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"THE WORLD IS FLAT"

Sustainable Internationalization
as the Answer to the Challenges
of a Global Service Economy

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3

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1 Introduction

In his book *"The World is Flat"*, *New York Times* journalist Thomas L. Friedman presents an informative analysis of the changes in the world economic order, and outlines the challenges for the early industrialised Western countries that arise from these changes. In 2004 he visited the "Indian Silicon Valley" in Bangalore and while there realised that globalisation has entered a new phase since the turn of the century. It is no longer just about the production of trainers and T-shirts, - intellectual services are now being provided globally. The perception in the book, which gave it its title, is that the world is flat, that the globe has been levelled out by the possibility of sending digital data from any one part of the planet to any other. For this reason more and more people in more and more fields of activity are being drawn into the maelstrom of a global job market [Friedman 2005].

Friedman is firmly convinced that global competition in a "flat world" is leading to job cutbacks, low-wage dumping and savings in the safety net of social benefits. The only people who can escape this rivalry are those who belong to the "Untouchables", the inviolable workforce. Obviously this is not referring to those people without a caste in the Indian social structure, but to those employees who are irreplaceable to their company. From this Friedman derives the maxim of lifelong learning, the concept that through continuous further education and further vocational training it may be possible to get closer to the secure situation of an "Untouchable". Friedman is very well aware that this may be too much for individuals to tackle alone, so he reminds society as a whole of its duty and demands more flexibility, better training and the capturing of highly specialist niche markets [ibid].

Yet Friedman does not seem to have complete faith in his proposals. The subtext of his book is that if the world is flat and the playing field levelled out, so that everyone is competing on one level, the advantages of the "first world", that made favourable working and living conditions possible in the past, are in danger of disappearing. Consequently many people must be afraid that they will be surplus to requirements.

Even the national IT summit held on 18 December 2006 in Berlin painted a sceptical picture. Its aim was to show ways in which Germany as an IT location could advance from mid-table to the top. However, while there were some very detailed proposals on technical issues, there was a pessimistic feel to the remarks on the challenges of internationalisation. For example, in the documents of the high-ranking working group 1 it says:

"Globalisation and the increasing competitive pressure on the international ICT markets are putting pressure on all areas of the ICT industry to act. Large sections of hardware production, with the exception of microelectronics, have already been moved abroad. At 7% the share of German companies in the software global market is low. The IT service industry is increasingly dominated by the USA and growth countries such as China

and India. In other regions the growth dynamic is higher by a factor of 2-3 and market capitalisation is also much stronger". (WG1)

These opinions are also reflected in our scientific findings. On account of the challenges of a new phase of globalisation, a multi-layered mixed position has developed in German society out of scepticism, insecurity and "whistling in the dark", which can be felt even in companies in the software and IT sectors. Unlike most other sectors of the service economy they have a great deal of experience with the challenges of a global service economy. Great efforts were made here to find suitable answers and many companies' efforts have been very successful. Nevertheless no basic change of mood can be detected here either.

According to the findings of our research, the overall situation in the German IT industry is characterised by a complex juxtaposition of positive approaches, setbacks and scepticism. This does not apply just to companies which have come under pressure through internationalisation and where staff cutbacks, which are often linked to jobs going abroad, promote an atmosphere of insecurity. It also applies to companies in which internationalisation is a success story in which, even though they have so far escaped the atmosphere of doom and gloom, we still noted a latent insecurity. This is not in any way a result of particular "petulance". The atmosphere is rather a genuine expression of the level of development of companies and society in dealing with the new challenges of a global service economy, because despite all valid attempts, so far there have not been any convincing forward-looking plans.

On the basis of our scientific findings we assume that the issue is not the correction of detail, but rather it is a matter of the basic issues concerned in tackling the new phase of internationalisation. Our hypothesis is that, with a few exceptions, the protagonists in the countries that were industrialised early on are following an outdated model, that is no longer appropriate in view of the changes in the world economy. This is the model of *offshoring*, which aims at the competitive utilisation of developmental differences in a hierarchical world (for more on this discussion cf. inter alia Boes, Schwemmler 2004, 2005; Boes et al. 2006a, 2006b; Aspray et al. 2006; Mosco 2006; UNCTAD 2004; WTO 2006; Vickery et al. 2006; Amberg, Wiener 2006; Mertens 2004; Schaaf 2004; Allweyer et al. 2004; Blinder 2006; Rohde 2003; Schaaf, Weber 2005). In future, common learning loops will be systematically undermined, so that good beginnings will have no widespread impact and promising initiatives will peter out.

For this reason we suggest instead that the development of action strategies in dealing with the challenges of a global service economy should be based on the general principle of *sustainable internationalisation*. This model focuses on how we can make a contribution to a globally networked "flat" world that is characterised by mutual dependence.

The argument is developed in the following stages. In the first stage it is worth explaining the theory in accordance with which a new world production model for the service economy will emerge. In the next stage there is a more detailed analysis of the level of development in the pioneering companies of the IT industry with regard to how they are dealing with this new challenge. In the next chapter, in order to be able to better understand the situation of IT companies in Germany, there will be a change of perspective and the situation in India and the key success factors of the Indian IT companies will be analysed. To conclude, this theory that the model of offshoring is not suitable for a conceptual readjustment will be justified, and the suggestion that sustainable internationalisation is to be seen as the model of a strategy that promises success will be explained.

2 New global production model for the service economy as a key challenge

In his analysis Thomas Friedman, as mentioned above, names a series of factors that have led to a "flat world". Of particular importance is the dissemination of new information and communication technologies, which were pushed forward rapidly on the tide of the new economy hype and which create the key prerequisite for a fundamental change in the global economy (cf. Schiller 2001). If we look more closely however, it is about much more than spreading a number of new technologies. The dissemination of new information and communication technologies, and in particular the rise of the Internet, is leading to a qualitative change and is currently leading to a leap in productive forces in the global society. This forms the basis for a new phase in internationalisation that is characterised mainly by the globalisation of the service sectors (Boes et al. 2006a).

The crucial point is that a new global "action space" is arising based on the Internet, in which players located in completely different places can not only communicate, but exchange and process digitalised information in real time (Boes, 2004; Boes 2005a; Baukrowitz et al. 2001; Baukrowitz, Boes 1996). On the basis of this information system they can now interact regardless of their respective actual "place". The people stay put of course, but the information systems are becoming an independent social "space", which places the different "places" of the users into a new geographical spatial relationship with each other (Boes Kämpf 2007).

Therefore a basis is forming for social relationships that can develop over great distances. In this space, geographical distances can be bridged and take on a new quality with no time-related losses in trading and interaction for those concerned. If the work object is digitizable, in a certain sense the global information networks then become a new autonomous production "space". This creates a new situation for broad areas of the service sector, or more precisely, for those activities that are mainly concerned with digitizable information. Subsequent to the considerations on the informatisation of work we reveal these activities in the following "Information work" (Boes 2005b, Boes 1996; also cf. Huws 2004).

Examples of such forms of internationalised information work are increasing all the time. Whether it is the processing of a digitalised travel expenses claim in a shared service centre, the analysis of an X-ray taken in a far flung place, the remote maintenance of IT systems or the development of software products (Boes 2004, 2005a; Aspray et al. 2006; Sahay et al. 2003; Flecker, Huws 2003; Meyer 2006; Allweyer et al. 2004; Campenhausen 2005; Kleinhans 2006; Rose, Treier 2005) – the object of the work can always be processed *in* the globally accessible information system; in a way the work takes place “in” the information space itself.¹ This is producing conditions whereby cooperation in the work process over spatial distances can develop without time-related postponements. Overstating the case somewhat, the same work object in the form of digitalised information can be accessed by the workforce in different places simultaneously. This development is creating the basis for a new “place-space structure” for production, both in classic industry and in certain areas of the services.

On this basis globally active companies can trade across the different locations as if they were one place. The push towards internationalisation, which has been apparent in almost all sectors since the second half of the 1990s, is essentially based on the new kinds of potential for integration and control in global information systems (cf. Castells 1996; Schmiede 2006; Reichwald et al. 2000). On the other hand cooperative working is becoming possible across great distances thus allowing certain services to be produced globally. In the final analysis the material basis for a new global production model in the service economy is emerging.

The IT industry is at the centre of this development (Boes et al 2006A). It is almost predestined for implementing this kind of global production model, since much of what IT specialists do can be presented in the form of digitizable information. At the same time the industry, with its expertise, is creating the basis for remodelling companies and is thus making a new phase in the globalisation of the economy a real possibility. And in order to acquire this expertise, and in particular to show its credibility, it is making itself the pilot project to a certain extent – it is demonstrating new forms of distributed work, in order to be able to sell it to customers. That makes it the pioneering sector during the implementation of a new global production model.

The companies in the software and IT services sectors have essentially gone through three learning phases in the development of this new production model:

- 1) In the first phase the IT companies followed the globalisation of their customers. In order to be able to address this worldwide, international marketing structures and, where required, production sites were developed.

¹ There are numerous examples of this development in Schwemmler, Zanker 2000.

- 2) In the second phase the network was differentiated at internationally distributed locations for the purposes of strategically shaping production capacities.
 - Until the second half of the 1990s, the development and production locations were established in high wage countries.
 - Since the end of the 1990s points-of-production have been developed in what are known as offshore countries (India, China) and nearshore countries (various central-eastern European countries).
- 3) For some years now we have seen a new development phase emerging in which companies have been setting about forming a globally integrated network out of the network of production locations, from which software and IT services can be generated in an internationally distributed system.

The IT companies are currently communicating the expertise acquired in these learning phases to other service sectors, and are also promoting a process for developing a new production model. The focal points of interest are the sectors of research and development in the automotive industry, the electronics industry or medical technology (cf. Doz et al. 2006; AT Kearney 2006; Kleinhans 2006; KPMG, RWTH Aachen 2006; Rose, Treier 2005). However certain administrative activities from the sectors of financial accounting, personnel etc. are also involved – key words are business process outsourcing and shared service centres (Allweyer et al. 2004; Campenhausen 2005; Flecker, Huws 2003).

All in all we must assume that broad areas of the service sector are going through a time of upheaval. A new global production model for services is emerging and this involves great challenges for the early industrialised countries. As the enabler and pioneer of this development, the IT industry is extremely important and could be a strategic learning platform for society as a whole to use to find ways and concepts for how to meet these challenges in the service economy.

3 Analysis of the level of development in the pioneering companies in the IT industry

What is the view of the IT companies with regard to these challenges? It is useful to look at the different viewpoints according to business segments, so the areas of standard software development and IT services are examined separately below.

The internationalisation dynamic takes a very different course in the two areas. While for the IT services business segment the global delivery model is considered the strategic guiding concept, our findings show that internationally distributed software development poses particular challenges for the players concerned and the question of how best to overcome them has not yet been fully resolved. The forms of distributed development actually being practised fluctuate between the models of the "extended workbench" and the collaborative development network.

The processes of internationalisation have strongly affected the mood both in the software and the IT service companies. Our empirical analyses show that the commitment and motivation of employees is an important indicator of the level of development of internationalisation in IT companies, because IT professionals are key players in internationalisation and play an essential part in the process.

3.1 Two internationalisation development scenarios – software development and IT services

The standard software companies started the internationalisation of their business activities early on. In the 1980s the proportion of foreign sales in the **standard software development** area was already comparatively high. While the distribution structures were internationalised at a high level very early on, production in this phase was still strongly concentrated locally. There were only a few isolated development centres outside the home location.

Since the 1990s the majority of software companies have initiated a process of planned differentiation of production capacities. At first this was only to do with locations in high wage countries, primarily in the most important regional market, the US. To be represented in the US did not just mean companies marketing their own products there – for the companies it was also important to be geographically close to important, innovative customers and to absorb their product requirements into their own development. In addition companies hoped to benefit from the high level of development dynamic in the US by having a development location there. Opening up new markets and the proximity to innovative centres were consequently the driving factors for the early internationalisation in this sector.

A qualitative turnabout in the internationalisation of development work has been taking place since the end of the 1990s. A new model in international development cooperation emerged with nearshoring and offshoring. This planned firstly to separate production from innovation and in this way to integrate cheap capacity into the development process. In the case of differentiating production capacity, as well as the motives of opening up markets and innovation, there was also the motive of cost reduction. Since then development locations in offshore and nearshore regions have been established and developed step-by-step.

With these new development centres, many companies initially established forms of division of work following the pattern of the “extended workbench”, in order to provide simple development work that can easily be shifted in low wage countries flexibly and cheaply. This has recently started to change in some companies. On the whole though the standard software manufacturers are still in the process of looking for suitable concepts of cooperation between the individual production locations. In the process the concepts put into practice fluctuate between the typical ideal models of the “extended workbench” and the “collaborative development network”. While the first con-

cept arranges the production capacities in a star shape around a centre, the second establishes a hetararchic network of development locations, which are arranged as nodes in an integrated complete system.

Internationalization in the **IT services business segment** developed with a different focus. Due to the special features of the services provided here, internationalisation began later than in the software development segment, and the companies' foreign sales have so far been lower than those of the standard software manufacturers. To understand the development of internationalisation in this area, we need to bear in mind the heterogeneous structures of the IT services business segment. Global IT companies such as IBM or HP as hardware manufacturers developed international structures very early on, which they were able to use to provide services internationally. For this reason they have a widely scattered network of distribution and production locations in the biggest markets in the world. However until the mid-90s this was organised in the form of national companies acting relatively independently, which were therefore less integrated. In comparison, in the German market there has been a large number of IT service providers with a largely national profile up to now (Boes et al. 2006b).

Since the mid-90s increased internationalisation in two different forms has been noted in this market. On the one hand the global players developed into internationally integrated organisations – this goes hand in hand with a loss of autonomy for the national companies. On the other hand the national IT companies in Europe became players on the European market. Foreign sales rose greatly in these companies and the number of foreign locations increased.

Towards the end of the 1990s the US corporate groups began to specifically develop production capacity in India and other offshore and nearshore regions, thus initiating a new phase. The European corporate groups followed this development after a short delay. Both built up national companies in the offshore and nearshore regions all over the world and increasingly sourced in these countries. Transferable tasks were identified in the projects and outsourced as work packages to the locations in India or Eastern Europe. Initially cooperation between the locations in the West and those in the low wage regions also took place in accordance with the "extended workbench" principle. In this period offshoring became the magic word for a new development stage.

However the most advanced IT companies are not sticking with this concept. On the contrary, development is now resulting in the emergence of a new guiding concept for the global provision of IT services that is described by many companies as a "Global Delivery Model". Even if it is still being communicated by many corporate groups as specific offshoring, it is actually a production model that goes beyond the concept of offshoring. US and European IT companies are adopting this model from Indian service companies and are currently trying to perfect it step by step.

3.2 Between “extended workbench” and “collaborative development network” – search processes and challenges with internationally distributed development work

While the Global Delivery Model can be considered as the strategic guiding concept for the IT services sector, the standard software companies are currently still in the process of searching for appropriate and promising models for internationally distributed software development. For this reason it is essential to analyse below in more detail the challenges and learning processes of the software companies, as far as cooperation with their nearshore and offshore locations is concerned.

A key point within these search processes for successful internationalisation strategies is the issue of how to position the newly emergent locations in relation to the company's other development locations. In theory the ideal would be, as described above, to differentiate between the two “poles” of the “extended workbench” and the “collaborative development network”, to which the actual practised forms of the distributed development are geared to a certain extent. In practice cooperation with the development locations often fluctuates between these two “poles”. Thus companies can pursue *both* concepts at one or at several locations. Furthermore it can often be observed that the concepts, in accordance with which the respective development locations are integrated into the companies, are not stable, but are subject to change. Each of these models has its own advantages and disadvantages or raises special problems.

For the model of the “extended workbench” the primary aim is to reduce development costs by incorporating locations with low wage costs. In addition some of these countries (India for example) offer Western companies the opportunity to recruit a large number of IT professionals within a very short time, thus evading any shortage of skilled workers in their own country. Typical of the “extended workbench” is a clear hierarchical relationship between the locations, linked with a high level of certainty of the orders being awarded nearshore and offshore, and frequent checking of the quality of the work provided. The most demanding and innovative parts of the work are kept at the home location, while activities that can be well planned and easily relocated are given to the offshore and nearshore regions.

The “extended workbench” model requires a great deal of time and effort with regard to checking, and involves a certain inflexibility, as it is necessary to provide clear advance specifications for the jobs. Furthermore it exhibits different aspects that may lead to social upheaval at the home location. The changes in the scope of duty and worry about job losses often brings uncertainty and dissatisfaction to the employees concerned. But dissatisfaction may also become apparent on the “other side”, that is with the developers at the low wage location. The high level of certainty and often low complexity of the tasks can give rise to problems of motivation. This can become particularly noticeable if better salary or career development opportunities in another company are presented to promotion-oriented employees. For example, in the loca-

tion of India there is a market that distinctly favours employees, and so companies which work according to the "extended workbench" model are faced with high rates of employee turnover. In addition, within the scope of this model, the question is not consistently explored as to what potential is available and can be usefully integrated into the product development process at the respective locations. This means that existing innovation potential remains unused.

When dealing with the concept of the "extended workbench" some companies are now using models that are supposed to contribute to lessening these difficulties. Thus the temporary exchange of some employees between locations has proved successful, especially in the initial stages of the cooperation. These kinds of "exchange phases" where employees get to know each other and swap expertise, make cooperation and communication easier, and help to break down any resentment there may be in the process. Furthermore a shift in thinking can now be observed in some companies which originally used the model of the "extended workbench", at least in some subjects. More thought is being given to the question of how the developing expertise can be better integrated and put to good use for product development at the different locations.

Behind the idea of the **collaborative development network** is the notion of not regarding the newly acquired locations simply as cost-effective appendages of the existing development locations, but deliberately integrating location-specific skills and existing expertise into product development as well as reaping the cost benefits. Accordingly the relationship with the low wage location is organised not so much hierarchically as heterarchically. The cost-saving location gets considerably more decision-making and management skills than with the "extended workbench" model. There is a less one-sided and stronger reciprocal relationship between the locations, and the cooperation is characterised by interactivity. Great care is taken in the collaborative development network to use the innovation potential of the different locations in the development cooperation. However this requires a great deal of outlay with regard to organisation and communication and it is not always easy to maintain a balanced relationship between the locations. Managing the relationship quite often proves complex.

Accordingly the collaborative development network is faced with completely different challenges to the "extended workbench" model. The programmatic heterarchic relationship of the development locations implies that all locations concerned are to be assigned certain responsibilities and levels of autonomy. However the accompanying negotiating processes often do not run smoothly. In these kinds of situations, in spite of any hierarchies that actually exist between the locations, it is necessary to establish relationships with a heterarchic character. Even if the responsibilities are clarified between the locations, in more complex or innovative projects situations arise time and again, in which the locations have to agree on further procedures. In these kinds of situations it is essential to maintain the balance, integrating the different backgrounds in

experience and perspectives and at the same time dealing with disagreements on content between the locations.

The issue of how much division of work and how much specific cooperation is practical is also gaining in importance in another context. The more demarcated the areas of responsibility and the more marked the centralisation, the higher the risk that the developers at the low wage location will not see the whole picture. In addition, global team meetings are difficult despite all the technical communications support available. Even discussing complex content or tricky issues is made complicated when the participants in the discussion are only visible via video conference and the sound quality is poor. From an organisational point of view the question also arises as to how many different locations a development team should support, and how the agreement processes between the distributed working teams can be usefully formulated. For example, it does not make any sense to spread a team of ten people over three different locations.

All these are issues which distributed developing software companies must discuss among themselves in order to efficiently create collaborative development networks. Just as with the concept of the “extended workbench”, both in the initial stages and across the whole life of the project, it has proved successful for some employees of the internationally distributed project teams to visit each other or work together for a while at the same place. Intensive exchange of information is also important especially for cooperation on complex topics. Regular telephone and video conferences play a large part in this. Moreover local managers at the respective development locations fulfil important functions for distributed working teams. Local employees feel they are better represented in this way, and local managers are able to contribute to better organisation of communications between the distributed teams. It has also proven beneficial to keep the number of development locations small and to take care that the time zone difference, for example between India and the US, does not unnecessarily hamper the distributed teams working together.

Therefore both models involve challenges which companies which develop internationally over distributed locations are having to face. They are currently gaining extensive experience as they deal with these difficulties. Even if the concept of the “extended workbench” is still very common, according to our findings it is questionable to what extent and at which locations it will be successful in the long term. It is a model under pressure, as it systematically implies discrimination against the locations. Dissatisfaction and employee turnover at the low wage location lead to tensions in the cooperation. In addition the nearshore and offshore locations are sometimes subject to change themselves, so the obvious thing to do would be to use their growth in experience more productively.

Although many software companies now have a wealth of experience in efficiently creating a collaborative development network, so far there have been no solutions

that are satisfactory in every respect, for example in the area of cross-team communication. It poses the question, to what extent the challenges of this model can be met in such a way that the efficiency of the international distributed development is ensured. Accordingly it is still not clear to what extent the model of the collaborative development network in this form will be established long-term.

3.3 Perspective of the IT professionals on internationalisation – experiences, attitudes and action strategies

The efforts made by both the software and the IT service companies to realise a new global production model have had a lasting effect on the mood and are high on the agenda in corporate publicity. Our findings show that the motivation and commitment of IT employees represent an important indicator of what stage the IT companies have reached in implementing a new production model. For this reason it is necessary to take a closer look at their experience, skills and action strategies.

Among German IT employees internationalisation is a red-hot and extremely controversial topic that is widely discussed. On closer inspection it becomes clear that their general mood swings between two main positions. On the one hand there is a distinct scepticism towards internationalisation, which is fed primarily by the fear of job losses. At the same time many employees are doubtful of economic success and ask themselves, *"Is it worth it?", "What's the point?"*. These doubts are based not least on the fact that they mistrust the foreign locations and wonder whether they "can keep up" with Germany with regard to quality. On the other hand many employees see internationalisation as an "unavoidable necessity" that cannot simply "be got around" these days. The main reason for this is the worry that due to the high costs in Germany they will no longer be competitive in a global market in the medium-term – unless they succeed in reducing the overall costs by developing offshore and nearshore location, even if that is "painful".

It is noticeable that employees feel very little positive connection to internationalisation – even the "unavoidable necessity" does not send any positive signals on the subject. The main reason for this is that employees - still – view internationalisation according to the paradigm of offshoring. This causes worry and concerns that determine the state of mind of many IT professionals.

This critical mood is perhaps not surprising. However our findings show that it does not have to be that way. This becomes particularly clear when we take a closer look at the experiences of many employees involved in international projects. These are often very positive. At the start many international projects are typically characterised by an unplanned procedure. To overstate the case: instead of a master plan that has been properly thought through, the internationalisation process often proceeds by trial and error, and this requires a high level of coordination. However building on these experi-

ences involves important learning processes taking place, which are primarily supported and formulated by the IT professionals. Functioning interfaces are developed and the employees do not simply implement the division of work but actively formulate it. In many projects this leads to an improvement in the international cooperation. There are numerous cases in which employees experience the cooperation with the foreign employees primarily as a positive change to their work – they are genuinely surprised by the quality of the services provided and the qualifications of their foreign colleagues. It is possible to get a grip on the intercultural problems, especially when there is an exchange of personnel; classic problems of comprehension are often more serious when language skills are poor.

IT professionals are therefore key players in internationalisation and as a result have entirely positive experiences at direct cooperation level. However what counts is that these positive experiences – which may become the basis of ongoing learning processes – often cannot be utilised in practice. As a rule they are displaced by a latent worry about job losses and the concern for the future of their own location. For many employees, the decisive keyword with regard to internationalisation under the guiding concept of offshoring is not cooperation but competition. This has very serious consequences – there is the risk of a culture of mistrust. On the one hand relationships with the management in the course of internationalisation processes that have often been positive and trusting so far are put under a great strain: in the eyes of the employees the managers are pushing internationalisation forward, even if in the process they appear to be pushed themselves. On the other hand foreign colleagues appear to be the personification of the threat to their own jobs. For this reason resentment and prejudice against foreign colleagues is unfortunately common, even in the IT sector. All in all it is not an atmosphere in which learning processes can easily develop.

To be noted: despite frequent positive experiences in the actual cooperation, internationalisation does not appear to employees as a positive perspective, but all in all stands for insecurity and an uncertain future. Many employees see themselves less as active players in internationalisation but more as primarily “victims”. Here we will continue to look closely at the perceptions, attitudes and motives of employees.

The first key subject that “bothers” employees is uncertainty about their own future. Many employees are concerned about the security of their job.² This is a great worry amongst older employees in particular. In the interviews we carried out there were often wild exaggerations, such as, “*We’re all obsolete here*”. But not everyone is so fatalistic. For the younger employees in particular it is all about keeping and securing their own individual employability.

² In public discussions the consequences for employees are often reduced to the mere loss of jobs (c.f. for example Kirkegaard 2004, 2005; Baily, Lawrence 2005; Amiti, Shang-Jin 2004; Bhagwati et al. 2004; Gerstenberger, Roehrl 2006).

The second key aspect of which the employees are critical is the change to their activity profiles. Some complain that the proportion of programming activities keeps dwindling. For many the increase in management activities and the management of international projects certainly means a career jump, but the fact that numerous IT employees very much want to continue working as programmers must not be overlooked (cf. Sahay et al. 2003). In his interview one IT employee assessed the change in his work by saying, "*There goes my quality of life!*". Others see the increased requirements (e.g. language skills) as a burden tending to result in excessive demands.

Another crucial factor in employees' attitude is that they often feel left out by the management in the internationalisation processes. On the one hand they complain of a lack of transparency – they argue that they are deliberately left in the dark regarding the actual profitability of many internationalisation projects and further planning regarding internationalisation. On the other hand they also feel unappreciated in their role as experts. They complain that their professional experience with internationalisation processes and their technically well-founded opinion is not taken into account ("The top brass are not interested in our views as mere lowly employees"). Furthermore many employees are openly critical of how internationalisation will affect the interests of the company. At the heart of this is the fear that expertise will get lost through internationalisation and for this reason innovative ability is being put at risk in the long term (cf. also Boes et al. 2005).

Against the background of the experiences outlined by employees is the question of their reaction and action patterns. On the basis of our findings three typical action patterns can be identified. There are employees who perceive internationalisation as a *risk* and deal with it accordingly, and there are employees who want to use internationalisation as an *opportunity*. Finally there is a third group (to a certain extent "*in-between*", who take a *pragmatic* approach to internationalisation.

When analysing this action pattern it is necessary to differentiate between the respective operational conditions and each different internationalisation scenario. In Working Paper 2 of the Export IT project we had already worked out that there are very different development scenarios in internationalisation. For the following line of reasoning it is helpful to look at the difference between the scenarios "Internationalization under pressure" and "Internationalization as a success story" (Boes et al. 2006b).

In the companies in which "Internationalization under pressure" takes place, worry and uncertainty predominate. With conflicting requirements there is then a real risk of development blockades, if the internationalisation in the company is communicated as a reason for job losses. Unsurprisingly IT employees in companies with this scenario experience internationalisation mainly as a threat or a risk. Accordingly they also have a tendency to behave passively; they react rather than act. At the same time individual –

mostly younger - employees develop a pragmatic approach to internationalisation and try "to make the best of it".

However, much more interesting is the finding that even in the companies which go with the development scenario "Internationalization as a success story", only a few employees develop a positive connection to internationalisation. Rather they largely behave very pragmatically along the lines of "If you can't beat them, join them". In this principle worries and uncertainties fluctuate with "It's the thin end of the wedge". In the successful companies the mood is certainly better than those with "Internationalization under pressure", nevertheless scepticism is also rife here, although no job have been lost in their companies so far, and the internationalisation has been economically successful. The overall mood is characterised by pragmatic joining in and an always tangible latent uncertainty. There are very few employees who seize the opportunity unconditionally and try to push forward without lowering their sights; they are for example managers and employees who have a special personal connection with countries such as India. All in all no atmosphere of embracing the challenges of internationalisation can be perceived in any of the companies studied.

To give an interim résumé: when it comes to internationalisation, motivational problems on the part of their employees threaten German IT companies. The background is the internationalisation paradigm "offshoring". It also provides an explanatory model for the often "passive" and "worried" behaviour of many employees. "Active" and not just pragmatic commitment seems irrational to most employees, since in the final analysis offshoring is contrary to their own interests. That is why, from the perspective of the employees, basic conditions need to be in place for them to make a lasting commitment to the internationalisation of their company.

- Professionalism in endeavours and strategies regarding internationalisation;
- Stability for the personal future of the employees and planning security for the company;
- Transparency with regard to strategic management decisions;
- A corporate culture based on respect, mutual esteem and appreciation, which conveys trust;
- Resources for defining and establishing an independent and sustainable role for employees in the internationalisation process (advanced training opportunities, for example).

Thus what is of key importance for the sustained success of internationalisation is not just the appreciation of the expertise and experience of the employees and their integration in processes of change. In the final analysis what is crucial is that conditions are in place in which, from the perspective of the employees, internationalisation is not inevitably

linked with worries and concerns. The "offshoring" paradigm is counterproductive in winning employees over to internationalisation and active joint learning processes. Relocating jobs or job losses lead to worry and uncertainty and so can affect the motivation and commitment of the employees. It is essential to convince the workforce of sustained and transparent internationalisation strategies (cf. Boes, Kämpf 2006).

For this reason our overall assessment on the level of development is that there are many good models in the IT companies, which can overcome the challenges in internationalisation, but no convincing forward strategy. The individual measures do not mesh in the sense of a coherent integrated concept. Looking at the IT companies in Germany, our diagnosis is they have the right measures and the detail in place, but there is no interaction in the sense of an integrated concept. Consequently it is not a matter of improving the detail, but of their strategic approach to the challenges of internationalisation.

How a successful strategy could look and what its conditions for success are, can be analysed by taking a look at the situation of the IT service companies in India. Taking India as a base, we can identify the special features in the new global production model better.

4 Change of perspective: key success factors for the Indian "Global Delivery Model"

Over the past few years the big Indian IT service companies have developed a specific understanding of the Global Delivery Model, that in the opinion of experts in the sector can be rated as a benchmark. So below we are adopting a new perspective on the internationalisation of IT services. We are looking at India and asking what can be learnt from successful players in internationalisation.

4.1 From the "extended workbench" to the nodal point of a new global production model

India has become a boom country for IT services. The Who's Who of the global IT industry is represented in India by branch offices and subsidiaries which are currently growing fast. In particular the two market leaders in the IT services sector, Accenture and IBM, are increasing the number of staff in the Indian subsidiaries very quickly. By the middle of this year the Indian national company of Accenture will become the largest national company within the corporate group with a total of 35,000 employees, outstripping the workforce in the home country, USA, with its 30,000 employees.³ IBM wants to expand its workforce in India to a total of 120,000 employees by mid-2008, and is evidently prepared to take over a large Indian IT company to do so. In the last two years alone IBM has issued 16,000 new contracts of employment each year.⁴ Enormously high growth

³ 'Computerwoche' magazine 29.01.2007.

⁴ de.internet.com vom 3.02.07 with reference to India Times.

rates in the number of employees, even if it is from a very low level, can be seen in branch offices of European IT companies such as SAP, Capgemini or Siemens. It is only mentioned in passing that there has also been rapid growth in the Indian development departments of classic industrial companies such as DaimlerChrysler or Bosch.

These figures alone make it clear that India as an IT location cannot be compared to other offshore or nearshore regions in any way. In public debate it is still always erroneously assumed that the Indian IT industry is essentially an extended workbench of US and European corporate groups; until recently it was only the well-informed who knew of the existence of independent Indian IT service companies. However, unlike all other offshore and nearshore regions (with the exception of China), India has notable independent capacity, especially in the IT services sector. Independent companies have emerged here to a large extent as a result of a specific development policy in India (cf. Aspray et al. 2006; Mayer-Ahuja 2006; Balakrishnan 2006; Kumar 2001; Kumar, Joseph 2004; Heitzman 1999; Vijayabaskar 2003; Parthasarathy 2005), and these companies have perspicaciously turned around the more growth-intensive services.

Indian IT companies referred to here in particular are Tata Consultancy Services (TCS), Infosys, Wipro, Satyam and HCL. If the Indian IT companies are compared to the biggest European IT companies by number of employees, it becomes clear just how big they have become. The three biggest European IT companies are Capgemini with 61,000 employees at present, T-Systems with 56,000 employees and Atos Origin with 50,000. The three biggest Indian companies now greatly outstrip them. The largest company TCS currently has around 95,000 employees, Infosys just under 76,000 and Wipro about 72,000. According to this criterion only the large US IT companies – for example Accenture with 146,00 employees at the moment – are still much bigger than the Indian companies.

In addition the big Indian IT companies have an extremely high growth dynamic. The employee growth in the big three makes the potential clear. In 2001 TCS had 13,751 employees, at the end of June 2007 it was 94,902. Infosys grew from 9,831 employees in 2001 to 75,971 by 30.06.2007. Wipro had 72,137 employees at 30.06.2007, in 2001 it was just 9,934.

Over the past few years India has developed from the “extended workbench” to the nodal point of a new global production model. The big Indian IT firms now have many years’ experience with international added value (cf. Hamm 2007). As is generally known it started with the employee leasing of Indian IT experts, who worked in US large companies, complete with the appropriate visa. Then followed a phase of offsite production, where Indian companies established small marketing headquarters close to important customers, while the services themselves continued to be carried out in India. For example TCS was the first Indian IT company to open a branch office in New York City as early as 1979. Only simple projects with defined functionalities that did not require any complex project management could be executed here.

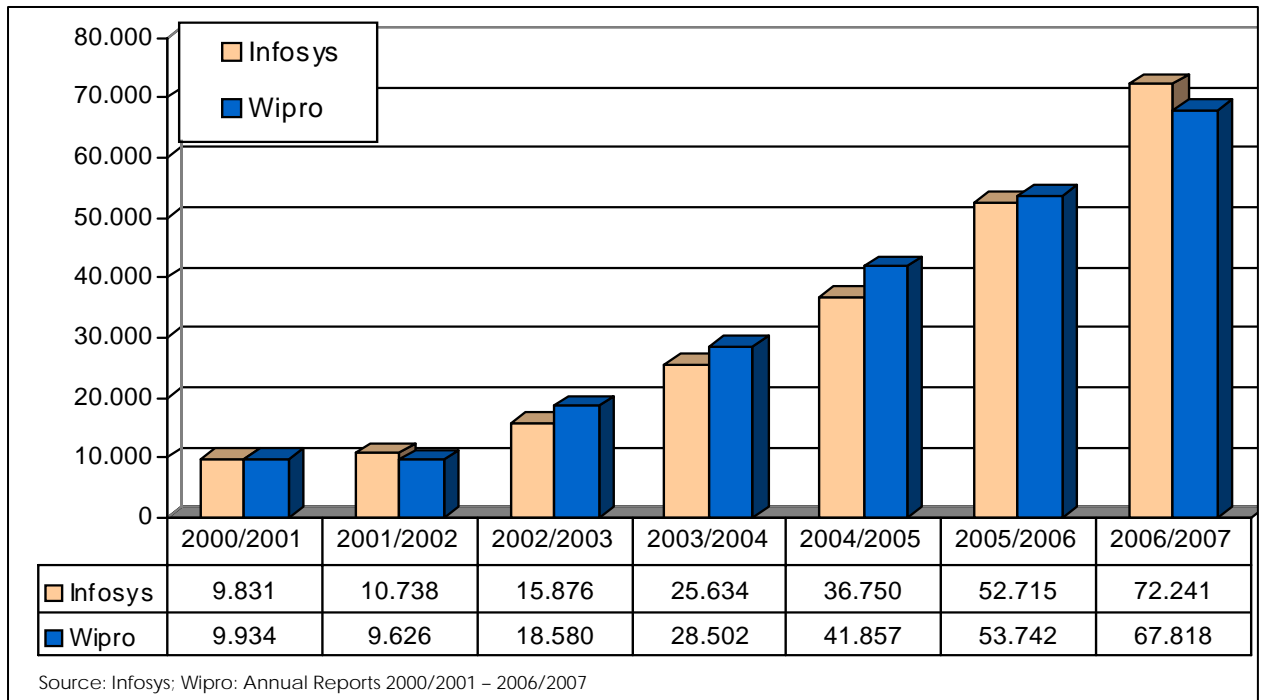


Fig.: Annual employee development for Infosys and Wipro 2000-2006

After this an onsite-offsite model was developed. In order to improve coordination and problem solving, project managers and employees were deployed at the customer's premises. In this way the cost benefits of the development in a low wage country were to be linked with management presence at the customer's premises. In this process the Indian IT companies learned not just to carry out simple, but increasingly complex projects. That's how the big Indian companies became strategic partners for complex SAP solutions.

Large Indian IT companies therefore provide much more than simple IT services. As cost leaders they have never rested on their laurels, but aimed at becoming quality leaders from the word go. For some years they have been developing this and pursuing the goal of providing better quality services. The close partnership of these companies with the large standard software manufacturers such as SAP is of particular strategic importance for them in this context.

At the moment a new phase is dawning. The large Indian IT companies are establishing global networks consisting mainly of development centres, but also of sales centres outside India (cf. Schaaf, Weber 2005). This change of perspective is clearly using TCS's conceptual strategy, as since 2002 the company has been talking about a "Global Network Delivery Model". Since then it has built up a global network of development centres in ten different countries outside India. These include the USA, Uruguay, Great Britain, Hungary, China and Japan.

A feature of this new phase is consequently that projects are no longer being established in a bilateral cooperation between locations in a high wage country and a low

wage country, but from multiple locations in different countries. This is to create the ideal link between speed, the lowest possible costs and the best possible expertise.

Overall we can record that over the past few years India has developed from an “extended workbench” for Western companies into a strategic location for IT companies. Unlike almost all other offshore and nearshore locations the further development of India as an IT location cannot be explained by the strategic calculation of the Western IT companies. India has its own autonomous potential that can longer be controlled by the Head Offices of the West. And, due to the concentration of the global IT industry in India and especially in Bangalore, a kind of silicon valley effect has started (cf. Saxenian 1996; Fromhold-Eisebith 2001, 2005). India seems to have a special position with regard to IT services, as does China with regard to IT hardware (cf. Lüthje 2005, 2006a, 2006b). For this reason neither country can be compared to the remaining offshore and nearshore locations.

A more precise look at the business model of these successful IT companies gives us important hints as to where the problems lie with German IT companies and how to overcome them.

4.2 Key factors in the Indian business model

In the debate on the advantages and disadvantages of India as an IT location or Indian IT companies, certain points crop up again and again. A fundamental point is certainly the low wage costs in India. The wage costs of an Indian university graduate are – according to the *Economist* – only about 12% of those of an American.⁵ Furthermore the education system is often referred to as being very service- and success oriented and produces over 400,000 engineers⁶ each year. In view of the very young demographic structure (more than half the population is under 25 years of age)⁷ India also has enormous potential in workers in the future. An important advantage the IT professional have compared to their Chinese colleagues is their outstanding knowledge of English – a legacy of the British colonial period which gives them a big advantage in the global market (cf. Aspray et al. 2006; Farrell et al. 2005a, 2005b).

The points quoted are of course very controversial. Talk in the Indian IT industry is often of rising wage costs and high labour turnover rates. The quality of the university graduates away from the elite Indian universities, such as the well-known Indian Institutes of Technology, is greatly criticised. Furthermore the Indian IT sector association NASSCOM is predicting a shortage of 500,000 IT experts in India⁸ by 2010 – a forecast that our business partners in the large Indian IT firms did not want to confirm however.

⁵ The Economist, 7-13.October 2006, p. 8.

⁶ Cf. G. Lype (2006): Engineering education: can India overtake China? Can be found at inhome.rediff.com/money/2006/jun/09bspec.htm. Engineers for 2005: China 600,000; Indien 464,743; USA 70,000; Europe 100,000.

⁷ Nasscom Strategic Review 2007.

⁸ The Economist, 7-13.October 2006, p. 8.

We could easily continue with this list of exciting topics, but we would only learn a little about the business model of the large Indian IT companies. So now we are going to take a look at their Global Delivery Model. From our perspective the Indian business model identifies two key factors: first the continual orientation to the paradigm of a "flat world", and second a consistent process of orientation- and optimisation. Our findings show that the ongoing further development of the business model in the form of learning loops based on systematic feedback is the key success factor of the Indian IT companies.

Orientation towards a "flat world"

The big Indian IT companies have geared themselves towards the global market from the start with their services and the model of how to provide them. Infosys has explicitly orientated itself to the "the world is flat" paradigm, making the model its key strategy. However the other big Indian IT firms are also "thinking flat". This has an interesting background. India has never had an appreciable domestic market for IT services; for example in the last quarter Infosys achieved only 1.8% of sales in India. For this reason the global market represented the key frame of reference for Indian companies, and the consequence of these market-related framework conditions was that the companies were forced to develop a global corporate culture. But at the same time, according to the assessment of our Indian business partners, this "global mindset" is an important success factor. They spoke with pride about their corporate culture, which they liked to describe as the "DNA of their organisation". For a Global Delivery Model to be successful it is not enough just to open offices all over the world. It requires a common distributed identity, irrespective of whether an employee is in India, the USA, Budapest or Argentina. They describe establishing and maintaining a consistent global corporate culture as the main challenge – especially against the background of their huge rates of growth.

Traditionally the business activities of the Indian IT companies have been concentrated in the USA and, despite all the language and cultural differences, Europe is a key growth market for them. Expressed in figures, companies such as TCS make over 50% of their sales in the USA and around 28% in Europe. The process is geared more to large global companies which are the market leader in their segment, and less to specific regions. An interesting indicator of the quality of services is the very high proportion of repeat business, that is of follow-up projects: for example Infosys achieved a repeat rate of 94.7% based on 488 customers in the last quarter.

Consistent process orientation

In addition to orientating to a "flat world", consistent process orientation is the second key factor in the Indian Global Delivery Model. These days the big Indian IT companies enjoy the reputation of having stable, reproducible and predictable processes (cf. Vickery et al. 2006). This was not always the case. In the first years of the Indian IT industry it could not be claimed that India as a location and Indian IT professionals had the

ability to develop qualitatively high-grade software. To gain the confidence of Western companies and to improve their market position, Indian IT firms invested heavily in quality certification, with the result that today all large Indian IT companies are certified according to high-grade quality standards such as CMM Level 5. According to our Indian business partners this quality level is accordingly no longer a competitive advantage but a basic requirement.

Below when we highlight the consistent process orientation as one of the key factors in the Indian business model, we are not limiting the concept of process orientation to technical development processes, as is the case with CMM for example (limited to the isolated development of software cf. Amberg, Wiener 2006). The point we are making is that process orientation refers more to the functioning of the structure as a whole. Thus both the qualification and the employees' motivation are included, as the best processes are useless if employees cannot or will not deal with them constructively.

However this brings us to the pertinent question of whether standardised processes, continual improvement and differentiated advanced training concepts are actually something new? In fact many of these aspects are already well-known. The point is rather that the critical differentiation characteristic lies in the consistent and systematic interaction of the individual parts – the whole is therefore more than the sum of its parts.

To the Indian IT companies, process orientation means that they put the process and not the actual project at the centre. The process is a model that is applied in actual reality; the project in question is "only" branching off from a process. On a general level the company differentiates between project types, such as development- and implementation projects on the one hand and maintenance and support projects on the other. A precise process is set down for each of these project types that specifies, for example, which work packages may be put in hand onsite at the customer's premises and which offsite for each project phase. The first stage then is to categorise the project. For implementing the project there are comprehensive and elaborate standards regarding project management, software development and communication and co-operation between the different locations and with customers. In addition to quality, customer satisfaction and project status are measured and analysed on an ongoing basis. Projects that cannot be categorised in accordance with the existing pattern, for example because new technologies are being used or the customer is new, are defined as "critical" projects and are supervised by a manager. The experience gained in these projects is then reproduced in processes.

Process orientation and standardisation make a high degree of stability and quality possible in internationally distributed projects. The project findings and the experiences of the employees can also be passed back into the specific process, so that it can be continually improved. Thus, as well as the implementation of the specific project, the process model itself is being improved at the same time on an ongoing basis. While the

Indian IT companies are developing solutions within a customer project, they are simultaneously improving their own process model.

However this has consequences for the Human Resources advanced training concepts. If it is established in a project that a project manager has dealt too forcefully with its Japanese customers, causing considerable irritation on the part of the customer, this would have repercussions on the intercultural training concept. Human Resources and personnel development play a key role in the understanding and functionality of process orientation – HR is the central background process to a certain extent. The qualification requirements regarding technological and sector-specific knowledge, intercultural skills plus general soft skills are reproduced in numerous training concepts, resulting in an ongoing improvement in the qualifications concepts.

Newly appointed employees, mainly university graduates, go through several weeks of introductory programmes. The course of instruction includes imparting technological knowledge, learning the processes, the methodologies and the standardised procedures, and the particular corporate culture. The comprehensive advanced training on offer enables employees to continuously build on their development. The big Indian IT companies have built large training centres, including lecture theatres with modern equipment, for their extensive advanced training activities. To give a few figures: Infosys has a training budget of 12 million dollars.⁹ Wipro employs more than 100 full time teachers on its own campus in Bangalore. At TCS, employees at a senior level have between ten and fourteen advanced training days each year.

The material core for this strong Human Resources orientation and for the close links HR has with the processes lies in the intention of making it independent of the individual. It is only through relatively standardised activity profiles that, for example, the high employee turnover rate can be dealt with at all. For the employees this means integrating into a differentiated and professional Human Resources Management good further development opportunities on the one hand and on the other hand the certainty that they will be able to operate flexibly in the job market.

To sum up: Indian IT companies have a specific understanding of standardisation. They comprehend that the provision of processes is a starting point for learning processes. Consequently these standards do not represent an end in themselves but are incorporated into an ongoing improvement process in which employees can take an active part.

⁹ The Economist, 7.-13. Oktober 2006, S. 8.

4.3 Success factors in the Indian business model and challenges for a “German” Global Delivery Model

Due to their consistent global orientation Indian IT companies were able to go with the flow of internationalisation and to a certain extent this is how they developed into successful large companies. They were lucky enough to be “early starters”, in the right place at the right time, as a management representative put it.

The really fascinating aspect in this model is the ability of these companies to continue developing consistently with no major consolidation phases, despite the huge rates of growth. However this is not as astonishing as it seems, as further development through systematic learning processes is one of the prerequisites for the huge growth – and growth is still one of their key goals.

In addition the Indian IT companies have succeeded in involving their employees in the growth and success of the company, so that they in turn take an active part in collective learning processes. There are two crucial points here: first these kinds of quickly growing companies are in a position to offer their employees attractive development and career opportunities and material compensation. Second the job market in India can be characterised as an employee market. The IT industry has turnover rates in double figures each year, so the company has to strive for a roughly symbiotic relationship between the demands on both sides, as an HR manager put it.

What advantage the Indian IT companies have over German and US companies we investigated cannot be depicted by glancing at individual measures. Their advantage comes more from the fact they succeed in establishing collective learning loops in the whole company as they are continuing to develop their strategy. A continuous improvement process results from these learning loops, and this process connects all the strategic functions of the company together.

Based on these findings what conclusions can we draw for the transfer of this kind of success model to German IT companies? We see three essential points that a “German” Global Delivery Model must take into account.

First the German IT industry, unlike the Indian IT industry, cannot redevelop its processes from scratch, but must *adapt* their established processes for a new phase in internationalisation. There are many challenges to overcome here, the resistance to changing existing routines and procedures or the difficulty in implementing new processes “from above”, to name but a few.

Second, for successful innovation of the processes *learning loops* must become a key standardisation factor. The reflection of strengths present in Germany (e.g. domain expertise, technology, consulting expertise, customer contacts) are a key basis for systematic learning processes. Standardisation is the prerequisite for Best Practice Sharing.

Third the *IT professionals* must be *won over* to internationalisation and be involved in learning processes. The acknowledgement of their expertise and experience and their integration into processes of change are vital to the sustained success of internationalisation processes. The "offshoring" paradigm is counterproductive here. Displacement of jobs or job losses leads to worry and uncertainty and so can affect the motivation and commitment of employees. On the contrary it is essential to win over the workforce to sustained and transparent internationalisation strategies.

5 Working together to further develop sustainable internationalisation as new model

Our comments have made it clear that we are only at the beginning of a new phase of globalisation of the economy. This is characterised particularly by the emergence of new global production models in the service sector, and draws new groups of employees into the maelstrom of the global economy.

This gives internationalisation a new quality. Broad sectors of the service economy and many highly qualified employees are now facing a new challenge. And the IT sector could be a strategic learning area for developing concepts as to how we want to meet these new challenges.

Up to now many of the pioneering companies in the IT industry have been meeting the challenge with old concepts. Where these kinds of old concepts are predominant, the company focuses on shifting tasks to low wage regions. The antiquated approach of offshoring dominates the internationalisation of most IT companies in Germany. The interpretation pattern still dominates; to reduce costs specified tasks are to be shifted to low wage countries, while in reality a world characterised by mutual dependencies and hetararchic relationships has emerged. Instead of operating with the paradigms of a globally networked, hetararchic global economy, the strategies continue to be derived from the logic of a hierarchical world order, in which the concept of "offshoring" is still the prevailing view.

This has a negative effect on the companies, because by its very nature offshoring as a model is used competitively by development decision-makers in a hierarchical world. This means that cooperation with employees in offshore and nearshore locations is clearly marked by an "us and them" approach – and that creates competition between employees in the high wage and low wage locations.

This totally hampers cooperation between employees in the different regions of the world. In this concept the employees in the low wage regions are assigned the cheap place at the extended workbench and the employees in the head offices are threatened with the shifting of jobs. This makes it difficult for people to get along in the companies. Instead of a common search for new opportunities and strategies, the risk of

jobs being shifted and the threat of a downwards social spiral and the loss of any options for taking action affect the coordination of the business.

This is the fundamental reason why to a large extent there are no common learning processes based on feedback in most IT companies. Continuously readjusting to the challenges of a global service economy is therefore structurally thwarted by an outdated model. The guiding orientation of offshoring certainly enables passive adjustments but no forward-looking strategy. For these reasons the endeavours to establish new concepts for an internationally networked service economy should be placed on a new paradigmatic basis.

The change of perspective to India is certainly no panacea, but refers to a search direction. It is important to grasp the emerging new world economy as a complex system of interdependent dependencies, which cannot be developed according to the logic of an “us and them” approach. In short: the world is flat! And it is important to keep focusing on the creation of common, learning processes systematically based on feedback for all players.

Our suggestion is to establish a new basic orientation instead of the antiquated model of offshoring. We call this “sustainable internationalisation”. Sustainable internationalisation is an open concept. It focuses on the idea of continuous learning processes, which form the basis for an ongoing improvement process. The prerequisite for these common learning processes is that sustainable internationalisation does not work at the cost of others. This includes both establishing hetararchic relationships between international partners and systematically promoting the commitment of employees at all locations in the networks.

Sustainable internationalisation is not a new panacea, but an orientation which gives direction to the common search for concepts. For this to succeed, the new model must be practiced with animation in companies and in society.

6 Literature

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