

# THE EVOLUTION OF STRATEGIC ALLIANCES: RELEVANCE IN THE COGNITIVE CAPITALISM

**Julia Taddei Stradi\***

Fecha de recepción: 31 de marzo de 2004. Fecha de aceptación: 15 de junio de 2004.

## *Introduction*

In our new phase of capitalism, knowledge is central. The industrial economics literature has shown the importance of the increasing rhythm of innovation; value-creation is becoming more and more linked to the firm's informational ability. In this context, it appeared logical that the increase in alliances was an efficient and flexible way to exchange information, to share research costs, etc. The definition of alliances given by the Thomson Financial Alliance database is that they exist where the sharing of property rights, risks and benefit are defined, where operational tasks are affected, and where independence and autonomy are preserved. A strategic alliance is created when two or more organisations cooperate without creating a new entity. Hence, strategic alliances do not include joint ventures. A joint venture appears when a new industrial entity is created and the participants preserve their autonomy. The new entity can result from the merger of two former subdivisions of each company or from the creation of a completely new entity. The participants are the parents of the new entity. Nor are mergers and acquisitions alliances. In contrast, strategic alliances appear when no new entity is created, even if the alliances are formal. The industrial economics literature has shown how important strategic alliances were. So the results we got from our database were surprising, as we would have expected more alliances to have been created. But since 1995, the number of alliances created falls dramatically. Our aim here is to propose some explanations for this evolution of alliances and to try to extrapolate some possible future trends from these explanations. As transaction-costs theory explains why one form of governance may be more efficient than another, we

---

\* Julia Taddei Stradi (research assistant) under the supervision of Professor B. Paulré, MATISSE ISYS CNRS, Université Paris 1, Panthéon Sorbonne. E-mail: [taddei@univ-paris1.fr](mailto:taddei@univ-paris1.fr)

find its use relevant here. But this theory is very static as it supposes that the institutional explanatory factors (asset specificity, uncertainty, frequency) are exogenous. Thus, it is very difficult to understand the change. Our hypothesis here is that these factors are endogenous. The evolution of alliances is also very closely related to the knowledge cycle, characterised by paradigm waves, and thus to evolutionary economics. Alliances can also be seen as institutional innovations, the appearance of which could be explained by the evolutionism, diffusion and aims of a particular innovation related to the grapes of innovation. However, evolutionary economics does not explain the choice of one innovation rather than another. Hence, the use of both evolutionary and transaction-cost theory, as two complementary theories, may be efficient here in explaining the change in alliances. Why do firms not invest more in alliances?

- *Introduction to the database*

We are working with the Thomson financial database, which is updated in real time. In obtaining the available results, we decided to stop updating of the data on June 30th. It starts in 1962, but there are only very few alliances before 1985 hence, we are including only the data since 1985. The database describes for each alliance: the participants, their number, sector, year of creation, year of dissolution, type of contract, *raison d'être*, and the sector in which it occurred.

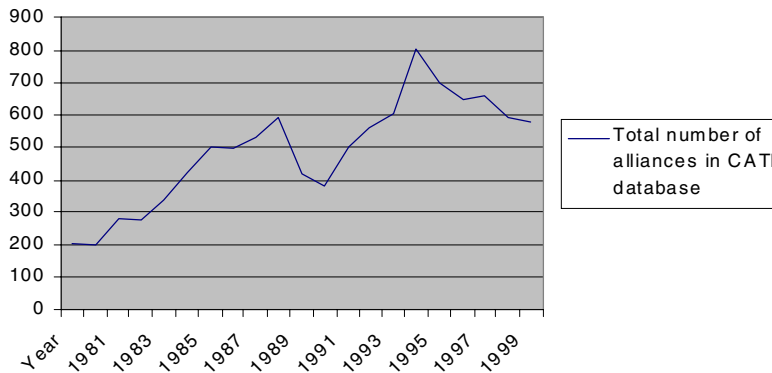
- *Introduction to the evolution of the number of alliances created*

The evolution of the number of alliances created between 1985 and 2003 may be described as an inverse U-curve where the maximum occurs in 1995. Because the decline is sudden and violent between 1995 and 1996, we thought at first that there may have been an error in the database. But there is no reason for a sudden loss of accuracy in the Thomson database. Even if this is what happened, it may have been compensated for as it is updated in real time.

This was unexpected because the literature generally assumed that the number of alliances would go on increasing, apart from the MERIT database where a maximum is observable in 1995, although this is not so dramatic (see next page).

Three particular aspects of the evolution need explaining here:

1. The peak in 1995, followed by a dramatic decrease in the number of alliances in 1996 (-46% for effective alliances; -43% for announced alliances).
2. The peak in 2000, although not as impressive as the previous one (-33,5% for effective and announced alliances between 2000 and 2001).
3. The increasing gap between announced and realised alliances between 1994 and 2003 (the proportion of effective alliances in total announced alliances rises from 91,1% to 48% in 9 years).



**Graph 1.** Number of alliances created in the CATI database, J. Hagedoorn.

We shall try here to give some elements of an explanation for these phenomena by studying internal factors in the first part, and external or, rather, environmental factors in the second part.

### *Internal factors*

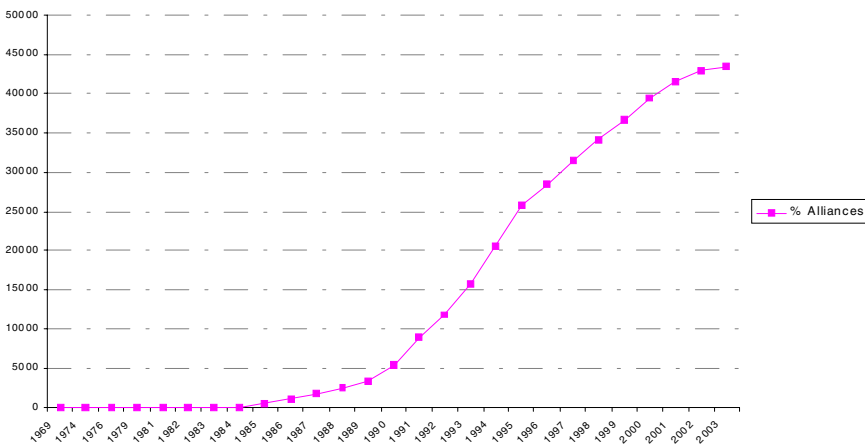
#### *a) Alliance saturation*

If we accumulate the number of alliances created, we find a logistic curve (an S-Curve). This is represented below by a three-degree polynomial trend-curve (with a correlation-coefficient of 0.9985), *i.e.* a logistic curve. It refers to a saturation phenomenon in the population of firms. For a given and almost constant number of firms, the number of alliances cannot increase infinitely because this would mean that a significant number of alliances would be between the same partners. Many complementary explanations can be made here:

- Even if the number of transactions needed were to increase infinitely you would need many alliances between the same partners to economize on transaction costs to integrate all these transactions into a single firm. This was explained by Coase in 1937, and is why, with a constant population of firms, we would not expect an increase in alliances above the level of 1995.
- If transactions-needs decline, the number of alliances will also fall, especially if the need for relevant information-transfer is limited during a given period. All informational exchanges are made during a certain period, and the marginal utility of this given stock of information decreases with the number of informational transfers, as they start to become redundant (redundancy is not efficient). Therefore, in the future we would expect a cyclical evolution because alliances will increase again with the creation of a new stock of relevant information to transfer. This assumes implicitly that the stock of

relevant information is fixed invariably for a twenty-year period. That would not be possible unless you adopted the conception of paradigmatic phases in the knowledge-creation process. The marginal utility of a paradigm decreases towards the end of its life... Then a new paradigm appears and during its diffusion a lot of informational exchanges are needed and alliances are relevant. This type of curve is frequently seen to describe innovation. In particular, the paradigm evolution, from its creation to its complete diffusion leading to saturation, is represented by an S curve and it is possible that the evolution of alliances merely follows this curve. The division of cognitive labour co-evolves with paradigm changes, therefore, according to the relevance of the alliances (Gibbons; Dosi Abernathy Utterbach).<sup>1</sup>

- Another explanation involves considering alliances directly as organizational innovations. A definition of organizational innovation is given in C. Ménard (1994b), as a change of structure, which fits in well with alliances.<sup>2</sup> For this reason it is also a radical innovation in Mansfield's meaning of the term. Its diffusion follows the entire innovation curve. As yet, we do not know what the next institutional innovation will be, nor whether it will be a substitute or alliances. If it is a substitute, the number of alliances will decline. If not, the number may remain stable. We shall study this assumption further in the next section.



**Graph 2.** Accumulated number of alliances created by year. Thomson Financial Database. B. Paulré 2003.

<sup>1</sup> Coincidence with applied research and the paradigm's diffusion phase.

<sup>2</sup> Hence, this radical change (alliances) should imply more continuous change as intra-organisational change (C. Menard). In this case alliances imply the co-evolution of participant firms. Moreover, it transforms the participants' emissive (F. Llerena, 2003) and absorptive capabilities (Cohen and Levinthal 199, 128:152) (learning by cooperating). This will be the subject of another paper.

*b) Alliance diffusion*

Another possible explanation for the alliance-dynamic lies in the relevance of alliances compared with other types of organisations, where complementarities or inter-firm exchanges are assumed to be constant. This leads to three types of question:

i) Why did the alliances take place?

The local stability of the organisation and of the technology related to irreversibilities conceals a certain inability to adapt itself to environmental changes, giving rise to transitional inefficiency within the organisation (J. Taddei Stradi, 2003; Chandler, 1977; and Teece and Armour, 1978) explained by the emergence of the M-Form as an organisational innovation due to the increasing complexity of management, and linked to an increasing number of products. But this previous innovation did not favour sufficient cognitive adaptability or reduce the cognitive frontiers traced by the increasing specificities within the firm. These frontiers appear to be particularly inconvenient when a new paradigm has just emerged. Then an incentive to the creation of new organisational forms may appear, explaining the rise of a new diversity corresponding to an ex-ante uncertainty which will be reduced by artificial selection through the institution. We certainly think that the rise and spectacular growth of alliances are related to this development (J. Taddei Stradi 2003). Alliances favour cognitive transfer and then reduce human asset-specificity and also physical specificity. They increase the participants' adaptability by favouring co-evolution.

ii) Why are alliances now considered inefficient or useless?

Three variables have an impact on alliance-efficiency as a mode of governance:

- Asset specificity decreases over time because exchanges of complementarities imply the elaboration of certain compatibilities, certain cognitive standards, such as a common language, but also technical compatibilities. Moreover, knowledge is specific before being exchanged, and not afterwards. This is analytically obvious. Transactions become less specific and afterwards the market becomes more efficient for these transactions. This also fits well with the saturation described above. It is endogenous that the marginal utility of a new alliance-creation falls over time, according to the number of alliances created in the past.

Another observation one can make is that as specificity decreases, profits linked to the innovation also fall (see Langlois, 1991: "an asset is specific when it has a higher value in a context of a transaction but not in another") because property rights are no longer protected by specificity. Thus the incentive to adopt or absorb this organisational innovation decreases with profit, as described in Schumpeter (see Menard, 1994).



Thus alliance-diffusion contains its own dissolution within itself.

- The Frequency of informational transactions should decline in the third phase of the paradigm, as explained above, because the marginal utility of new information decreases. By the way, this has no influence in a context of non-specific transactions.
- Uncertainty should fall because opportunist and cooperative agents have been detected in the past. This is one of the things agents can learn by cooperating. It also argues in favour of an increase in market relevance against alliances. This is for endogenous uncertainty; for exogenous uncertainty we must compare it with the volatility of demand in all sectors.

This could explain why the alliance-diffusion process ends in 1995. If our assumptions above are correct, then, alliances are a transitory adaptation (to a new paradigm) or mutation (or innovation). But, as transitional needs (new paradigms) appear cyclically, alliances may need to be revived, unless a new organisational innovation appears, substituting alliances.

iii) What institutional form is considered to be most pertinent or most efficient?

- 1st case: Agents prefer the market now.
- 2nd case: A new organisational innovation will appear.

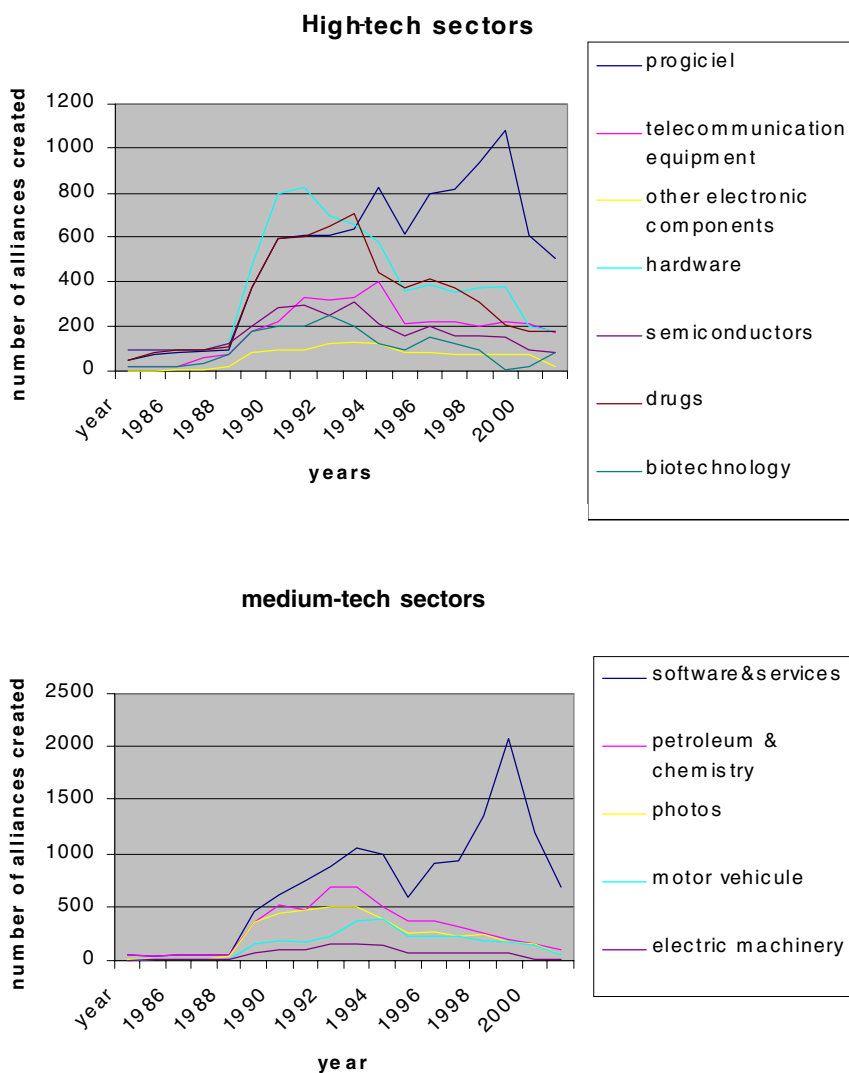
*c) The sector-based evolution of alliances*

Up to now, we have explained a general evolution, but certainly there is no sector-based effect, and we must now study the sector-based evolution of alliances.

Because of the immense number of activities in the database (60,563 major activities, as we have to total up the activities of each participant within each alliance), we classified them into a smaller number of categories. This is why we distinguished high-tech from medium-tech sectors. Alliances are counted twice, once for each participant.

All the sectors, except two (logic products and software), evolve in the same way as the global curve described, with a maximum in 1993-1994-1995. The previous explanations seem to work for these sectors.

For the two exceptions, their maximum being in 2000, the previous explanation works too, because they are general and do not depend on a particular year for the maximum. But, we have to explain why these sectors rather than others differ in their evolution. One assumption could be that logic products is the youngest of the high-tech sectors and the need for important alliances for logic products is greater and lasts longer than other sectors because the knowledge-cycle described earlier is more important. It is exactly the same with software and other medium-tech sectors. Nevertheless, as in all sectors, there is a significant fall in 1996. Why in that year?



**Graph 3.** Number of alliances created by sector and by year in the high-tech and medium-tech sectors. Thomson Financial Database, B. Paulré.<sup>3</sup>

<sup>3</sup> Logic products are software programs for professional use, related to Business-to-Business (B-to-B).

*Transition:* Alliances appear to be less and less relevant in absolute and relative terms (i.e., to another institutional form). Nevertheless, we still have to explain the sudden and violent aspect of the change. In a single year (1995-96), the number of alliances created falls by almost 50%. Can we explain the sudden change by a sudden dawning of consciousness? And why in that year, rather than another?

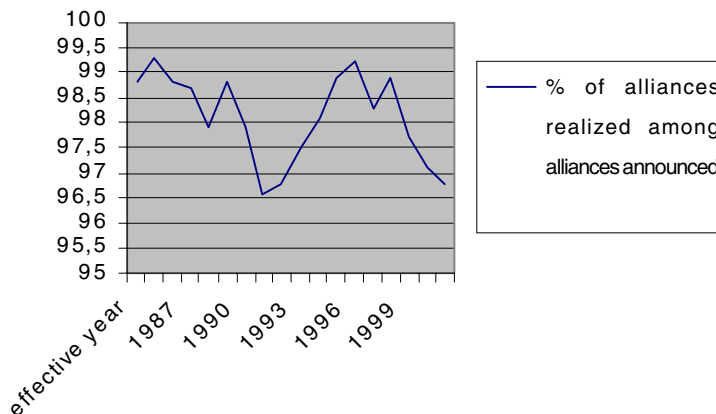
**External factors**

Perhaps, if internal causes cannot explain why it was 1994 rather than another year, we can find some explanation for this from the environment. We searched for some common features with the evolution of characteristic-proxies for the financial environment, because it is often explained that sharing costs and risks are important in the decision about whether or not to form an alliance. But what we found was a little different. Environmental changes may cause behavioural change such as becoming more cooperative or more opportunist. This, therefore, has an impact on the number of alliances created. The first part is devoted to the evolution of share valuations and their link with announced alliances, the second part deals with the movement of interest rates and the cooperative ability of participant tests using Gibbons model, while the third part focuses on dollar valuations and the incentive for more competitive or more cooperative behaviour.

*a) The Evolution of announced alliances and share valuations*

In the preceding graphs, we were studying the alliances realised in the database. But, we now consider the dynamic changes for announced alliances. If the number of alliances still drops, the decline starts only in 2000, while in 1995 there is only a relative peak.

But the lag between announcement and realisation is less than one year for all the alliances in the database that contains this information. Thus a change in this lag that



**Graph 4.** Number of alliances announced each year.  
**Source:** B. Paulré, Thomson Financial database



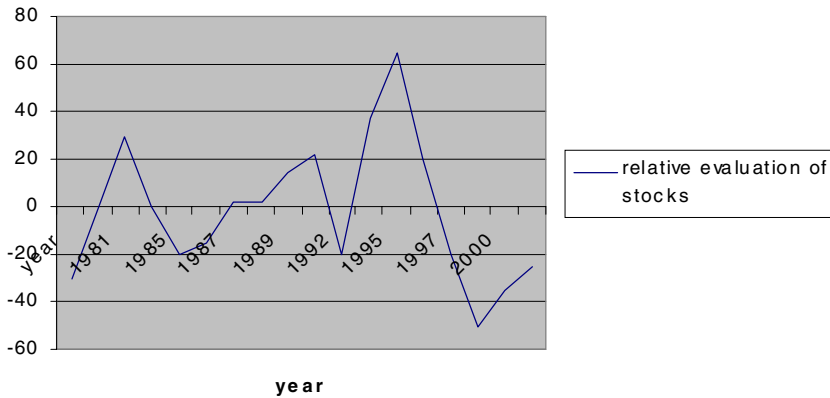
THE EVOLUTION OF STRATEGIC ALLIANCES

<i>Effective year</i>	<i>Alliances realised as a % of alliances announced</i>
1985	98.8
1986	99.3
1987	98.8
1988	98.7
1989	97.9
1990	98.8
1991	97.9
1992	96.6
1993	96.8
1994	97.5
1995	98.1
1996	98.9
1997	99.2
1998	98.3
1999	98.9
2000	97.7
2001	97.1
2002	96.8
Total	97.9

**Graph 5.** Alliance realised as a % of alliances announced.

cannot explain the gap between the two curves. There is no reason either for the Thomson database to lose its capacity to obtain the information for this period, as NTIC and economic and financial information become more diffused in this period.

Why do firms announce projects that will not be realised? Perhaps their realisation was never really desired, i.e. alliances are announced but not sought. Those that are realised are no longer related to those that are merely announced. The announcements could be aimed at artificially boosting falling stock prices. A more frequent use of this procedure could be due to a learning process among agents. Firms would have observed the positive effect that announcements had on stock prices in the past and try to reproduce it by announcing alliances without any real economic justification for such "virtual" alliances. If it does not cost anything to announce something false (even in terms of credibility commitments, because it is not observable by the public which later forgets) and so this lie may be profitable. It is actually surprising that it is not used more often. But maybe announcements lose credibility and so does alliance-efficiency, so alliance-announcements do not imply any necessary effect. Lies lose their efficiency. This is coherent with evolutionism (learning) and with TCT (opportunism). Here, firms learn how to become more opportunist (phase 1), and the market learns how to react to this new form of opportunism (phase 2). The incentive to lie thus increases (phase 1) and then decreases (phase 2). This is why the gap itself between announced and realised alliances follows a U-curve. This crazy assumption seems to fit in with the previous one and the graphs below:



**Graph 6.** Relative stock values.

**Source:** The Federal Reserve Model (values greater than 0 imply overestimates, below 0 underestimates).

*Phase 1:*

1995-1996: a drastic fall in stock prices and announced and realised alliances.

1996-2000: announced alliances increase and realised alliances continue to decline.

*Phase 2:*

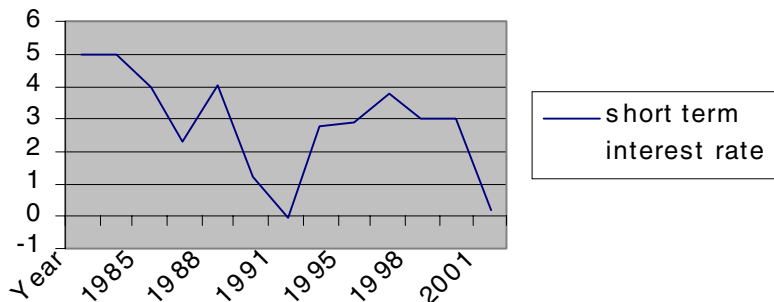
2000: a drastic fall in stock prices, but announced alliances converge with realised alliances.

2001-2003: stabilisation or increase in options, alliances and lag in announced and realised alliances.

*b) Interest rates, incentive to cooperate and alliances curves*

If we extrapolate from Gibbons’ repetitive trigger game strategies to alliance-creation, this being the sign of cooperative behaviour between both participants, we find that alliances appear if the gain from cooperation exceeds the gain from deviating for deceitful purposes.

Thus, alliances creation should depend negatively on the interest rate because the gain in cooperation is obtained over many years —the same goes for reputation effects. Hence the need for updating, whereas the gain from defection is immediate and does not need to be updated. When the interest rate increases, alliance-creation should fall.



**Graph 7.** Movements in US short-term interest rates, 1983-2002.

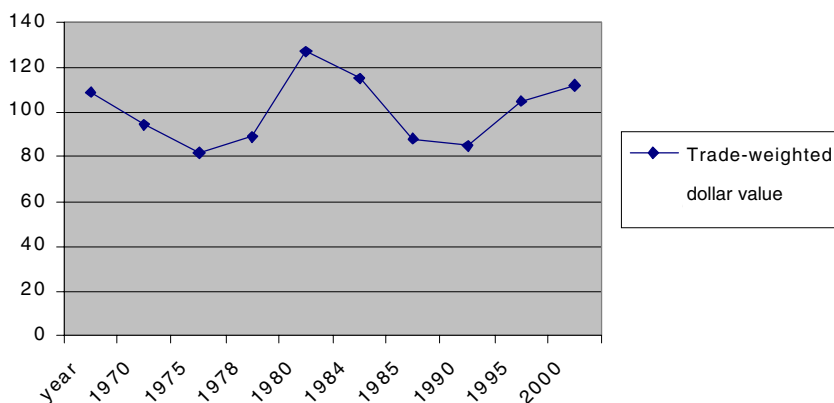
**Source:** Federal Reserve Model.

U.S. interest rates are an inverse function of inter-firm cooperation and, in particular, of the number of alliances.

- 1985-1993: interest rates fall, alliances increase.
- 1994-2000: interest rates increase, alliances decline.
- Since 2001, the evolution has not been clear.



c) Dollar price and alliance-evolution curves



**Graph 8.** Dollar movements, 1975-2003.

**Source:** Federal Reserve Statistics.

The dollar evolution-curve is the perfect inverse of the alliance-evolution curve over 15 years.

1985-1995: alliances increase and dollar prices fall.

1995-2000: alliances decline and dollar prices rise.

With the increase in the dollar’s value, American producers lose a part of their price competitiveness, so they cannot export as much as in the past (see graph below), and competition inside and outside the country increases. Thus, cooperation cannot be so strong, and a lot of alliances lose their relevance in this context.<sup>4</sup>

Nevertheless, if this explanation fits in well with the alliance-curve between 1985 and 2000, it is not so true since 2000. However, a more attentive observation of the previous curves shows that alliances do not decline for all the sectors but increase for them, except those in the new economy (logic products and software). In almost all the high-tech sectors, (except for a weak decline in hardware and telecommunications and the dramatic fall for logic products) alliances even start to increase in 2001-2002-2003. Thus, if you

<sup>4</sup> This may be in contradiction with the idea of the cost-sharing alliances often described in questionnaires in the literature. Perhaps some reasons for alliances are dictated by “animal spirits”, as J.M. Keynes used to write, and are not exactly conscious.


exclude all the sectors involved in the new economy, you will obtain the same relationship between the dollar and alliances after 2000 as before.

It is obvious that the declines for new economy items in 2000 have offset the effect of the dollar decline for the sectors concerned.

Alliances may be partly determined by their financial environment. Certain types of environment (higher interest rates, declining share prices, high exchange rate) favour more opportunistic behaviour (lies and alliances decline, competition increases), thus handicapping the creation of alliances. It is strange to see how alliance curves are close to the macroeconomic financial curves.

### *Conclusion*

Alliances may be seen as transitory adaptive mutations, transitory because their creation decreases after 1995, adaptive because they answered a need for a specific knowledge-transfer that is not so important, nor so specific, at the moment—but also because their evolution seems to be related to the evolution of their financial environment— mutations because they did not really exist before 1962, and so they appear as an organisational innovation following an S-curve.

It has been suggested that these ideas are not in conflict as they do not exclude each other, but may instead be complementary. Environmental financial causes may explain the violent and sudden aspect of the change in 1995, or in 2000, while endogenous causes may explain the evolution of alliance-relevance. But depending on the assumptions made, forecasts of alliance-relevance change: If it is environmental it may be a stop-go movement; if it is endogenous, it is more periodic (if alliances follow paradigmatic waves) or historical (if they are considered as an organisational innovation that will be replaced by something else). May be, if we put these explanations together, alliances would follow a declining trend linked to the emergence of new organisational innovations with periodic increases and decreases following paradigmatic waves, and some volatility within this trend linked to environmental factors. 

### **Bibliography**

- Abernathy, W.J. and Utterback, J. M., “Patterns of Industrial Innovation”, in Michael L. Tushman et William L. Moore, editors, *Readings in the Management of Innovation*, New York, HarperBusiness, 1988, p. 25-36.
- Aoki, M., “L’Economie Japonaise, Information, Motivations et Marchandage”, translated by H. Bernard, *Economica*, 1991.
- Arena, R., Charbit, C., “Frontières de la firme, frontière des firmes: un point de vue néomarshallien”, in P. Garrouste (sld), *Les Frontières de la Firme*, *Economica*, 2002.
- Armoor, H., Teece, D., “Organisational Structure And Economic Performance: A Test Of Multidivisional Hypothesis”, *Bell Journal of Economics*, 1978.

- Arthur, B.W., "Competing Technologies, Increasing Returns and Lock-in by Historical Events", *Economic Journal*, vol. 99, 1989, 116-131.
- Bazzoli, L., Kirat, T., "La relation entre le droit et l'économie dans les traditions institutionnaliste et post-coasienne: enjeux pour l'analyse de l'évolution", *Economies et Sociétés*, Hors série, no. 34, no. 1, 1999, pp.67-88.
- Brousseau, E., "La Coopération Industrielle", in Bellon, Voisin, Plunket, *Economica*, Paris, 2000.
- Brousseau, É., "Néo-institutionnalisme et Évolutionnisme: Quelles Convergences", Version remaniée 9/11/97 Université de Nancy II & ATOM (Université de Paris 1) *Economies et Sociétés*, HS 35, no. 1, 01/1999.
- Chandler, A.D., *Strategy And Structure, Chapters In The History of American Industrial Enterprise*, Cambridge, MIT Press, 1962.
- , *The Visible Hand: The Managerial Revolution in American Business*, Cambridge, Harvard University Press, 1977.
- Coase, R. H., "The Marginal Cost Controversy", *Economica*, n.s., no. 13, 1946a.
- , "The Problem of Social Costs", *Journal of Law and Economics*, 1960b.
- Cohen, W. M., Levinthal, D. A., "New perspective on learning and innovation", *Administrative Science Quarterly*, 1990, 35:128-152.
- Colin, P., "Regard Sur L'institutionnalisme Américain", *Cahier Des Sciences Humaines*, 1990
- Commons, J.R., "Institutional Economics", *American Economic Review*, vol. 21, 1931a, pp. 648-657.
- , *Institutional Economics: Its place in political economy*, 1934b.
- Coriat B., Weinstein, O., *Les Nouvelles Théories De L'entreprise*, Le Livre de Poche, Paris, 1995.
- Defeuilley, M., Vahabi, "Transaction Cost Theory And Evolutionary Economics, The Questionable Synthesis", Colloquium, Sorbonne, Paris, September 19-20, 1996.
- Dockes, P., "Le recours à l'histoire et l'évolutionnisme", presentation at the Colloquium, Evolutionnisme et Institutionnalisme, at the University of Lyon, December, 2002.
- Dosi, G., "The Nature of the Innovative Process" in Dosi, G. et al., *Technological Change and Economic Theory*, London, Pinter Publishers, 1988, pp. 221-238.
- Gibbons, R., "Incentives In Organization", *Journal Of Economic Perspectives*, vol. 12, number 4, Fall 1998, pp. 115-132.
- Hagedoorn J., Available on the National Science Foundation website.
- Hagedoorn, J., "Understanding the rationale of strategic technology partnering: inter-organizational modes of cooperation and sectoral differences", *Strategic Management Journal*, 1993, 14:371-385.
- Hagedoorn, J.; E. Carayannis and J. Alexander, "Strange bedfellows in the personal computer industry: technology alliances between IBM and Apple", *Research Policy*, 2001, 30:837-849.
- , "Inter-firm R&D partnerships: an overview of major trends and patterns since 1960", *Research Policy*, 2002, 31:477-492.
- and R.N. Osborn, "The Institutionalisation and Evolutionary Dynamics Of Inter-organizational Alliances And Networks", *Academy Of Management Journal*, vol. 40, no. 2, 1997, pp. 261-276.
- Hodgson, G. 2002), <http://www.sussex.ac.uk/spru/publications/imprint/sewps/sewp83/sewp83.pdf>
- Langlois, R.N., "Internal Organization in a Dynamic Context: Some Theoretical Considerations", in M. Jussawalah and H. Hebenfield, eds, *Communication and information economics: new perspectives*, Amsterdam, North Holland, 1984.
- , "Production Costs, Transaction Costs And The Passage Of Time", in Steven G. Medema, ed., *Coasean Economics: Law and Economics and the New Institutional Economics*, Dordrecht, Kluwer Academic Publishers, 1997, p. 1-21.
- Llerena, P., "Emissive Capability", paper presented at ETIC (Economy of Technological and Institutional Change), October 2003, in Maastricht, Netherlands.
- Menard, C., *L'économie Des Organisations, repères*, La découverte, 1990a.
- , "La Nature De L'innovation Organisationnelle, Elements De Reflexion", *Revue D'Economie Industrielle*, summer, 1994, Special Issue, "Economie Industrielle, Développements Récents".
- Nelson R. and S. Winter, "An Evolutionary Theory of Economic Change", Cambridge, Harvard University Press, 1982.
- North, D., "Institutions, Institutional Change, and Economic Performance", New York, Cambridge University Press, 1990.
- Pavitt, K., "Knowledge About Knowledge", Electronic Working Paper Series, June 2002, Paper no. 83, 2002.
- Penrose, E., *The Theory Of The Growth Of The Firm*, Oxford, Basil Blackwell, 1959.
- Schumpeter, J.A., *The Theory of Economic Development*, New York, Oxford University Press, [1926] 1961.
- Silver, M., "Enterprise and the Scope of the Firm", London, Martin Robertson, 1984.
- Simon, H.A., "Theories of Bounded Rationality", in C.B. MacGuire and R. Radner, eds., *Decision and Organisation*, New York, 1972.



- Taddei Stradi, J., "Evolutionnisme et néo-institutionnalisme vers une plus grande compréhension de la dynamique institutionnelle et technologique", *Journées de la Maison des Sciences Économiques*, University of Paris 1 panthéon Sorbonne, Avril 2003.
- Teece, D. J., "Profiting from technological innovation: Implication for integration, collaboration, licensing, and public policy", *Research Policy*, 1986, 15 (6), 285-305.
- Williamson, O. E., *The Economic Institutions of Capitalism*, New York, The Free Press, 1985.
- Williamson, O. E., "Transaction Cost Economics and Organization Theory", in N.J. Smelser and R. Swedberg (eds.), *The Handbook of Economic Sociology*, Princeton, N.J., Russell Sage Foundation, 1994, pp. 59-77.
- Williamson, O.E., "Economic Institutions and Development: A View from the Bottom", in Olson, M. and Kähkönen, S. (eds.), *A Not-so-dismal Science*, Oxford, Oxford University Press, 2000, pp. 92-118.