Volume 40, Issue 1

Organizational sustainability and career frameworks in professional services firms.

Edouard Ribes
Cerna, Mines Paristech, Paris, France

Abstract

This article proposes a resourcing model that can be used to optimize the costs of large professional services firms [PSFs]. Its outcome is based on trade-offs between promotions and external hires under a variety of firm-specific constraints. It is enabled by continuous coupled age structured equations that take into account the workforce evolution at each level of the hierarchy. The model first explicitly provides conditions on the leverage structure of a PSF to design a pure "up or out" organization. Second it shows that a professional services organization can benefit from creating alternate career tracks such as pools of specialists with different compensation schemes. The type of cost optimization is shown to achieve about 5% savings.

Submission Number: EB-19-00107

How to architecture a cost efficient organization? a proposal for professional services firms.

Edouard Ribes

Cerna, mines paristech, Paris, France

Abstract

This article proposes a resourcing model that can be used to optimize the costs of large professional services firms [PSFs]. Its outcome is based on trade-offs between promotions and external hires under a variety of firm constraints. It is enabled by continuous coupled age structured equations that take into account the firm's population evolution at each level of the firm's hierarchy. The model first explicitly provides conditions on the leverage structure of a PSF to design a pure "up or out" organization. Second it shows that a professional services organization can benefit from creating alternate career tracks such as pools of specialists with different compensation schemes. The type of cost optimization is shown to achieve about 5% savings.

1 Introduction

The professional services sector is a specific industrial segment for which interest has grown sharply in the academic community over the past two decades (see Skjølsvik et al. (2017)). According to Empson et al. (2015), the sector is centered on accountancy, management consulting, legal, architectural and engineering firms[1]. Although those firms provide different services (e.g. delivering an audit is not the same thing as designing a building), their business and delivery model has proven to obey a shared standard (see Løwendahl (2005)). As such, one of the trending research topic pertaining to professional services firms [referred to as PSFs in the rest of this paper] has to do with they way they manage their resources in order to increase their performance.

As discussed in Bottazzi et al. (2008), firm performance is made of three components: growth, profitability and productivity. When it comes to improving on PSFs productivity (see Nachum (1999) for a definition), the academic community converges in saying that it mainly comes through services standardization (see Schmenner (2004)), the consequence of which is to change the resources mix necessary to deliver services (e.g. more junior and less expensive resources can be used)(see Greenwood et al. (2005)). However, if firm profitability and growth are well covered topics in the economic literature (see Hopenhayn (1992) for a seminal reference), especially for manufacturing firms, there is, to my knowledge, no discussion around profitable growth in the specific context of professional services firms. This paper will therefore start to bridge this gap, by exploring how resource management (in the form of the design of multiple career tracks) can help PSFs lower their production costs (and therefore increase their profitability) while remaining sustainable.

This work adds to three main streams in the academic literature. First, it adds to the current discussions pertaining to resource management in the field of personnel economics. According to Ulrich and Brockbank (2005), those conversations have mainly revolved around firm employment decisions and promotion rules over the past decades and ultimately aim at improving firms' financial performance (see Bidwell (2011) or Colombo et al. (2012)). As of late, as the field has recognized that those policies are varying on a firm by firm basis, they have branched out and evolved toward discussions around individuals selection and screening (see Lazear and Shaw (2007)) as well as career tracks design (see Ferguson and Hasan (2013)). This paper contributes to this last topic by proposing a model that can easily be operationalized to find a cost optimal career proposition based on a PSF service delivery model.

Second, this works adds to the literature in operational research around workforce planning. As highlighted by Alavi and Leidner (1999), professional services have much more agile practices than capital intensive industries. This calls for a constant review of PSFs' human capital model and of its sustainability, especially as PSFs set an emphasis on growing people from within and rarely leverage external hires (see Rider and Tan (2014) for an illustration in the case of law firms). As most of the workforce planning studies have revolved around manufac-

---

[1]Note that, although less prominent from a revenue and employment standpoint, the professional sector also encompasses a host of other firms which provides services such as advertising ones; photographic services; translation and interpretation services; veterinary services; and other professional, scientific, and technical services. Please refer to the north american industrial classification system [NAICS] for further details.

turing environments (see den Bergh et al. (2013) for a review), the literature presents a gap with respect to PSFs that this paper addresses. Additionally, from a technical standpoint, the topic of workforce planning has been dominated, in operational research, by either deterministic (see Stewman (1986) for a review) or stochastic (see Chattopadhyay and Gupta (2007) for an example) discrete models. However, this paper takes a different stance by leveraging a continuous dynamic population approach. Although unusual in the workforce planning literature (see Doumic et al. (2017) for a discussion), this type of techniques is common to describe labor markets (see Gomes et al. (2013) or Perthame et al. (2018)) and understand their equilibrium properties. As the subject of this study is to assess large organization sustainability (the "Big 4" accounting firms have for instance each more than 250k employees each worldwide), tools suited for population studies appear relevant and provide an original addition to the field.

Third, this works adds to small academic niche revolving around PSFs. As noted by Maister (2012), PSFs have traditionally proposed a strict "up or out" career track because of their partnerships structure and because of their screening imperatives to deliver quality work (see Empson and Chapman (2006) for a discussion). However, as PSFs grow and expand their service offerings, their model tends to shift (recent examples include Capgemini or Accenture), which enables them to potentially have dual career tracks. If the topic is not new, it has not been, to my knowledge, approached in an operational sense, a gap this paper aims to bridge. The two main questions underlying this paper will be addressed sequentially. First, PSFs organization will be modeled based on simple, observable considerations such as firm's population size, seniority and turnover in section 2. This model will then be used to understand when the hierarchical structure and associated management aspirations of such a firm break depending in its business model in section 3. Finally, the production costs of professional services is analyzed in section 4 to see if relaxing the up or out culture can help reduce service delivery costs.

2 PSFs organization: a model.

Professional services firms are hierarchical organizations. According to Maister (2012), PSFs workforce is usually structured around three main positions: "finders", "minders", "grinders". "Finders" sell services and establish client relationships based on their reputation and expertise. "Finders" delegate delivery planning and service quality reviews to the "minders", while "grinders" are in charge of the actual service production. The number of positions can somewhat vary depending on the service nature. For example, law firms are usually structured around two levels: partners and associates (see Oyer and Schaefer (2012)), while consulting firms exhibit more granular levels. But ultimately a PSF can be summarized to a set of L positions ordered in terms of level of responsibility from $j = 1$ to L.

From a resource point of view, three types of organizational dynamics have to be taken into account to describe PSFs "up or out" evolution over time. First, workers in position j can leave the firm at a rate μ_j because of retirements and resignations. Second, they can get promoted from position j to position $j + 1$ at a rate $P_j(t)$ if they have accumulated enough experience in their position (i.e. if their seniority s in their position is superior to a threshold of $\tau_j \geq 0$). Finally, a proportion $h_j(t)$ of the total $N_j(t)$ workers in position j can be hired externally at a

rate $h_j(t)$.

The resources needs of PSFs are driven by clients acquisition and revenue management. According to Maister (2012), their business model is indeed based on charging hours at a given rate until the service has been tailored and delivered to clients. The allocation of those hours across the "finders" / "minders" / "grinders" may somewhat fluctuate depending on the client but it obeys on average to a well defined standard. So does the total amount of hours that is required to service the client portfolio of a PSF. Therefore a firm knows the overall amount of workers $N(t)$ it will need based on the amount of clients it expects to service. It can then decompose the associated work in activities and forecast its workers needs $N_j(t) > 0$ across each of its positions $j \in \{1, .., L\}$. Note that as the firm and its services mature, its needs in terms of "finders", "minders" and "grinders" evolve, which entails a change in the firm leverage ratio $\frac{N_j(t)}{N(t)}$ over time (see Ribes (2018) for a discussion). To operate, a firm therefore needs to understand first its present and future needs $N_j(t)$ for each position and dynamically adjust its promotion rules τ_j, promotion actions $P_j(t)$ and external hiring activities $h_j(t)$ to meet them. This dynamic adjustment can by achieved by assessing how the pool of workers $\rho_j(t,s) > 0$ that at time t, have seniority s in a position $j \in \{1, ..., L\}$ (s.t $N_j(t) = \int_0^{+\infty} \rho_j(t,s)ds$) is evolving:

$$\partial_t \rho_j + \partial_s \rho_j + \mu_j \rho_j + \mathbb{I}_{s \geq \tau_j} P_j(t)\rho_j(t,s) = 0, \qquad s \geq 0,\ t \geq 0, \tag{1}$$

Calling $A_j(t) = \int_{s=\tau_j}^{+\infty} \rho_j(t,s)ds$ the number of workers that can potential be promoted from position j to position $j+1$ and integrating equation (1), it comes that the new workers in position j are given by:

$$\rho_j(t, s = 0) = \underbrace{h_j.N_j(t)}_{\text{External Hires}} + \underbrace{P_{j-1}(t)A_{j-1}(t)}_{\text{Promotions}} = \partial_t N_j(t) + \mu_j.N_j(t) + P_j A_j(t) \tag{2}$$

Note that for the first position (e.g. $j = 1$), only external hiring is possible (which means that $P_0 = 0$) and that it is not possible to promote workers out of the last position (e.g. $j = L$) (which means that $P_L = 0$). This type of system, called renewal equation or McKendrick equation, is standard and well understood (see Gurtin and MacCamy (1974), Farkas (2002) and Perthame (2007) for methodological references).

3 Is a no external hiring policy sustainable for a PSF?

To deliver professional services (e.g. an audit), PSFs (e.g. an accounting firm) leverage a service blueprint that they tailor to their client (see Løwendahl (2005) for a reference). As blueprints and delivery models are often firm specific, it is possible to hire "grinders" externally, but it is extremely challenging to hire "minders". Finally "finders" are only brought in externally to develop new services and/or markets. For example, an audit firm focused on the utilities sector could bring in a new "finder" to start expanding its client portfolio to mining firms if it is unable to do so organically. Therefore external hires are mainly concentrated at the lowest level of the hierarchy.

Assume that all of the external hiring takes place at the lowest level of the firm (i.e. j=1). The

condition (2) therefore entails that the promotion rates P_j must compensate both the turnover and the workforce needs fluctuations in the higher level of the firm:

$$P_j(t) = \frac{C_{j+1}^{no}(t)}{A_j(t)}, \qquad C_j^{no}(t) := \underbrace{\sum_{l=j}^{L} \partial_t N_l(t)}_{\text{Business needs fluctuations}} + \underbrace{\sum_{l=j}^{L} \mu_l . N_l(t)}_{\text{Turnover}} \qquad (3)$$

This also means that the total number of hired workers at position $j = 1$ must balance the total number of workers leaving the firm (i.e. $h_1 N_1(t) = \sum_{l=1}^{L}(\partial_t N_l(t) + \mu_l.N_l(t))$). For the organization to avoid hiring externally outside of its lowest level position, it must ensure that there is always enough workers that can be promoted (i.e. $A_j(t) > 0$). This leads to the following proposition.

Proposition 1 *Assume that the population in position j is initially distributed as $\rho_j^0(s) \in L^1(\mathbb{R}^+)$, for a PSF to be able to maintain a strict no hiring policy, its business needs must obey the following conditions:*

$$\forall t \le \tau_j, \quad N_j(t) > e^{-t\mu_j} \int_t^{\tau_j} \rho_j^0(s-t)ds + \sum_{l=j}^{L} \int_0^t (\partial_t N_l(t-s) + \mu_l N_l(t-s))e^{-\mu_j s}ds, \qquad (4)$$

$$\forall t \ge \tau_j, \quad N_j(t) > \sum_{l=j}^{L} \int_0^{\tau_j} (\partial_t N_l(t-s) + \mu_l N_l(t-s))e^{-\mu_j s}ds. \qquad (5)$$

When it comes to the sustainability of PSF's "up or out" model, proposition (1) shows that two cases appears. On one hand, if the firm is young (i.e. has not gone through a round of promotion across all its positions ($t < \max_j(\tau_j)$)) and its delivery model remains unchanged (i.e. $\partial_t N_l \approx 0$), its sustainability is dictated by its initial workforce composition. As young PSFs are very likely to die (for instance, in the US, the census data shows that 20% of PSFs between 0 and 3 years close every year) and sustainability appears as one of the determinant for survival (see Storey (2016) for a broader discussion), proposition (1) stresses that founders should pay a attention to their initial staffing model (i.e. ρ_j^0) as it can become a show stopper for their firm. On the other hand, if the firm has survived long enough to go through at least a cycle of promotions across all its positions (i.e. $t \ge \max_j(\tau_j)$), the sustainability of a level j is dictated by the evolution of the firm service delivery model in the upper-levels (i.e. $\partial_t N_k$ for $k > l$).

Now, assuming the conditions of proposition (1) are met, it become possible to fully characterize the workforce evolution of a PSF which services have fully matured, especially as according to Audretsch et al. (2004), the assumption that PSFs grow according to Gibrat's law holds (i.e. their growth rate ν is constant).

Proposition 2 (Steady state behavior) *Assume that a PSF grows at a rate ν and keeps its leverage structure constant (i.e. its workforce needs at each level j are such that $N_j = \overline{N_j}e^{\nu.t}$). If:*

$$\forall j > 1, \qquad 1 > \sum_{l=j}^{L} \frac{\overline{N_l}}{\overline{N_j}} \frac{\nu + \mu_l}{\nu + \mu_j}(1 - e^{-(\nu+\mu_j)\tau_j}).$$

4

then there is a unique state with growth $\rho_j(s,t) = \overline{\rho_j}(s)e^{\nu t}$ and it is given by $A_j(t) = \overline{A_j}e^{\nu t}$, $C_{j+1}^{no}(t) = \overline{C_{j+1}^{no}}e^{\nu t}$ and

$$\overline{\rho_L}(s) = (\nu + \mu_L)N_L e^{-(\nu+\mu_L)s},$$

$$\forall j < L \qquad \overline{\rho_j}(s) = e^{-(\nu+\mu_j)s - \frac{\overline{C_{j+1}^{no}}}{A_j}(s-\tau_j)_+} \sum_{l=j}^{L}(\nu + \mu_l)N_l.$$

Interestingly, proposition (2) nuances the statements of Maister (2012) that make growth (in revenue and employment) a necessary condition for the sustainability of PSFs as it drives the firm incentive structure in terms of promotions opportunity. It indeed shows that, as long as PSFs' service delivery model (i.e. $\overline{N_j}$ for $j \in \{1..L\}$) is set and viable, they can operate in a sustainable fashion whether or not they face favorable ($\nu > 0$) or adverse ($\nu \leq 0$) market conditions. Promotions rates for employees in position j (i.e. P_j) are indeed independent from firm growth (i.e. ν) and remain constant as long as the service delivery model of the firms is unchanged.

4 How to minimize the production costs of a PSF?

Section (3) has shown that for the "up or out" model of a PSF to be viable, its delivery model (i.e. the number of positions N_j required across the $j \in \{1...L\}$ levels of the firm) obeys specific constraints. The career model of a PSF can yet be optimized, notably to lower its production costs. To deliver services, the firm indeed relies on workers in each position j, who comes with a base cost ω_j that increases at a rate r_j with experience (i.e. the cost of worker with experience s is given by $\omega_j(s) = \Omega_j.e^{r_j.s}$). As technology only assumes a negligible part of the delivery of professional services (even though this may change in the future as stressed by Frey and Osborne (2017)), the production costs of a PSF organization that has a no external hiring policy and is at equilibrium ($\nu = 0$) are driven by its workforce and therefore defined as the aggregate wage bill given by: $C = \sum_{j \leq J} \Omega_j \int e^{r_j.s}.\overline{\rho_j}(s)ds$. Note that to ensure that costs are finite, the yearly wage increases must be such that $r_j < \mu_j.(1 + f(\tau_j))$ with $f(\tau_j) = \frac{\sum_{l \geq j+1} \mu_l.N_l}{\mu_j.N_j.e^{-\mu_j.\tau_j} + [\sum_{l \geq j+1} \mu_l.N_l].[e^{-\mu_j.\tau_j}]}$ as:

$$C_j = \Omega_j.(\sum_{l \geq j} \mu_l.N_l).(\frac{e^{(r_j-\mu_j)\tau_j} - 1}{r_j - \mu_j} + (\frac{e^{(r_j-\mu_j).\tau_j}}{\mu_j(1 + f(\tau_j)) - r_j})) \tag{6}$$

Two types of activities can then be initiated to decrease the cost of service. First, it can reduce the pool of workers that are waiting for a promotion (i.e. A_j) by promoting people earlier if ready. This will translate in savings if wage increase r_j are important.

Proposition 3 *To reduce its production costs, a PSF can speed up its career track (i.e. decrease τ_j) on positions j if their yearly wage increase is such that:*

$$r_j < \mu_j.(1 + \frac{f'(\tau_j).[(r_j - \mu_j)(r_j - \mu_j.f((\tau_j)))]}{f(\tau_j).[2.r_j - \mu_j.(1 + f(\tau_j))]}))$$

If a PSF can change its traditional up or out career track to manage costs, it can also have an interest in proposing alternative careers scheme by carving out a pool of specialists in position j that are not eligible to promotion above j and are sourced from the prior position $j-1$. As generalists and specialists have a different wage structure (see Prasad (2009)), the following condition must therefore be respected, for this scheme to benefit a PSF.

Proposition 4 *A PSF can optimize its production costs by setting up a pool of P_j specialists at position j that have a wage scheme $\theta_j(s)$ defined by a base salary Θ_j with a yearly increase at a rate $h_j < \mu_j$ (i.e. $\theta_j(s) = \Theta.e^{h_j.s}$) if:*

$$(\sum_{l \geq j} \mu_l.N_l).(\frac{e^{(r_j-\mu_j).\tau_j}.[f(N_j-P_j,\tau_j)-f(N_j,\tau_j)]}{[\mu_j(1+f(N_j,\tau_j))-r_j][\mu_j(1+f(N_j-P_j,\tau_j))-r_j]}) >$$

$$P_j.[\frac{\Theta_j}{\Omega_j.(\mu_j-h_j)} - \mu_j.(\frac{e^{(r_j-\mu_j)\tau_j}-1}{r_j-\mu_j} + \frac{e^{(r_j-\mu_j).\tau_j}}{\mu_j(1+f(N_j-P_j,\tau_j))-r_j})]$$

Example. Those two policies were tested in a PSF whose characteristics are similar to the one described in table (1) (and with 1000 workers). The firm meets the conditions described in proposition (2) and is therefore able to grow its own employees. Normalizing the firm growth ν to 0%, its initial structure bears a long run operating cost of 71.53M\$ per year. Its career track features a 12 years period for an employee to grow from a "grinder" to a "finder". Without changing the overall track length, proposition (3) shows that remodeling the firm career track to allow promotion from grinder to minder after 3 years and from minder to finder after 9 leads to cost savings worth 572k\$ per year (i.e. 0.8% of total costs). Additionally creating specialist tracks for both minders and grinders with a wage scheme of 77k\$/year for specialist minders (resp. 38k\$/year for specialist grinders) with a 2% year on year salary adjustment so that 7% (resp 20%) of the firm workforce is made of specialist minders (resp. grinders) preserves the firm ability to be self sustained while generating an additional 3.9% of cost savings (i.e. about 3M\$ per year).

j	$\overline{N_j}$	Ω_j [k\$/year]	r_j^g[%/year]	τ_j (years)	μ_j [%/year]
Finders	5%	150	2%	-	5%
Minders	20%	70	5%	6	15%
Grinders	75%	35	5%	6	20%

Table 1: Example of professional services organization set up.

5 Conclusion and perspectives

This paper models the labor organization of PSFs. It first shows that the viability of their classical organizational paradigm (i.e. the so called "up or out" model) is linked to the evolution

of their service delivery model rather than its revenue growth as stressed in most of the PSFs related literature. Second it shows that, when PSFs are sustainable, they have the opportunity to reduce their costs of service production by redesigning the firm's career track. This optimization is shown to be mainly dependent in the exogenous competitive pressure that exists for workers in the market as this drives the number of individuals who leaves the organization. The implementation of those new policies yet raise questions of workers appetite for the various career menus that a PSF can propose. This could indeed have some impact on the firm's position turnover and therefore its sustainability. This could represent an interesting avenue of future research.

References

Alavi, M. and D. Leidner (1999). Knowledge management systems: issues, challenges, and benefits. *Communications of the Association for Information systems 1*(1), 7.

Audretsch, D. B., L. Klomp, E. Santarelli, and A. R. Thurik (2004). Gibrat's law: are the services different? *Review of Industrial Organization 24*(3), 301–324.

Bidwell, M. (2011). Paying more to get less: The effects of external hiring versus internal mobility. *Administrative Science Quarterly 56*(3), 369–407.

Bottazzi, G., A. Secchi, and F. Tamagni (2008). Productivity, profitability and financial performance. *Industrial and Corporate Change 17*(4), 711–751.

Chattopadhyay, A. K. and A. Gupta (2007). A stochastic manpower planning model under varying class sizes. *Annals of Operations Research 155*(1), 41–49.

Colombo, M. G., M. Delmastro, and L. Rabbiosi (2012). Organizational design and firm performance. In *The Oxford Handbook of Managerial Economics*.

den Bergh, J. V., J. Beliën, P. D. Bruecker, E. Demeulemeester, and L. D. Boeck (2013). Personnel scheduling: A literature review. *European Journal of Operational Research 226*(3), 367 – 385.

Doumic, M., B. Perthame, E. Ribes, D. Salort, and N. Toubiana (2017). Toward an integrated workforce planning framework using structured equations. *European Journal of Operational Research 262*(1), 217–230.

Empson, L. and C. Chapman (2006). Partnership versus corporation: Implications of alternative forms of governance in professional service firms. In *Professional service firms*, pp. 139–170. Emerald Group Publishing Limited.

Empson, L., D. Muzio, J. P. Broschak, and C. R. Hinings (2015). *The Oxford handbook of professional service firms*. Oxford University Press, USA.

Farkas, M. (2002). On the stability of stationary age distributions. *Applied mathematics and computation 131*(1), 107–123.

Ferguson, J.-P. and S. Hasan (2013). Specialization and career dynamics: Evidence from the indian administrative service. *Administrative science quarterly 58*(2), 233–256.

Frey, C. B. and M. A. Osborne (2017). The future of employment: How susceptible are jobs to computerisation? *Technological forecasting and social change 114*, 254–280.

Gomes, D. A., J. Mohr, and R. R. Souza (2013). Continuous time finite state mean field games. *Applied Mathematics & Optimization 68*(1), 99–143.

Greenwood, R., S. X. Li, R. Prakash, and D. L. Deephouse (2005). Reputation, diversification, and organizational explanations of performance in professional service firms. *Organization Science 16*(6), 661–673.

Gurtin, M. E. and R. C. MacCamy (1974). Non-linear age-dependent population dynamics. *Archive for Rational Mechanics and Analysis 54*(3), 281–300.

Hopenhayn, H. A. (1992). Entry, exit, and firm dynamics in long run equilibrium. *Econometrica: Journal of the Econometric Society*, 1127–1150.

Lazear, E. P. and K. L. Shaw (2007). Personnel economics: The economist's view of human resources. *Journal of economic perspectives 21*(4), 91–114.

Løwendahl, B. (2005). *Strategic management of professional service firms.* Copenhagen Business School Press DK.

Maister, D. H. (2012). *Managing the professional service firm.* Simon and Schuster.

Nachum, L. (1999). Measurement of productivity of professional services: Anillustration on swedish management consulting firms. *International Journal of Operations & Production Management 19*(9), 922–950.

Oyer, P. and S. Schaefer (2012). Firm/employee matching: An industry study of american lawyers. Technical report, National Bureau of Economic Research.

Perthame, B. (2007). *Transport equations in biology.* Frontiers in Mathematics. Birkhäuser Verlag, Basel.

Perthame, B., E. Ribes, and D. Salort (2018). Career plans and wage structures: a mean field game approach. *Mathematics in Engineering 1*, 38.

Prasad, S. (2009). Task assignments and incentives: generalists versus specialists. *The Rand journal of economics 40*(2), 380–403.

Ribes, E. (2018). What drives professional services firms prices? Technical report.

Rider, C. I. and D. Tan (2014). Labor market advantages of organizational status: A study of lateral partner hiring by large us law firms. *Organization Science 26*(2), 356–372.

Schmenner, R. W. (2004). Service businesses and productivity. *Decision Sciences 35*(3), 333–347.

Skjølsvik, T., F. Pemer, and B. R. Løwendahl (2017). Strategic management of professional service firms: Reviewing abs journals and identifying key research themes. *Journal of Professions and Organization 4*(2), 203–225.

Stewman, S. (1986). Demographic models of internal labor markets. *Administrative Science Quarterly 31*(2), 212–247.

Storey, D. J. (2016). *Understanding the small business sector*. Routledge.

Ulrich, D. and W. Brockbank (2005). *The HR value proposition*. Harvard Business Press.