American architectural thought. This posed a direct ideological challenge to the uncritical, corporate-service ethos of the old Bombay school and government establishment (Lang, Desai and Desai, 1997; Bhatt and Scriver, 1990). It also introduced several new and increasingly important locations to the professional geography and related regional development of contemporary Indian architecture.

By the 1970s the first generations of graduates from the new schools had established their own practices. In turn, they had begun to consolidate their avant garde status as the putative intellectual leaders of the profession by reproducing their values in succeeding batches of their own students, and student employees, many of whom went on to develop their own practices and the further concentration of architectural expertise in the same few cities. As the critical avant garde overseas began to scrutinise the functionalist orthodoxies of Modern Architecture, the elite schools and associated practices had embarked on a passionate but increasingly introverted re-appreciation of India's own rich and regionally varied pre-modern building traditions. In the 1980s, growing international recognition of both the romantic and critical inflections of this regionalist sensibility in the sophisticated projects of architects such as Balkrishna Doshi, Raj Rewal and Charles Correa further reinforced this ostensive resistance to the modernist

globalization of architectural form and methods (Bhatt and Scriver, 1990)

In the meantime, however, the pace of actual social and economic modernization in India was unrelenting. The country was urbanizing exponentially and the demand for design and building services was growing accordingly. New polytechnic colleges and academies of architectural technology were being established to fill the continuing demand in both public and private sector design agencies for skilled providers of basic architectural services. As a result the profession had effectively split into two sub-cultures. On the one hand were the independent architectural professionals, committed to both the cultural and the creative integrity of their work. On the other hand was the vocation of the government architect, committed to the ethical prerogatives of a developing country: to provide appropriate shelter and accommodation for the greatest numbers with the minimum of public resources. Both camps had their worthy role models.[8] But the failings of each were also baldly apparent. Whilst PWD architects could be accused of slavishly replicating substandard type-designed buildings, 'high-art' architects could just as easily be criticised for their detachment from social realities when designing costly and seemingly self-indulgent buildings for elite clients. (Sharma, 1983). As long as the ideological certainties of progressive and equitable development through 'modernisation' prevailed as the guiding ideals of economic and social policy, the profession remained divided. By the mid 1980s, however, the balance had begun to shift as the economic success of influential portions of India's growing middle-classes gave power and expression to new values and agendas, not least an increasing ambivalence in India as abroad with regard to the 'universal' assumptions and aesthetics of modernism.

The proliferation of a raft of new schools and academies of architecture across the country in the 1990s was indicative of several further factors of change in the Indian architecture and building scene. The general liberalization of the economy under the government of Rajiv Gandhi in the later 1980s had generated considerable new wealth by the end of that decade, and a corresponding growth in consumption and the consuming patterns of the newly moneyed middle and upper-middle classes of urban India. Capitalization in luxurious new homes, commercial buildings, and five-star hotels was one of the more conspicuous signs of growth. This served to raise awareness of and a resulting demand for architecture as a value-adding service/investment, if not a necessary means towards such ends. In a few short years fully computerized new firms rose to industry leadership as exclusive purveyors in India of the latest in fashionable architectural imagery worldwide.[9]

The reduction of trade barriers also had a specific impact on the construction industry. Not only could builders now afford to import an ever wider range of building materials and foreign manufactured components to satisfy the global spectrum of new consumer tastes, but previously inaccessible construction and materials processing tools and technologies as well. The importation of tools such as Italian diamond saw technology, for example, enabled a major revival of masonry-inspired designs employing affordable skin-deep veneers of the magnificent marbles and sandstones of India's imperial architectural past.[10] The rising aspirations of the new rich for new avenues of professional security and prestige into which their college age children might be directed also raised new demand for architectural training and qualifications. But with so few established schools of architecture – moreover, schools that were ideologically antagonistic to this new populist eclecticism of the building market – new schools were needed and soon established. It is particularly noteworthy that major builders and property developers directly sponsored several of the most successful of these new schools.[11]

Options and opportunities for architects in the public service have waned in recent years as the PWDs and municipal development authorities have resorted increasingly to new government policies of out-sourcing major projects to prestigious independent architectural consultants working in the private sector (Sharma 1983). However, the old schism persists between those attached to the ideal of the architect as an autonomous design professional on the one hand, and the corporate/client-service camps of this evolving architectural industry on the other. A new cohort of architectural graduates is being groomed in these new demand-driven and still largely unaccredited schools and training colleges. They are no longer entering public service, nor the patronage of the established elites. Rather they serve the construction and property development industries as the architectural image-makers for a new client base in the increasingly powerful, globally connected new business sectors of metropolitan India.

To summarize this brief overview of the development and current status of the Indian architectural profession, we have a picture of at least two parallel professions:

The first is a critically and formally sophisticated constellation of architectural practitioners, academics, and students closely associated with a handful of elite 'avant garde' schools of architecture of established and more recent origin. This group has a significant ideological commitment to the formal and theoretical autonomy of Indian architecture from the globalizing forces of the present world market of architectural forms and services; and its colonial and modernist pasts. At the same time, however, it has the most significant stake in protecting the more universal structuring institutions of professional privilege and authority in contemporary world architecture, namely the international recognition and mobility of its members on the basis of exclusive professional training in which fluency in English and the symbolic analysis of architecture are highly valued.

The second, or parallel, professional formation on the Indian architectural scene is a possibly much larger grouping of both certified practitioners and informal and/or uncertified (and therefore less easily accountable) providers of architectural services. The defining characteristic of this less exclusive, more heterogeneous group is its commercial or 'market' focus. Training is valued but the major currency in this regard is architectural data processing skills, not least facility with sophisticated CAD packages and other digital tools. This group has no common formal or ideological commitments, and similarly little regard for the formal institutional frameworks and protocols of the architectural profession, such as accreditation by the institute of architects. It can therefore be comparatively liberal and innovative in its response to the established norms of design and construction in the region, but is often the opposite in deference to the tastes of conservative clients. It serves an ostensibly large and distributed market with both local and international clients and collaborators, but frequently operates within relatively closed networks of clients and subcultural connections, such as caste groups, and NRI networks (non-resident Indians). It also operates in more direct collaboration with local building and property development industries often by-passing unnecessary symbolic representation and analysis of design and construction issues through informal direct communication and basic trust. English language skills are not necessarily useful and potentially even counterproductive in this mode of work.

India's participation in the market of distant design collaborations is based, in large part, on this second group. Browsing through ArchitectureAsia.com – the electronic information clearinghouse for the design professions in the region – brings up whole lists of Indian offices advertising their services on the net. Virtual public display is complemented by private approaches. In the last two years, many registered architects in the British-speaking professional world have been receiving electronic messages from India, celebrating the savings achievable by farming drawing production out to the company sending the message. The analysis of the offices involved shows that most of this work relies on the availability of technology and the existence of parallel, stronger service sectors. While few companies have a proper architectural background, the knowledge-base of many is image processing or mechanical engineering. The provision of architectural construction drawing services reflects an horizontal expansion of the technical skills available. Occasionally, collaborations are sought by Indian students enrolled in post-graduate degrees overseas, who act as salespersons for drafting shops located back home. Rates are organized by piecework (drawing size) or by turnover time (the closer the production deadline, the higher the rate). The emphasis is on data processing, reduction of labour costs, and acceleration of project schedules.

Overall, this analysis shows that India's position in this market is a contradictory one, defined by theoretical strengths, objective historical impediments, and actual weaknesses.

Together, rent differentials, technological infrastructure, the availability of qualified workforce, absence of language barriers, and the presence of a long established professional tradition with historic ties to the English-speaking world, define strong comparative advantages. But these advantages are offset by other factors: first and foremost the cultural opposition coming from the higher levels of India's professional establishment, operating within a sophisticated form of functional-regionalism. This does not sit well, culturally, with international work, and opposes economic trans-nationalism for socio-cultural reasons arising from the colonial past of the region and its efforts to transcend that history. This may have been made more acute by the recent rise of commercial architectural firms, which tend to import foreign populist imagery into the urban landscape of the country, and by the diminishing influence of the central and local government departments of Public Works, now subcontracting much of their architectural services to independent consultants.

Strength of the IT sector and reluctance of the architectural profession to participate have helped the concentration of trans-regional collaborations with firms at the lower end of the professional spectrum: firms that specialize in support information rather than design, data processing rather than symbolic analysis.

Performance-wise, the work does not yet stand out as a winner. Poor service from some providers has has had negative repercussions for the whole sector, earning India's on-line drafting firms a reputation as producers of cheap, sloppy services. On this limited evidence, relocation in India is perceived to be desirable or achievable only when quality is not an issue. Large firms from Singapore, for instance, have looked into the region but found it does not yet present sufficient guarantees to invest in more permanent professional bridges, preferring Malaysia and the Philippines instead. Australian firms have also found themselves embroiled in litigation over their collaboration with Indian partners who did not provide sufficient quality control to the projects. A recent European Community funded project – CaribCAD – arrived at the same conclusion in one of its case-studies. (CARIBCAD, 2000)

However, whilst expectations for this discrete form of architectural service have not necessarily been met, the attractions and potential of India for a more comprehensive mode of professional relocation remain strong.

These issues need to be considered with regard to current shifts and ruptures in the institutional frameworks that underpin the Indian architectural profession: a profession with only nominal authority to protect its market of services from non-professional competition, not least the challenge of unaccredited schools funded by the building industry.

A CRITICAL EVALUATION: FROM ROUTINE PRODUCTION TO SYMBOLIC ANALYSIS.

Our analysis of India demonstrates that the discussion of what is happening versus what may be happening can take place at different levels.

At the first level, the relocation of design work is seen as a function and result of natural entrepreneurship: firms seek distant collaborations not 'by specific design' but, more simply, by generic pursuit of technological opportunity. The collective outcome of this type of practice is a low-cost and low-revenue cottage industry, defined more by the means than the ends of the work. Due to its IT sector, India seems to be well positioned to operate in such respect. In this context, however, the delivery of non-routine, qualifying architectural design services that can command higher prices and induce demand, is difficult. The internal economies of the generating sector, IT, make the passage from electronic drafting (or modeling) to professional planning unlikely.

The second level entails professional participation. Office relocation to lower-wage areas could be used to expand market and size of the low-wage area profession. This would not only increase revenues but also anchor architectural workforce to its region, thus diminishing intellectual drain. In this context, symbolic analysis would likely be added to routine production responsibilities. But, at this level, service quality is paramount, since the development of a market implies demonstrable comparative advantage vis-à-vis all the other low wage-based competition. To this end, workforce must specialize professionally, and professional labour practices must be instituted. All of which require the profession's acceptance of the phenomenon.

Once this is obtained, distant collaborations enter the realm of institutional planning. The strategic facilitation of office relocation could create opportunities to rethink the structures of professional practice and training in the host region: by selectively introducing process or product innovation, by balancing the supply and demand of professional services across the territory, by stimulating their growth in particular sub-regions, and by funding centres of higher education. In this case, policies regarding geographic access and work selection would be necessary.

The attitude described would produce several advantages: it would define a context where the obtainment of work depended on clear or proven professional expertise: where foreign firms' savings would come from the minimization of professional transaction costs rather than the minimization of up-front labour costs.[12] The spatial concentration of similar offices in specific areas would also produce a situation where cooperation and competition were likely to go together, much in accordance with the classic idea of the industrial district. Where quality is an important parameter, not performing well creates the possibility that the next commission will be taken over by other local competitors. Last, the creation of zones of technical collaboration based on common environmental conditions could have an effect over the osmotic potential of the work carried out. Host region firms could be exposed to work that is relevant to their environment, while the selection of one foreign firm for a particular district based on the work performed could provide an indication of which things are deemed worthy of consideration by the host government.

In conclusion, the changing division of design labour elicits a variety of responses, from outright denial or refusal to conditional acceptance and active policy-making. The first is almost a natural reaction to it, but does not help our understanding of its causes, the environment in which it takes place, or the profession that will be affected by it. The other responses provide deeper levels of elaboration and should thus be considered carefully. But for this to be the case, our cultural approach to the problem must change, this time trying to separate 'symbols' from 'analysis'. Rather than looking down on those practices that have decided to use distant collaborations, we should broaden our perspective and acknowledge that, given the presence of certain conditions, these collaborations can yield positive results. Rather than considering architectural institutes as bureaucratic guardians of parochial protectionism, we should start looking at them as potential planning entities to set up proper environmental and technological relationships between different locales. Rather than isolating the profession within its own practices and history, we should reposition it in the context of its urban geography, and use it to ameliorate the quality of that geography.

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NOTES

[1] The global telecommunication market was expected to expand from a total of $460 billion in 1993 to as much as $1.1 trillion in 2000, largely due to the limited number of telephone lines available in developing countries. China alone was scheduled to add 35.5 million telephone lines between 1993 and 2000, while Vietnam is planning to install 300,000 lines annually, all using fiber-optic technologies (Parker 1998:557-9).

[2] In 2001, India had 300 cities with more than 100,000 people, 18 cities with 1 to 5 million residents, two with 5 to 10 millions, two with over 10 millions. (Urban India, 2002).

[3] Between 1971 and 1991, Bangalore grew from 1.7 to 4.1 million people, Hyderabad from 1.8 to 4.3, and Delhi from 3.7 to 8.4 (Urban India, 2002).

[4] Between 1983 and 2001, Bangalore converted an average of 1,311 hectares of agricultural land per year. (UNESCAP, 2001).

[5] http://www.nasscom.org/

[6] NASSCOM (http://www.nasscom.org/it_industry/ites_indian_scenario.asp)

[7] 5.88 PCs per 1000 people by March 2002, with a projected 12.72 PCs per 1000 people by 2005. 2002 Internet penetration among businesses owning computers is estimated at 50%, with a projected reach of 80% in 2005; household penetration is currently 85%, with a projected increase to 95% in 2005. (http://www.dotindia.com/)

[8] On the Delhi scene, for example, Achyut Kanvinde and the late Joseph Stein have remained respected paragons of the humanist face of the universal modernist idioms that they brought from the USA to India in the 1950's. On the other side, their close friend and colleague, Habib Rahman, upheld similar professional ideas and integrity over decades of service in the architectural wing of the Central Public Works Department

[9] A key example is the firm of Hafeez Contractor. Established in Bombay as recently as 1983, it was the 2nd top earner of all Indian firms in 2000, with 300 employees including 30 fee-earning architects (World Architecture 2001).

[10] Among the more conspicuous manifestations of this new trend was what one architectural writer has appositely described as the 'Punjabi Baroque' of South Delhi, and 'Marwari Mannerism' of Calcutta's Salt Lake suburban sprawl (Bhatia, 1994).

[11] For example, the Rizvi College of Architecture in Mumbai, and the T.V.B. Habitat School in Delhi.

[12] The stability of the work arrangements would have positive consequences on the salary premium that foreign firms tend to pay to attract qualified local professional workforce. The work would, in a sense, be guaranteed by being part of a government policy with a strong geographical base.