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MULTIOBJECTIVE FIRMS AND THE MANAGEMENT OF TRADE-OFFS

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## ABSTRACT

The paper shows how firms can have as their objectives various combinations of profit, "doing no harm", and "doing good" that may be realized through a variety of vehicles. Further, it shows how business objectives can be related to one another following the principles of hierarchy, instrumentalism, constraint or dynamic priority. The paper draws all this together to build types of objective functions that instruct managers in the face of trade-off situations between multiple objectives.

Keywords: corporate responsibility, trade-offs, multiple objectives

## INTRODUCTION

There are increasing calls for business to integrate environmental and social objectives along with traditional economic objectives. However, much of the existing literature and managerial guidance there is on such integration tends to focus on so-called win-win situations where these objectives are mutually reinforcing. Yet, not all situations are win-win situations, wherefore the discussion on how to combine multiple objectives in management needs to be broadened (Mackey et al., 2007; Windsor, 2001; Young & Tilley, 2006): after asking whether and when there are win-win situations, we also need to ask what to do in the presence of trade-offs (Lankoski, 2007a). If a firm is truly to embrace other objectives besides profit maximization, it must also be able to manage eventual trade-off situations (Margolis & Walsh, 2003), but the management of trade-offs is an overlooked area in the relatively large body of literature on corporate responsibility, and one that continues to pose practical challenges to managers.

To address this gap, this paper examines the approaches that can be taken to trade-offs in multiobjective firms. How trade-offs are managed depends on the objectives and priorities of the firm (see Jensen, 2002). Thus, a prerequisite for understanding management in the face of trade-offs is a profound understanding of business objectives. This entails going beyond simple listing of objectives to specifying the full objective function of the firm: the combination of objectives and the relationships of objectives to one another.

Accordingly, this paper takes four steps as follows. Chapter 2 discusses multiple objectives of firms. It structures business objectives in terms of profit, "doing no harm" and "doing good" rather than in the traditional terms of profit, environmental responsibility and social responsibility, but the key argumentation of the paper is equally applicable within the traditional approach. Chapter 3 outlines possible combinations of the multiple objectives, and Chapter 4 covers alternative relationships between business objectives. Finally, Chapter 5 draws together the preceding chapters to arrive at overall objective functions for different types of multiobjective firms. The paper employs mathematical notation because the use of mathematics adds structure, forces one to be precise, and offers a parsimonious, yet accurate way of articulating relationships, and can thus be an effective tool for theory development in management (Lévesque, 2004). A concluding discussion ends the paper.

## MULTIPLE BUSINESS OBJECTIVES

### The profit objective

Mainstream economic theory suggests that the objective of firms is to maximize profit in order to create wealth to owners. This view is strongly institutionalized in current business reality: managers feel that they are governed by such rules (Rose, 2007), the profit-maximization paradigm permeates management education (Galbreath, 2006) and has also found its way into legislation in many countries.

However, the view of profit maximization as the sole business objective has been called into question on theoretical, ethical and practical grounds. From a theoretical point of view, the profit maximization perspective is based on welfare economics that rests on Adam Smith's work in the late 18<sup>th</sup> century and an utilitarian moral philosophy, and that argues that the welfare of society is maximized when firms maximize their profit (for a discussion, see e.g. Windsor, 2006). The problem is that this argumentation rests on very strong assumptions, some of which have never been

met, such as the absence of externalities, and some of which were perhaps met in Adam Smith's time but are no longer met, such as capital immobility (see e.g. Korten, 2004). The theoretical response of economics to this criticism is government intervention and not firms undertaking other objectives besides profit maximization. Like the two blades of a pair of scissors, profit maximization by firms and optimal government intervention are supposed to work in tandem. But, in practice, optimal government intervention is not always present, and thus following the theoretical prescription of profit maximizing without the other part of the prescription, that of optimal government intervention, may result in consequences that do not maximize the welfare of society.

From an ethical perspective, economics and management was originally also about contributing to the good of society, but this feature has largely been lost on the way (Walsh et al., 2003). Carroll (1991, 40-41) writes that the principal role of a business organization was historically "to produce goods and services that consumers needed and wanted and to make an acceptable profit in the process. At some point the idea of the profit motive got transformed into a notion of maximum profits, and this has been an enduring value ever since." However, it has been argued that no ethical theory can support a paradigm where profit maximization is the sole objective of firms (Kolstad, 2007). Even the much-quoted article by Friedman (1970) which states that the only social responsibility of business is to make profit "loses its punch" (Carroll, 1991) when one acknowledges that Friedman also said that the profit must be made conforming to the basic rules of society, including those embodied in ethical custom. In fact, firms are still experiencing that their stakeholders have not abandoned the original idea about contributions to the good of society, and firms are increasingly demanded by their stakeholders to embrace other objectives besides profit maximization. According to a recent survey, 84% of executives worldwide feel that their companies should pursue not only shareholder value but also broader contributions to the good of society, but most admit being ineffective at managing this (McKinsey, 2006).

Finally, profit maximization as the sole management principle is limited as a perspective also because it does not correspond to the practice in all firms. Research shows that entrepreneurs do have other objectives besides profit maximization (e.g. Amit et al., 2000; Cohen et al., 2008; Douglas & Shepherd, 2000; Spence & Rutherford, 2001). In particular, as a practical manifestation of multiobjective firms, social enterprises now exist in many countries and across a variety of economic sectors, and are inviting increasing attention (Monllor, 2007). They are enterprises with a dual goal: to promote some common good (such as employment, poverty alleviation, environmental quality, improved health etc.), but through the market mechanism and often in a profitable manner. The most famous example of such firms is perhaps the 2006 Nobel laureate Grameen Bank; for descriptions of some other social enterprises, see, for example, Dorado (2006) and Thompson and Doherty (2006). Thus, regardless of what we think about the arguments for and against the profit-maximization paradigm, it remains a fact that enterprises with multiple objectives already exist.

Despite the criticism presented above, profit is still a legitimate business objective among others, and making profit is to an extent a prerequisite for the continued existence of the firm, even if maximizing profit is not necessarily so. Note that the profit maximization assumption has also been questioned on the grounds that because of uncertainty, imperfect information and cognitive limits, managers are not able to maximize profit ex ante (see e.g. Godfrey, 2005; Mackey et al., 2007). Such bounded rationality, as acknowledged by the "low-church" resource-based theorists (see Bowen, 2007) does not present a problem for the argumentation in this paper. In line with Jensen (2002), we can think about business objectives in terms of "profit-seeking" and so on, if the maximizing language feels uncomfortable.

## The non-profit objectives

The challenge for firms that originates from the above is to incorporate other, corporate responsibility -related objectives in their management along with the profit objective. However, thinking about business objectives in terms of profit on the one hand and corporate responsibility on the other is of limited use, because corporate responsibility is such a broad metaconstruct (see e.g. Rowley & Berman, 2000). Corporate responsibility covers tens of widely diverse issues: there are appeals for companies to get involved in “ameliorating malnutrition, infant mortality, illiteracy, pollution, pernicious wealth inequality, and other social ills” (Margolis & Walsh, 2003: 271). Although the issues that originate from the cornucopia of corporate responsibility all involve relationships that business has with its surroundings, they may also differ in important ways.

The common fashion to frame non-profit objectives of business is to consider environmental responsibility and social responsibility separately, as in the triple bottom line approach first popularized by Elkington (1997). In this approach, environmental responsibility covers impacts on the natural environment, and social responsibility covers impacts on people and their communities. However, environmental and social responsibility are “conceptual siblings” (Norman & MacDonald, 2004), and fundamental, management-relevant differences may not arise from the content of the non-profit objective being environmental or social in nature. For instance, Friedman’s (1970) arguments against managers undertaking corporate responsibility activities apply equally strongly to both these responsibility domains. Hence, while the triple bottom line approach does play an important role in outlining the content area of corporate responsibility, it may not be the most useful structure for analysing the management of trade-off situations in multiobjective firms. Instead, corporate responsibility can be conceptually divided into two different objectives: that of “doing no harm” and that of “doing good” (see Jones, 2005; Lankoski, 2007b; RESPONSE, 2007). While doing good refers to promoting the positive outcomes of business (such as employment), doing no harm means reducing the negative outcomes of business (such as pollution).

Doing no harm and doing good are in many relevant ways asymmetrical concepts. First, the moral case for a firm's responsibility may be perceived differently depending on the firm's role in the creation of the environmental or social problem. In the case of doing no harm, moral responsibility arises directly from causal responsibility, but with doing good, moral responsibility rests on the general duty of beneficence, provoking a question of where is the upper limit (Margolis & Walsh, 2003; Smith, 2008). Second, the undertaking of expanded social roles by firms has been criticized on the basis that this would constitute legitimizing their increased power over societal matters (see Halme, 2007). These problems may be particularly strong when a firm is undertaking activities and roles that go beyond addressing its own harmful impacts. Third, the business case for corporate responsibility and thus the potential for and nature of trade-offs may differ based on whether we are talking about doing no harm or doing good (Lankoski, 2007b). This could be explained by a negativity bias, where negative actions weigh more heavily than positive actions (Folkes & Kamins, 1999), and by differing stakeholder judgments of what are the moral obligations of the firm to society (Schuler & Cording, 2006). Fourth, doing no harm and doing good also appear different in light of the criticism, discussed above, that profit maximization does not maximize social welfare if market failures such as externalities are present. For example, harmful environmental impacts of business activities are examples of negative externalities, and the call for internalizing those externalities (doing no harm) up to the socially optimal level thus receives justification from economic theory.

Negative outcomes of business, those that doing no harm seeks to avoid, may occur in various environmental and social domains, such as environmental quality, labour conditions, or general human rights, and relate to both the products and production processes of a firm. Harmful environmental impacts may arise in firms' own production processes, in supply chains and during the use and disposal of products, as a consequence of the use of raw materials, land and energy as inputs and through the creation of emissions, effluents and wastes. In terms of labour conditions, issues of concern may relate to employment security, child labour and forced labour, appropriate wages and benefits, and employee health and safety, for example. Further examples of areas where business may have negative outcomes relate to unfair marketing practices, product health and safety, and questions of the rights of indigenous peoples and local communities. Even though reducing these potential harms is a positive deed by a firm, it does not belong to the category of doing good but to that of doing no harm.

Several vehicles are available to do good in the environmental and social domains (see also Clark & Ucak, 2006). Besides the wealth created to owners, the positive impacts of business include making available necessary goods and services, development and transfer of technology and skills, and distributing wealth to employees, suppliers, customers and society. Wealth distribution to society occurs through taxes and payments and through voluntary, philanthropic activities. Thus, the firm can do good through the following, mutually non-exclusive vehicles: donations, operations, and products (see also Schroeder, 2002). From a management perspective, these different vehicles result in different practical strategic objectives and thus have different management implications.

**Donations.** The term donations should here be understood broadly to denote cases where a firm aims at doing good through voluntarily giving away its money, time, expertise, product or service. With donations, the firm is undertaking or supporting "extra" activities that are usually outside its core business (Halme & Laurila, 2008), although approaching donations more strategically may bring them closer to the firm's area of business (Porter & Kramer, 2002). When the vehicle for doing good is donations, the practical strategic objective for the firm does not really deviate from the profit-making logic, as the firm needs to create wealth and resources in order to be able to donate them. In other words, philanthropy is not about changing the objective of wealth creation; it is about the allocation of the wealth thus created (see also Windsor, 2006).

**Operations.** Another vehicle for a firm to do good is by virtue of running its operations. Even if the firm is making little or no profit, the workers obtain employment, the suppliers obtain business, society obtains taxes and payments, and technologies and skills are developed and transferred when the firm is carrying out its activities. These may well be explicit objectives for firms. For example, the development of social enterprises that aim to provide work integration for the disadvantaged and disabled is an important trend in Europe (see Spear & Bidet, 2005). For firms whose vehicle for doing good is operations, the practical strategic objective becomes continued existence and possibly maximizing the scale of the operation.

**Products.** The third vehicle for a firm to do good is through its very product or service (see also Halme & Laurila, 2008). As discussed, to provide necessary goods and services was originally a central role of business. For those firms that have doing good through their product or service as an explicit objective, the practical strategic goal becomes wide use of the product or service, measured through sales volume (in non-monetary terms) or the percentage of target population with access to the product or service. In cases where the positive impact of the product or service is not absolute but relative, based on the product or service replacing a less sustainable alternative, there is a fine line between whether these cases can be regarded as doing good or whether they should be regarded

as doing less harm from the perspective of the whole product chain. If such cases are considered instances of doing good, the appropriate way to consider “wide use” is through market share.

## COMBINATIONS OF OBJECTIVES

Figure 1 shows how the objectives of a firm may consist of one or more of the following: profit, doing good and doing no harm. It illustrates how these objectives may or may not overlap, corresponding to win-win and trade-off situations between the objectives (see also Enderle and Tavis, 1998). For example, the objectives of profit and doing no harm in terms of environmental damage overlap in those environmental win-win situations where reducing pollution and waste result in direct cost savings for the firm. Or, the objectives of profit and doing good overlap in those base-of-the-pyramid win-win situations where a new product innovation helps to satisfy basic needs of large, poor populations and also opens up new markets and increased sales for the firm.

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Insert Figure 1 about here

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With the help of Figure 1, it is easy to see how certain developments or activities by the firm or by policy making move entire circles in the figure, thus affecting the respective sizes of the win-win and trade-off areas. For example, Windsor (2006) notes that the notion of win-win may currently be stretching with expanding stakeholder expectations; this would mean an increased overlap between circles in Figure 1. Certain other developments or activities, in turn, increase the probability that existing win-win areas will indeed be identified and exploited. Note also, interestingly, that a firm with a do good objective, no matter how noble, is not necessarily automatically strong in terms of the do no harm objective: for example, an environmental technology product may be produced with a polluting process, or the labour conditions may be objectionable in a firm making important philanthropic contributions for social purposes.

A firm can maintain one, two or three of the objectives in Figure 1. (Recall that a firm can choose one or more from the different harms to avoid and from the different vehicles for doing good. In addition to the triangular trade-offs between the general objectives of profit, doing no harm and doing good, there can thus also be internal trade-offs between individual harms to avoid and individual vehicles for doing good. The discussion in this paper, however, stays at a more general level for clarity.) If the firm decides to aim at profit only, its targeted outcome area is ABCD in Figure 1. Thus, a firm that attempts to maximize profit may sometimes also do good, do no harm, or both at the same time, but there are also instances where the other two possible objectives are not met. The objective function for such a firm is  $max p$ . Similarly, for a firm whose only objective is to do good, the objective function is  $max g$  and the targeted outcome area is CDFG. This firm may or may not create a profit, and it may or may not avoid the creation of environmental or social harm while doing good. A firm whose sole objective is to do no harm has  $min h$  as its objective function and BCEF as the targeted outcome area. However, doing no harm makes little sense as the sole objective of a firm and is unlikely to exist alone in practice, since the most straightforward way to achieve this objective would be the non-existence of the business.

For firms that subscribe to more than one objective in Figure 1, the targeted outcome area becomes more limited. The corresponding targeted outcome areas and the elements in the objective functions with different combinations of objectives are listed in Table 1. With the simultaneous objectives of profit and doing good, the targeted outcome area is CD. The objective function would need to



contain two elements:  $max p$  and  $max g$ , but how such multiple elements may be combined in one objective function will be discussed separately later. If the firm subscribes to profit and doing no harm, its targeted outcome area is BC and the elements in the objective function are  $max p$  and  $min h$ . With doing good and doing no harm as objectives, the targeted outcome area is CF and the objective function contains both  $max g$  and  $min h$ . Finally, when all three objectives are subscribed to simultaneously, the targeted outcome area is C and the objective function contains all three elements of  $max p$ ,  $max g$  and  $min h$ .

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Insert Table 1 about here

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However, the targeted outcome area cannot always be reached. Even if the overall mission of the firm is set up so as to satisfy multiple objectives, there may be individual decision-making situations where trade-offs are present. How a firm with multiple objectives deals with trade-offs thus depends on how it prioritizes and relates the objectives to one another. For example, producing a certain medical product to the market may in general be profitable and serve the common good at the same time. But, where trade-offs are present, two firms may make different decisions in questions such as pricing, distribution, positioning or product characteristics if the priority objective for one firm is to maximize profit and for the other firm to do good through the product and thus to ensure its wide availability.

## RELATIONSHIPS BETWEEN OBJECTIVES

Whenever a firm has more than one objective, the question arises whether the objectives are mutually supportive; in other words, whether the objectives are monotone transformations of each other so that improving one objective always also improves the other (see Jensen, 2002). If this is the case, there is no decision-making problem since both objectives can be achieved simultaneously (see also Kolstad, 2007). In terms of Figure 1, this would correspond to a complete overlap between circles.

The association between profit and various aspects of corporate responsibility has been widely debated and researched since the 1970's (for a review, see e.g. Margolis & Walsh 2003). It now seems that this association is not monotonic but rather takes an inverted U-shaped form which, moreover, is case-specific and may shift with time (see e.g. Lankoski, 2007a). Therefore, cases exist where trade-offs enter the picture and compromises must be made between the objectives of profit, doing good and doing no harm.

Managers must have a criterion for making trade-offs between multiple objectives (Enderle & Tavis, 1998; Jensen, 2002). The appropriate criterion depends on the relationship between the multiple objectives. In fitting together multiple objectives, firms can choose to follow different principles that determine the relative priority of the objectives. Table 2 lists such alternative ways of relating two objectives to one another.

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Insert Table 2 about here

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Equality. One alternative is to maintain that both objectives have equal priority for the firm. Truly, it is possible for two objectives to be incommensurable and of equal value. Nevertheless, in trade-off situations, the firm must have some other way than equality for relating the objectives to one another, because it is "logically impossible to maximize in more than one dimension at the same

time" (Jensen, 2002: 238). If such a relationship has not been defined in advance, it will be defined case-by-case in each practical decision-making situation, but the need for setting the priority cannot be escaped. The risk of leaving managers without a guiding rule for trade-off situations is that it leads to impromptu decision making, for example according to personal preferences (see also Jensen, 2002). Therefore, we will omit equality from our ensuing analysis.

**Hierarchy.** Another alternative for the firm is to decide that one objective has priority over the other, as in lexicographic ordering (see e.g. Ferguson, 1965). In this case, the more important objective is satisfied first, whereafter the less important objective is satisfied to the extent possible without affecting the outcome of the first objective. Indeed, corporate responsibility is often presented through Carroll's (1979, 1991) pyramid where economic responsibilities enjoy the priority status and legal, ethical, and philanthropic responsibilities follow in a clear hierarchical order. Studies have even attempted to empirically ascertain hierarchical weightings for these different responsibility components (see e.g. Pinkston & Carroll, 1996). A hierarchical approach to relationships between multiple objectives seems to fit with the current situation with many "conventional" firms with strong corporate responsibility: responsibility is a genuine business objective, but nevertheless one that is subordinated to the profit objective. However, the priority can run both ways, and a firm may also consider profit as only the secondary objective.

**Instrumental.** If the relationship between two business objectives is instrumental, one objective (the instrumental objective) is a means for achieving the other objective (the end objective). Thus, how and to what extent the instrumental objective is being pursued depends on how it serves the achievement of the end objective. This describes well the win-win -focused approach of many firms to corporate responsibility, where corporate responsibility improvements are motivated by the beneficial impacts they might have on the economic success of the business (see Donaldson & Preston, 1995; Kolstad, 2007). As above, profit is not necessarily always the end objective, but can also be the instrument for achieving some other end objective. The instrumental approach has been criticized by noting that different realms of corporate responsibility have a certain autonomy, which means that they cannot be entirely instrumentalized (Enderle & Tavis, 1998).

**Constraint.** With a constraint-type relationship between two objectives, one objective is satisfied so that the outcome for the other objective stays within a preset range. Any type of objective can be regarded as a constraint by the firm. For example, a firm may decide on the social impact it wishes to achieve (e.g. provide a certain number of people with access to its product) and then maximize profit within these limits. Or, a firm may decide on the economic outcome it wishes to achieve (e.g. full cost recovery or a certain return on investment) and then maximize the social impact within these limits. In particular, the do no harm objective that we noted to be unlikely to occur alone may be a natural candidate for constraint-type relationships. Being simple and practical, the constraint approach is probably quite common in firms.

**Dynamic priority.** When the relationship between two objectives is of the dynamic priority type, which objective is given priority varies from one decision-making situation to another based on preset criteria. Consequently, decision-making may seem improvised to the outside, but in fact this is not the case. For the sake of developing our argument, let us assume in this paper that the preset criteria would concern promoting sustainability. This means that the firm would give priority to the issue with the most critical sustainability situation in that place and time. Thus, a firm could, for example, prioritize doing no harm in a situation where the carrying capacity of nature is about to be irreversibly exceeded, doing good where there is an imminent humanitarian catastrophe, and profit if the firm is threatened by economic failure. In effect, this approach transforms the multiobjective problem into a new single-objective problem, where the new single objective to be maximized is

sustainability, which depends on the values of the other, multiple objectives. Furthermore, instead of attempting to maximize sustainability, a more tangible way of putting the problem may be to minimize the sustainability gap. The dynamic priority approach is interesting and flexible because it allows situation-specific considerations, but it is likely to involve difficult assessments in practice.

## OBJECTIVE FUNCTIONS AND THE MANAGEMENT OF TRADE-OFFS

We have until now seen how firms can have as their objectives various combinations of profit, doing no harm and doing good that may be realized through a variety of vehicles. Further, we have seen that where more than one objective exist, they can be related to one another in various ways and that in some of these alternative ways opposite possibilities exist for organizing the objectives. Next, we can combine these perspectives to build objective functions for different multiobjective firms (Table 3). These objective functions instruct the managers how to deal with multiple objectives that may involve trade-offs. Please recall that we are using mathematical notation only because mathematics is a concise and precise language for expressing complex relationships, not to suggest that managers would actually conduct formal optimization calculations.

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Insert Table 3 about here

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For example, let us examine firms that have as their objectives both profit and doing good. If the relationship between these objectives is hierarchical, the objective function, expressed formally in Table 3, dictates the firm to “maximize profit, then do good as much as possible without adversely affecting profit”, if profit is priority number one for the firm (cell 1Aa). If profit comes only second in the priority hierarchy, the objective function dictates the firm to “maximize doing good, then make as much profit as possible without adversely affecting the good done” (cell 1Ab). If the relationship between the objectives is instrumental, the objective function tells the manager to “do good in order to maximize profit” (cell 1Ba) or to “make profit in order to maximize doing good” (cell 1Bb), depending on which objective is the instrumental one and which one is the end objective. In the case of a constraint-type relationship, the maxim goes “fulfil preset doing good objective, then make as much profit as possible without adversely affecting the good done” (cell 1Ca), or vice versa, “fulfil preset profit objective, then do good as much as possible without adversely affecting profit” (cell 1Cb). If the firm follows the dynamic priority approach, the decision rule is to “give priority to profit or doing good, whichever contributes best to reducing the sustainability gap in that particular situation” (cell 1D).

The remainder of Table 3 can be interpreted in a similar manner, with one special instance to note: an instrumental relationship between the objectives of doing good and doing no harm (cell 3B) may not be applicable since the objectives may not lend themselves as instruments for achieving each other. For firms that subscribe to all three objectives of profit, doing good and doing no harm, the logic remains similar but the picture is more complicated, since with three objectives, several priority rankings are possible and more than one relationship type may prevail at the same time (cells 4A-C). To give just one example, Table 3 provides the objective function for a firm that has two hierarchical objectives: doing good (priority objective) and profit (secondary objective), and doing no harm enters the equation in a constraint-type relationship.

## DISCUSSION

This paper contributes to an improved understanding of how organizations with multiple objectives can approach eventual trade-offs among those objectives. It argues that to understand management in the face of trade-off situations, an awareness of business objectives is required that goes beyond mere listing of desirable objectives. For this purpose, the paper developed alternative objective functions that outline the resulting approach to trade-offs in a multiobjective firm. This paper utilises a new way of structuring the non-profit objectives of business, but the argumentation presented is also applicable within the traditional triple bottom line context.

With the help of the paper we can see how a great number of alternative approaches to trade-offs exist. Firms can entertain different sets of objectives that may be realized through a variety of vehicles and related to one another in different ways, which results in different trade-off behaviour. Consequently, there is no single piece of management advice that would apply to all organisations in their dealings with trade-off challenges presented by corporate responsibility. Although the paper does not imply that firms need to produce formal objective functions, clarifying and explicating the implicit combination of objectives of the firm and the relationships of these objectives to one another would guide the decision-making task of managers in trade-off situations.

We can now also identify more clearly types of multiobjective firms and understand their differences in the face of trade-offs. The study of corporate responsibility and of social enterprises has suffered from the fact that different types of firms may have similar-looking outcomes, wherefore their boundaries have been somewhat blurred (see e.g. Peredo & McLean, 2006): "conventional" enterprises may have strong environmental responsibility, social enterprises may pollute, non-profit organizations may have an income-creating leg, profit-maximizing organisations may undertake serious philanthropic activities, and the products of "conventional" firms may satisfy important social needs. This paper, however, is not based on such external manifestations, but on the internal driving forces of the firm that are fundamental to its decision-making and management. Therefore, with the help of this paper, we can draw these blurred boundaries more firmly.

The examination of trade-offs presented in this paper contributes to theoretical literature on two levels. On the one hand, both win-win and trade-off situations need to be addressed to achieve a full picture of corporate responsibility, but research efforts have so far focused heavily on win-win outcomes. On the other hand, the paper takes a step forward in detailing the complex spectrum of objectives on the basis of which organizations may be run. Multiobjective firms have not been adequately covered by existing theory, and calls for multiple bottom-line management have suffered from a lack of a strong analytical foundation. Removing the conventional assumption of profit maximization as the sole management principle opens up new horizons for the development of new, more nuanced theoretical approaches to management. The contribution of this paper is in the groundwork it lays for such theory development through the systematic and analytical identification of different types of multiobjective firms.

## REFERENCES

- Amit R, MacCrimmon KR, Zietsma C. 2000. Does money matter? Wealth attainment as the motive for initiating growth-oriented technology ventures. *Journal of Business Venturing* **16**: 119-143.
- Bowen F. 2007. Corporate social strategy: Competing views from two theories of the firm. *Journal of Business Ethics* **75**: 97-113.
- Carroll AB. 1979. A three dimensional model of corporate performance. *Academy of Management Review* **4**: 497-505.
- Carroll AB. 1991. The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons* July-August: 39-48.
- Clark CH, Ucak S. 2006. *RISE for-profit social entrepreneur report: Balancing markets and values*. Columbia Business School.
- Cohen B, Smith B, Mitchell R. 2008. Toward a sustainable conceptualization of dependent variables in entrepreneurship research. *Business Strategy and the Environment* **17**(2): 107-119.
- Donaldson T, Preston LE. 1995. The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review* **20**(1): 65-91.
- Dorado S. 2006. Social entrepreneurial ventures: Different values so different process of creation, no? *Journal of Developmental Entrepreneurship* **11**(4): 319-343.
- Douglas EJ, Shepherd D. 2000. Entrepreneurship as a utility-maximizing response. *Journal of Business Venturing* **15**: 231-251.
- Elkington J. 1997. *Cannibals with forks: The triple bottom line of 21st century business*. Capstone Publishing: Oxford.
- Enderle G, Tavis LA. 1998. A balanced concept of the firm and the measurement of its long-term planning and performance. *Journal of Business Ethics* **17**: 1129-1144.
- Ferguson CE. 1965. The theory of multidimensional utility analysis in relation to multiple-goal business behavior: A synthesis. *Southern Economic Journal* **32**(2): 169-175.
- Folkes V, Kamins M. 1999. Effects of information about firms' ethical and unethical actions on consumers' attitudes. *Journal of Consumer Psychology* **8**(3): 243-259.
- Friedman M. 1970. The social responsibility of business is to increase its profits. *New York Times Magazine* September 13: 32-33, 122, 124, 126.
- Galbreath J. 2006. Are organisation researchers too obsessed with the economic responsibility of the firm? *Journal of Business Ethics* **65**: 287-295.
- Godfrey PC. 2005. The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review* **30**(4): 777-798.

Halme M. 2007. Something good for everyone? Investigation of three corporate responsibility approaches. *HSE Working Papers*. HSE Print: Helsinki.

Halme M, Laurila J. 2008. Philanthropy, integration or innovation? Exploring the financial and societal outcomes of different types of corporate responsibility. *Journal of Business Ethics*, in press. DOI: 10.1007/s10551-008-9712-5.

Jensen MC. 2002. Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly* **12**(2): 235-256.

Jones MT. (2005). The transnational corporation, corporate social responsibility and the “outsourcing” debate. *Journal of American Academy of Business* **6**(2), 91-97.

Kolstad I. 2007. Why firms should not always maximize profits. *Journal of Business Ethics* **76**: 137-145.

Korten DC. 2004. Response to Richard Brinkman. *Journal of Economic Issues* **38**(3): 831-834.

Lankoski L. 2007a. Corporate responsibility activities and economic performance: A theory of why and how they are connected. *Business Strategy and the Environment*, in press. DOI: 10.1002/bse.582.

Lankoski L. 2007b. Differential economic impacts of corporate responsibility issues. *Business & Society*, in press. DOI: 10.1177/0007650307306635.

Lévesque M. 2004. Mathematics, theory, and entrepreneurship. *Journal of Business Venturing* **19**: 743-765.

Mackey A, Mackey TB, Barney JB. 2007. Corporate social responsibility and firm performance: Investor preferences and corporate strategies. *Academy of Management Review* **32**(3): 817-835.

Margolis JD, Walsh JP. 2003. Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly* **48**: 268-305.

McKinsey. 2006. The McKinsey global survey of business executives: Business and society. *The McKinsey Quarterly*, Web exclusive, January. Available at <http://www.mckinseyquarterly.com>.

Monllor JA. 2007. Social entrepreneurship: A study on the source and discovery of social opportunities. 2007 International Social Entrepreneurship Research Conference, Copenhagen, Denmark.

Norman W, MacDonald C. (2004). Getting to the bottom of triple bottom line. *Business Ethics Quarterly* **14**(2), 243-262.

Peredo AM, McLean M. 2006. Social entrepreneurship: A critical review of the concept. *Journal of World Business* **41**: 56-65.

Pinkston TS, Carroll AB. 1996. A retrospective examination of CSR orientations: Have they changed? *Journal of Business Ethics* **15**: 199-206.

- Porter ME, Kramer MR. 2002. The competitive advantage of corporate philanthropy. *Harvard Business Review* December: 57-68.
- RESPONSE. 2007. *Understanding and responding to societal demands on corporate responsibility*. Available at [http://www.insead.edu/v1/ibis/response\\_project/documents/Response\\_FinalReport.pdf](http://www.insead.edu/v1/ibis/response_project/documents/Response_FinalReport.pdf).
- Rose JM. 2007. Corporate directors and social responsibility: Ethics versus shareholder value. *Journal of Business Ethics* **73**: 319-331.
- Rowley T, Berman S. 2000. A brand new brand of corporate social performance. *Business & Society* **39**: 397-418.
- Schroeder D. 2002. Ethics from the top: Top management and ethical business. *Business Ethics: A European Review* **11**(3): 260-267.
- Schuler DA, Cording M. (2006). A corporate social performance – corporate financial performance behavioral model for consumers. *Academy of Management Review* **31**(3), 540-558.
- Smith NC. 2008. Bounded goodness: Marketing implications of Drucker on corporate responsibility. *INSEAD Faculty & Research Working Papers* 2008/18/ISIC.
- Spear R, Bidet E. 2005. Social enterprise for work integration in 12 European countries: A descriptive analysis. *Annals of Public and Cooperative Economics* **76**(2): 195-231.
- Spence LJ, Rutherford R. 2001. Social responsibility, profit maximisation and the small firm owner-manager. *Journal of Small Business and Enterprise Development* **8**(2): 126-139.
- Thompson J, Doherty B. 2006. The diverse world of social enterprise: A collection of social enterprise stories. *International Journal of Social Economics* **33**(5/6): 361-375.
- Walsh JB, Weber K, Margolis J. 2003. Social issues in management: Our lost cause found. *Journal of Management* **29**(6): 859-881.
- Windsor D. 2001. Corporate social responsibility: A theory of the firm perspective – Some comments. *Academy of Management Review* **26**: 502-504.
- Windsor D. 2006. Corporate social responsibility: Three key approaches. *Journal of Management Studies* **43**(1): 93-114.
- Young W, Tilley F. 2006. Can businesses move beyond efficiency? The shift toward effectiveness and equity in the corporate sustainability debate. *Business Strategy and the Environment* **15**: 402-415.

FIGURE 1  
Combinations of business objectives

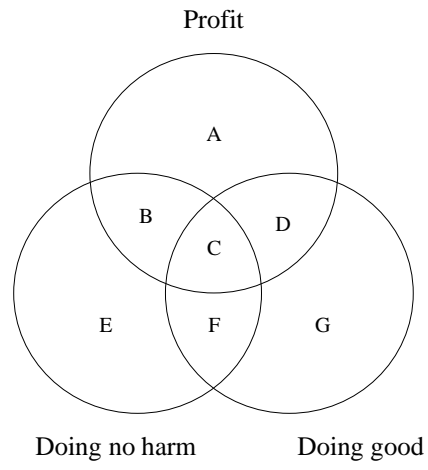




TABLE 1

Targeted outcome areas and elements in objective function for combinations of business objectives

Objective		Targeted outcome area in Figure 1	Elements in objective function
Single objective	Profit	ABCD	$max p$
	Doing no harm	BCEF	$min h$
	Doing good	CDFG	$max g$
Multiple objectives	Profit and doing good	CD	$max p$ and $max g$ *
	Profit and doing no harm	BC	$max p$ and $min h$ *
	Doing good and doing no harm	CF	$max g$ and $min h$ *
	Profit, doing good and doing no harm	C	$max p$ and $max g$ and $min h$ *

\* combining more than one objective in one objective function will be discussed separately later

$p$  = profit,  $h$  = harm,  $g$  = good

TABLE 2  
Alternative relationships for two business objectives x and y

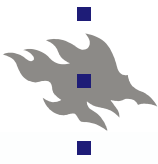
Relationship type	Description	Objective function for firm
Equality	Two objectives have equal priority	cannot be determined
Hierarchy	One objective (y) is subordinated to the other objective (x)	$\max y$ s.t. $x = \max x$
Instrumental	One objective (y) is an instrument for obtaining the other objective (x)	$\max x(y, \dots)$
Constraint	One objective (x) is maximized so that the outcome range for the other objective (y) stays within a preset range	$\max x$ s.t. $y \in z$ , where $z =$ satisfactory outcome range
Dynamic priority	Which objective is given priority varies from one decision-making situation to another based on preset criteria	$\max f(x, y, \dots)$

s. t. = so that

TABLE 3  
Objective functions for different multiobjective firms

Business objectives	Type of relationship between objectives			
	A. Hierarchy	B. Instrumental	C. Constraint	D. Dynamic priority
1. Profit and doing good	a) $\max g$ s.t. $p=\max p$ b) $\max p$ s.t. $g=\max g$	a) $\max p(g, \dots)$ b) $\max g(p, \dots)$	a) $\max p$ s.t. $g \in z$ b) $\max g$ s.t. $p \in z$	$\min G(p, g, \dots)$
2. Profit and doing no harm	a) $\min h$ s.t. $p=\max p$ b) $\max p$ s.t. $h=\min h$	a) $\max p(h, \dots)$ b) $\min h(p, \dots)$	a) $\max p$ s.t. $h \in z$ b) $\min h$ s.t. $p \in z$	$\min G(p, h, \dots)$
3. Doing good and doing no harm	a) $\min h$ s.t. $g=\max g$ b) $\max g$ s.t. $h=\min h$	n.a.	a) $\max g$ s.t. $h \in z$ b) $\min h$ s.t. $g \in z$	$\min G(g, h, \dots)$
4. Profit, doing good and doing no harm	Example: $\max p$ s.t. $g=\max g, h \in z$			$\min G(p, g, h, \dots)$

$p$  = profit,  $h$  = harm,  $g$  = good,  $z$  = satisfactory outcome range,  $G$  = sustainability gap, n.a. = not applicable, s.t. = so that



Discussion Papers:

No.

13. Chen Quizhen & John Sumelius (2006). Comparative Study on Chinese and Finnish Experts' Opinion of Multifunctional Agriculture. *Agricultural Economics*.
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