
Sustainability Issues for Start-up Entrepreneurs*

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The concept of entrepreneurship covers many types of organisational and individual activities but it takes its most obvious form in the decision by an entrepreneur to start a new business. In recent years, researchers from different perspectives have focused more attention on the entrepreneurial activity involved in starting one's own business. Sociologists, psychologists and economists have all tried to give answers to questions such as: 'What conditions support business start-ups?'; 'Why do individuals decide to become entrepreneurs?'; 'What impacts do start-ups have on the economy?'. Environmental business management research has not yet concentrated on start-ups, although this early stage of a business enterprise's life might be a sensible starting point for environmental management. This paper is a report of an empirical study into start-up processes, designed to discover whether there are opportunities for implementing more sustainable business practices from the very beginning of new business ventures. Start-up entrepreneurs as well as start-up business advisers were interviewed in order to identify the points where environmental management could be incorporated into the start-up process. In the group of entrepreneurs interviewed, conventional as well as ecologically oriented entrepreneurs were represented. The different orientations made it possible to compare their respective approaches to the adoption of more sustainable business practices. It was found that starting a new business venture is a very complex process. Start-up entrepreneurs have to comply with a variety of external demands. Business advisers and banks as well as market conditions often interfere with the pursuit of ecological business practices. Information on how to start an ecologically oriented business venture is notably not provided by institutions that support start-ups. The comparison of ecologically oriented start-ups with conventional start-ups showed that the most crucial factor for environmental considerations in the start-up process is the entrepreneur him- or herself.

- Start-up
- Start-up process
- Entrepreneurship
- Entrepreneurs
- Sustainability
- Sustainable business practices
- Green start-ups
- Business advisers

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* In this paper we report on current results of an ongoing research project carried out on behalf of the German Ministry of Education and Research. The project is named 'Start-up to Sustain' and tries to discover possibilities and develop measures for green start-ups and for the greening of 'common' start-ups. The final results of this project will be published in 2004. For further details, see www.start-up-to-sustain.de.

Turning the focus to start-ups

IN CORPORATE PRACTICE, DIFFERENT LEVELS OF ECOLOGICAL AWARENESS AND activity can be seen. Most companies still practise a more or less defensive strategy. They comply with legal obligations and try not to attract special attention from local residents, environmental activists or the general public (Belz and Strannegård 1997). However, there are a few eco-pioneers¹ whose environmental performance is much better than that of the average company (Isaak 1998). They save energy and resources and, as a consequence, save substantial costs. Furthermore, these entrepreneurs look for opportunities in their respective markets to develop goods and services for environmentally aware customers. Their companies are on their way to sustainability.² However, although most of them are also successful in economic terms, other companies do not necessarily follow their example. The green enterprise is still an exotic enterprise.

Since the mid-1990s a new wave of the greening of industry has been occurring in Europe and the industrialised world. For example, standardised environmental management systems (EMSS)—mainly in the mould of the Eco-management and Audit Scheme (EMAS) of the European Union (EU) or ISO 14001 of the International Organisation for Standardisation (ISO)—have been developed and implemented within more than 40,000 companies worldwide.³

However, the positive environmental effects of EMSS are rather small (see e.g. Dyllick and Hamschmidt 2000; Morrow and Rondinelli 2002), and the normal state of organisational practice does not match the state of the art in organisational theory. EMSS are expert-based systems in which corporate environmental care is dictated in a top-down way. It is rare to find substantial changes in corporate culture arising from the adoption of EMSS. In practice, the implementation of more sustainable business measures into an existing organisational culture is often an arduous and lengthy process, resulting in conventional additional environmental conservation measures that do not reach beyond daily operating procedures (Freimann and Schwedes 2000; Freimann and Walther 2002).

The promotion of sustainability in start-up businesses seems to be a more promising approach, for a number of reasons. New businesses have yet to develop an organisational culture. As examples of green-green businesses founded with the clear objective of profitability through serving ecological and social aims show, there are opportunities for developing sustainable corporate cultures from the very beginning of a new venture (Anderson and Leal 1997). According to this argument, it should be easier to ‘infect’ founders of new businesses with the idea of sustainability than to rebuild the established corporate cultures of existing companies. Thus, the focus should not only be on the few ecopreneurs who convert their ideas of sustainable enterprises from the very first moment they think about building up their own businesses but also on start-ups by entrepreneurs just planning to create a conventional new venture who also need to become aware of the opportunities that more sustainable business practices have to offer. A widespread sustainability orientation in start-ups could speed up the overall process of sustainable restructuring of industry and commerce.

1 Other authors call them green-green businesses, ecopreneurs or enviro-capitalists (see Isaak 1998).

2 If we allude to sustainability rather than to ecology, we recognise that this term—although it has its origin in ecology—includes the balance between ecological, social and economic aspects. Since ecological aspects are the very basis of sustainability and, in addition, as most of our interviewees in the companies did not understand the term sustainability, we looked for ecological awareness as the most important step on the way to a sustainable economy.

3 For exact, up-to-date, figures see www.1400news.de

The basic hypothesis of our research project is that new business ventures are generally more open to new ideas, because they lack an already existing organisational culture; therefore, it should be easier to introduce sustainable thinking into new ventures than into established enterprises. In this paper we report on the results of an empirical study of start-up processes. The start-up processes of conventional and of sustainability-oriented start-ups are analysed in order to discover how they differ. It is also an aim of the analysis to identify the triggers that lead to the implementation of more sustainable business practices in the new 'green' business ventures. The results of the analysis will serve as a basis for the development of services designed to support start-ups in adopting sustainable business practices.

Research design and method

In order to discover starting points for ecological and social intervention in new businesses, the start-up scene in Germany was analysed.⁴ Start-up literature provided data about the institutions and actors active in this field (BMWi 2000; DIHT 2000). These sources, however, did not offer any insight into the details of start-up processes. Neither did they help to distinguish between eco-start-ups and conventional start-ups in order to discover what their specific features were.

In our empirical study we tried to achieve a detailed description of start-up-processes and the differences within these processes between the two types of firms. We carried out personal interviews with two groups involved in the start-up process: the entrepreneurs themselves and business advisers who offer a consulting service for start-ups. In order to obtain a thorough insight into the start-up processes, we carried out 11 interviews with business advisers and 10 interviews with start-up entrepreneurs. The interviewees were located throughout Germany. Table 1 details the industries, the length of time for which they had been in operation and the numbers of current employees and founders involved in the start-ups visited.

To avoid confusion in the interviews we used the term 'ecology' rather than 'sustainability' in the interviews (see footnote 2). As a consequence, the following results refer primarily to ecological contexts within start-up processes.

Results

The start-up process

The start-up process covers a period of time that is hard to specify. The onset and the end of the process are not well defined and are delineated differently in the descriptive literature. The process of creating a new venture is consistently characterised as a complex event in which varied planning and preparation activities are necessary and in which decisions need to be taken (Hisrich and Peters 1998; Szyperski and Nathusius 1999).

In general, start-up processes in the sample studied differed widely, especially in terms of the amount of time spent on preparation. Whereas some entrepreneurs required only a few months, others needed years for their preparation activities. The

⁴ The restriction to Germany might lead to specific results that cannot be generalised to other countries because of specific administrative circumstances in the German legal and economic framework of start-ups, but as a first step on this rarely investigated field we believe this limitation is acceptable.

<i>Start-up company</i>	<i>Industry</i>	<i>Years in existence</i>	<i>Employees</i>	<i>Founders</i>
1	Carpentry	1	8	1
2	Carpentry	1	0	5
3	Paint contracting	2	2	1
4	Car sales and garage services	3	15	2
5	Car sales and garage services	8	25	2
6	Manufacture of electrical engineering equipment	4	12	1
7	Producer of semi-finished and finished materials	4	4	2
8	Wholesale distribution of domestic appliances	5	3	2
9	Wholesale distribution of solar power appliances	1	1	6
10	Software service provider	3	0	4

Table 1 THE CASE-STUDY START-UP BUSINESSES: INDUSTRY, THE NUMBER OF YEARS IN EXISTENCE, THE CURRENT NUMBER OF EMPLOYEES (EXCLUDING FOUNDERS) AND THE NUMBER OF FOUNDERS

reasons for these differences were varied and depended on individual circumstances. In one example, a team of founders created a start-up venture in the field of computer-based geographical information systems (GIS). As the equipment investment was affordable and they already had a first firm order they were able to start their new venture within months. In another case, relating to a carpentry start-up, the entrepreneur wanted to include a wood-gasification technique to create a closed-loop production process. The development of this technique took several years and led to a total preparation time of eight years.

What seems to be similar for most entrepreneurs is that they do not change their business ideas to any large extent in the course of the start-up process. They may decide to adapt the legal form of their enterprise, as well as the financing structures, to make use of tax advantages, and they may alter minor operating procedures but they do not vary their basic business idea. Once they have developed a picture of their future business venture, they are determined to pursue it.

A very problematic phase in most start-up processes is the first months of transacting business. At this time entrepreneurs are exposed to a heavy workload and often fail to execute important management tasks such as strategic planning and control. Financial difficulties are often a consequence and indicate that corrective action is necessary. Sometimes, though, it is too late to make the necessary changes. The reason for this phenomenon is that in most cases entrepreneurs work alone or in pairs and have to deal with every individual course of action themselves. In many cases, entrepreneurs are just not able to cope with the pressures with respect to time or the business administration skills required. One of the business advisers commented that

[Entrepreneurs] are simply eaten up by their daily routines and are no longer able to think about strategic planning and orientation for the future (Source 1).

Many of the entrepreneurs and advisers concluded that the weight of information and the heavy workload force start-up entrepreneurs to concentrate on essentials. They considered any attempt to take ecological issues into account as an additional burden within the start-up process, stating

This would be too much, in my opinion, because it is already a very demanding project (Source 2).

and

At this moment, you've got enough on your mind; you cannot think about these factors additionally (Source 3).

These assessments correspond to the findings of Palmer (2000), who analysed a group of proactive small and medium-sized enterprises (SMEs) and found that, apart from financial resources, time resources were the most important obstacle to making more progress towards environmental management. This is even more the case in start-up enterprises. However, a few entrepreneurs took a different view and accepted that it was possible to implement ecological thinking into the start-up process.

At first glance, the start-up process seems to be filled with conditions that impede sustainable intervention. Entrepreneurs are in need of access to information that will support the implementation of more sustainable business practices and that can easily be applied during the start-up process. Otherwise, most of them will not put sustainability into practice in this crucial period.

Business advisers to start-ups

Start-up business ventures are also affected by the advisers who work with them. There is a wide range of advising individuals and institutions that play a role in start-up processes. These include chambers of industry and commerce, craft associations, employer associations, start-up fairs, start-up centres, banks, Deutsche Ausgleichsbank (the business start-up promotion agency of the German federal government), start-up consultants, accountants, lawyers, employment offices, start-up competitions, universities, 'business angels', venture capitalists and start-up forums and clubs on the Internet. In addition, start-up entrepreneurs often consult their own personal networks for information. These include family members and friends as well as former employers, colleagues and business connections.

Whether the new venture will work in a more sustainable manner could depend on how advisers assess and put forward ideas regarding more sustainable business practices. In the study, the business advisers were asked how they acted as partners of start-up entrepreneurs and how they assessed the opportunities for implementing ecological aspects during the start-up process. Most of the advisers described their start-up service as a series of discussions with the prospective entrepreneur. In these discussions advisers usually provided assistance in the development of the start-up concept. Additionally, they dealt with figures such as expected expenses, cash flow, liquidity and anticipated profitability. Important issues in the discussions were often about financing and public financial support as well as marketing.

Ecology plays, at most, a subordinated role in start-up consulting. The advisers emphasised that considerations of ecological issues depend very much on the industry in which the new venture is based. They considered ecological aspects as relevant only in connection with the obvious demands of the market, cost savings and legal requirements. According to the advisers, most of the start-up entrepreneurs took sustainable business practices into account only as a means of distinguishing themselves from their competitors. This was usually done by expanding the range of products with 'ecologically friendly' products.

The business advisers saw the implementation of ecological considerations for a new firm as difficult when there was no immediate financial return or advantage associated with these activities. In small start-ups they even assessed an ecological orientation as dangerous, because of the possible additional financial burden that it imposes. The vast majority of the advisers obviously equated ecological business practices with increased costs. In many cases the advisers considered the ecological alignment of products and services as being innovative. Therefore, their introduction to the market would take

longer and could be burdened with added costs and greater risks. As a consequence, advisers reported being more wary of ecologically oriented start-ups. However, some of the business advisers agreed that the introduction of ecological issues into start-up consulting services was possible. Most, though, had not thought of doing so before.

In general, business advisers who are in a position to influence the strategic orientation of new enterprises tend to reduce new venture planning to a limited set of management issues. As a result they have dealt only with well-known, proven, conventional matters (such as financing, marketing and operations). If advisers were prepared to make environmental issues a regular part of their start-up consulting services, more new business enterprises might adopt a proactive approach to sustainable business practices.

Ecological orientations in start-up practice

In practice, start-ups differ widely in their ecological orientation. There are green start-ups that consistently align all operating procedures, services and products according to environmental needs, and there are conventional start-ups giving no ecological considerations to the business at all. We identified three broadly different sets of views that lie on different points of this continuum (see Table 2).

In the following sub-sections we provide a comprehensive description of each type of start-up and show how and why start-ups differ in terms of the environmental alignment of their new ventures.

Eco-dedicated start-ups

In eco-dedicated start-ups, environmentally friendly activities are undertaken in products and services and/or in operational procedures. The entrepreneurs in this group are interested in techniques and materials that offer opportunities to be environmentally sound in their field. Their strategy is deliberately brought into line with environmental needs. In one case in our sample, a team of entrepreneurs was determined to develop a sustainable thermoplastic material out of renewable raw material for technical applications (start-up 7). Eventually, they developed a material that met high quality standards and was feasible for use in injection-moulding applications. With this new material it became possible to replace plastics in the plastic-processing industry.

One reason for the adoption of sustainable business practices is the recognition of opportunities in the market. Start-up entrepreneurs in this group are particularly liable to see a favourable trend in their respective sectors for ecological orientations. They either think that they will be able to compete as a so-called 'ecopreneur' in the conventional market or believe that they will become competitive as a result of developments in the market (such as being able to compete in the face of rising prices or legal requirements).

They also identified a number of barriers to sustainability. When initial technical developments are necessary to achieve a higher level of environmentally sound procedures or products, financial support is reported to be especially difficult. In these cases, funding is essential to meet the costs of technical developments and to win recognition of new products or services in the conventional market. Moreover, in the early stages of business transactions, the new goods and services do not reach the necessary volumes to achieve competitive prices. As a consequence, expensive green goods and services have to compete with cheaper conventional products, which in turn prevents a higher demand from developing. After two years of continued existence, the above-mentioned producers of the sustainable material are still trying to gain recognition in the conventional plastic-processing industry and they are still in need of high-volume orders.

<i>Eco-dedicated</i>	<i>Eco-open</i>	<i>Eco-reluctant</i>
<p>DESCRIPTION</p> <p>These companies consistently adopt environmentally friendly business practices.</p> <p>These companies partially adopt environmentally friendly business practices.</p> <p>These companies adopt environmentally friendly business practices to comply with regulations.</p>		
<p>ENVIRONMENTALLY FRIENDLY MEASURES ENCOUNTERED IN THE START-UP BUSINESSES</p> <ul style="list-style-type: none"> ▶ Use of 'closed loops' to re-use material waste for the generation of energy ▶ The production of semi-finished and finished materials with use of renewable raw materials ▶ Consistent use of environmentally friendly materials ▶ The sale of environmentally friendly products and services ▶ Safe disposal of hazardous waste materials ▶ The use of a washing machine for paintbrushes and other working appliances ▶ Waste sorting ▶ The recycling of packaging <ul style="list-style-type: none"> ▶ Use of solar power ▶ Introduction of additional, environmentally friendly, products to the product range ▶ The sale of environmentally friendly products and services ▶ Use of biodegradable detergents ▶ Installation of energy-efficient light bulbs ▶ The use of recycled paper ▶ Waste sorting ▶ The safe storage and disposal of hazardous materials ▶ The offering of discounts for environmental and social groups ▶ Oil separation ▶ Recycling of oil cloths <ul style="list-style-type: none"> ▶ Compliance with environmental regulations ▶ Waste sorting ▶ Use of energy-efficiency measures within the premises ▶ Oil separation 		
<p>CASE-STUDY START-UP COMPANIES IN THIS CATEGORY, BY INDUSTRY</p> <ul style="list-style-type: none"> ▶ Start-up 1, carpentry ▶ Start-up 3, paint contracting ▶ Start-up 7, producer of semi-finished and finished materials <ul style="list-style-type: none"> ▶ Start-up 8, wholesale distribution of domestic appliances ▶ Start-up 9, wholesale distribution of solar power appliances ▶ Start-up 5, car sales and garage services ▶ Start-up 10, software service provider <ul style="list-style-type: none"> ▶ Start-up 2, carpentry ▶ Start-up 6, manufacture of electrical engineering equipment ▶ Start-up 4, car sales and garage services 		

Note: for more details of start-up companies, see Table 1.

Table 2 DIFFERENT CATEGORIES OF ECOLOGICAL ORIENTATION AMONG START-UP ENTERPRISES

A very noticeable difference between the three groups of start-ups is to be seen in the attitudes of the respective start-up entrepreneurs. Eco-dedicated entrepreneurs differed from the other two groups in the significance they attached to ecological issues. Their high level of environmental consciousness was reflected in expressed opinions and attitudes. They consistently alluded to their responsibility to the environment and its conservation for following generations, stating:

Above all, for the following generation, we have to take care. If we want to leave something to them, we now have to think of something (Source 4).

and

Ecology is absolutely important (Source 5).

All persons in this group pointed out that their environmental awareness had been developed since childhood from within their families. Their interest in ecological topics led to an active gathering of information particularly related to their area of business operations. As a result, their knowledge about how to act in the new venture in order to improve their environmental performance was much greater than was the case in the two other groups.

Ecological considerations played an important role from the very beginning and remained an integral part of each of their businesses, but, despite their environmentally friendly attitudes, these entrepreneurs were still aware of the limits of ecological issues as a business start-up tool. In the interviews, they repeatedly pointed to the necessity to focus on business essentials within the start-up process:

First of all, in the start-up process, it is important to have a goal and get through . . . If one can, somehow, consider environmental issues as applicable to the products or services, one ought to do so (Source 5).

Everyone should consider environmental issues within the start-up process . . . but the ones who are not in the position to do so should just leave it, because if they desperately tried they would not survive (Source 6).

Starting a new business venture with an extensive ecological orientation is not easy and often is even more difficult than starting a conventional business enterprise. Only the firm convictions of the entrepreneurial individual leads to this kind of endeavour. As the individual is the most important factor in creating a sustainable new venture, starting points for intervention are limited. In turn, it might be promising to encourage and support those ecologically minded individuals to convert their convictions into sustainable start-ups. Eco-dedicated start-ups take higher risks and face more market resistance than do conventional start-ups; therefore, they are in need of special advisory and financial support.

Eco-open start-ups

In eco-open start-ups, goods, services and operational procedures are not designed according to environmental needs. Entrepreneurs in this group deal only with selected environmental issues. They either enlarge their range of products or services with environmentally acceptable features in order to target an additional customer segment or solve ecological problems through special measures. However, eco-open start-up entrepreneurs often reject the adoption of more eco-friendly measures because of the assumed higher costs:

Economic considerations are more relevant than saying, 'I have to think ecologically in the first place', because mostly this is more expensive (Source 3).

Entrepreneurs in this group expect that additional measures do not fit easily with existing operating procedures. In general, they assess the feasibility of environmental improvements to business practices as being limited. Moreover, they tend not to anticipate market opportunities that would encourage them to opt for more environmentally sound business practices. For example, a wholesale electrical appliance trader in our study (start-up 8) offered a so-called 'eco-line' in its range of white goods in addition to conventional goods. These eco-line products save energy and water. The disposal of used products was secured by contracts with waste disposal companies that were required to take and dispose of these appliances. However, further eco-friendly measures did not seem to be practical to the entrepreneur.

As with the eco-dedicated entrepreneurs, eco-open entrepreneurs attached importance to environmental issues. Some start-up entrepreneurs even indicated that their environmental awareness was high. They talked about responsibility to the environment and the necessity to maintain resources for future generations. Although they knew something about environmental topics, they did not communicate these issues as strongly as did the entrepreneurs in the first group; their ecological knowledge seemed to be restricted to their immediate field of work.

Analysis of the start-up processes in this group shows no consistent importance is attached to ecological considerations. According to these entrepreneurs, the implementation of environmentally sound business practices in the start-up process depends primarily on the industry in which the new venture is to operate. As a consequence, ecological measures appear only selectively during start-up. As one entrepreneur in this group stated:

In my opinion, the topic ecology doesn't play an important role for business founders, at least as long as you cannot make use of it in the industry. Business issues have to be considered first (Source 7).

For this group, the impetus to include environmental measures is often external (e.g. pressure from customers and suppliers). In one case, a customer suggested that the roof of the business premises was suitable for installation of solar panels. This suggestion and subsequent financial support by a public programme led to the use of solar energy in the start-up. Asked why they did not consider ecological issues in the start-up process to a greater extent, the eco-open entrepreneurs often answered that they had not thought of it. Furthermore, they complained that there was a lack of information on this subject:

It really wasn't mentioned anywhere (Source 3).

This seems to confirm the findings of Schaper (2002), who analysed Western Australian pharmacies in order to find out whether there are factors that can be used to predict the level of environmentally responsible business behaviour among SMEs. In a range of nine possible factors he found that only two variables had a significant relationship with the level of environmental performance: time resources, and the level of environmental information available to business owners.

The group of eco-open start-ups seems to be a promising target for implementing more eco-friendly measures in new business ventures. They are at least partially open to considering environmental issues and are prepared to accept suggestions for applying more sustainable business practices.

Eco-reluctant start-ups

Start-ups that are assigned to this group deal with environmental issues only when external requirements (especially regulations or the specific demands of customers) force them to do so. These entrepreneurs deal with questions of ecological conservation when they realise they have a problem, such as when they come into conflict with environmental authorities.

In contrast to the two other groups, eco-reluctant start-up entrepreneurs made hardly any statements on the importance of ecological issues. In one case the entrepreneur refused to answer the question about his personal opinion on this topic. In his opinion, environmental requirements and the problems they presented through the authorities were simply harassment. For these entrepreneurs, other problems such as job creation, the order book and cost savings were much more important than environmental issues:

Before we think about ecology we should think about how we can get more industrial plants to our region, in which people can work (Source 8).

What is important to me is that I have to see how to get work. This is most important to me. If you can combine this with ecology then it is okay. But I'm not one who can try things only along this path, because this will not be enough; you cannot exist on it (Source 2).

Ecological considerations only occur arbitrarily at isolated points in time, when there is contact with authorities that force the entrepreneurs to act. In these cases, conservation measures are assessed as additional burdens within the start-up process. However, the eco-reluctant entrepreneurs do not completely object to eco-friendly business practices. Like their fellow entrepreneurs in the eco-open group, some of them reported that they would have done more had they thought of it.

Since eco-reluctant start-up entrepreneurs do not believe that it is necessary to operate in a more sustainable manner, it is probably difficult to find starting points for sustainable intervention in this group. Information about possible measures and financial support for specific environmental conservation measures might help them to reach at least a minimal standard of performance. Overall, legal requirements appear to be the major means of forcing these entrepreneurs to adopt more ecologically sound business practices.

Conclusions

At the beginning of this project it was assumed that all start-ups were fundamentally open to adopting sustainable business practices. However, the results show that it is not so straightforward. There are still several barriers to sustainability in the start-up process. Some of the key issues facing new entrepreneurs are as follows:

- ▶ First, in our sample, several entrepreneurs in the eco-open as well as in the eco-reluctant start-up groups complained about a lack of information. Clearly, the provision of more information directly to business founders could help in the adoption of more sustainable business practices.
- ▶ Second, the level of knowledge that business advisers have about ecological issues, and their willingness to discuss this with their clients, is also important in creating sustainable new ventures. In particular, there is a need to focus on business advisers that come into contact with entrepreneurs at an early stage of the start-up process.
- ▶ Third, many start-up entrepreneurs are not fully aware of the potential market opportunities that might exist for environmentally friendly businesses. Therefore, it is necessary to draw their attention to successful best-practice examples in their respective industries. The willingness to follow successful examples might be more promising with start-ups than with established business enterprises.
- ▶ Last, the role of public funding in promoting sustainable enterprises is often overlooked. It was clear in the study that finance was an ongoing problem for start-ups, especially for green firms that encountered extra costs as a result of their

commitment to sustainable business practices. It seems reasonable that government funding schemes for new-firm ventures should make extra allowance for such projects, especially since (on the other side of the ledger) they help reduce the overall cost of public environmental protection and clean-up.

As many of the interviewees (both business advisers and entrepreneurs) pointed out, ecological considerations in the start-up process depend on the industry in which the new venture operates. It is obvious that different industries have different impacts on the environment. However, our analysis also shows that the approach to ecological issues can even differ to a large extent within the same industry. For example, in our study the two carpentry start-ups differed widely in their ecological approaches. One of them was classified as an eco-dedicated start-up and the other as an eco-reluctant start-up. This indicates that, apart from the industry itself, the attitude of the entrepreneur is important in determining whether or not ecological operating measures are put into practice. In our analysis, the so-called gap between the environmental attitudes of the entrepreneur and the environmental behaviour of his or her small firm (Tilley 1999) was observed only in the group of eco-open start-ups. Here, some entrepreneurs stated that their environmental awareness was high, but this attitude did not result in more greener business practices. In the other two groups the level of environmental performance of the start-ups broadly corresponded to the environmental attitudes of the entrepreneurs.

To sum up, the results of our study provide an insight into the intricacies associated with sustainable considerations in business start-up processes in Germany. There are starting points for ecological intervention in the entrepreneurial process in order to create an increasingly sustainable business culture. Much remains to be done, however, to develop greater sustainability in the field of start-up entrepreneurship. This project and its results are just a preliminary step along that road.

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Sources

- Source 1: interview with a start-up advisor, 20 June 2001, west Germany.
- Source 2: interview with an eco-reluctant entrepreneur, start-up company 2 (Table 1), carpentry, 23 April 2002, south Germany.
- Source 3: interview with an eco-open entrepreneur, start-up company 10 (Table 1), software service provider, 22 February 2002, west Germany.
- Source 4: interview with an eco-dedicated entrepreneur, start-up company 1 (Table 1), carpentry, 15 March 2002, west Germany.
- Source 5: interview with an eco-dedicated entrepreneur, start-up company 3 (Table 1), paint contracting, 13 March 2002, west Germany.
- Source 6: interview with an eco-dedicated entrepreneur, start-up company 7 (Table 1), producer of semi-finished and finished materials, 5 March 2002, east Germany.
- Source 7: interview with an eco-open entrepreneur, start-up company 8 (Table 1), wholesale distribution of domestic appliances, 5 April 2002, west Germany.
- Source 8: interview with an eco-reluctant entrepreneur, start-up company 4 (Table 1), car sales and garage services, 14 May 2002, east Germany.

