This article identifies six key lessons gathered from the research on the practice of strategic management in public organizations, based on the effectiveness of strategy choices and the alignment of strategy with environmental conditions and internal processes and structures.

Strategic management is an area of academic inquiry and organizational practice that examines the relationships between strategic aims, processes, and content, typically using a contingency framework, which posits that successful organizations adapt to their environment in the pursuit of higher performance (Donaldson 2001; Thompson 1967). A body of theoretical and empirical work has now been undertaken on strategic management in public organizations to examine questions of aims (Moore 1995; Poister and Streib 1999), strategic processes (Berry 1994; Bryson 1995; Moore 1995), strategy content (Boyne and Walker 2004; Joldersma and Winter 2002), and relationships with internal management practices and the external environment (Boschken 1988; Greenwood 1987; Lane and Wallis 2009). However, studies examining the consequences of strategy for performance are more recent (Johansen 2007; Naranjo-Gil 2009). Strategic management has become more important in public organizations because increased emphasis has been placed on attaining higher levels of performance (Poister, Pitts, and Edwards 2010). A focus on goals, planning processes, and innovation sits at the heart of the reforms associated with the New Public Management, while citizen expectations of public services continue to grow, requiring more strategic responses to meet those needs (Pollitt and Bouckaert 2012; Walker, Boyne and Brewer 2010). The literature offers a number of theoretical strategic management frameworks (see, e.g., Mintzberg, Ahlstrand, and Lampel 2005). This review integrates the quantitative research evidence that applies Miles and Snow’s (1978) strategic management typologies to public agencies.1 Miles and Snow’s framework is examined because it is both comprehensive—examining aims, strategy content, processes, structure, context, and their relationship to organizational performance—and generic. This article identifies six key lessons gathered from the research on the practice of strategic management in public organizations, based on the effectiveness of strategy choices and the alignment of strategy with environmental conditions and internal processes and structures.
and McGowan 1983; Wechsler and Backoff 1986). Boyne and Walker (2004) argue that many of these conflate aspects of strategy—aims, processes, and content (e.g., Nutt and Backoff 1993; Rubin 1988)—suggesting that the generic framework offered by Miles and Snow is suited, with some adaptation, to public organizations. Specifically, it is important to distinguish between aims, strategy content, and strategy processes, not least so that the theoretical and empirical connections between them can be explored.

Miles and Snow's generic typology was developed from detailed case study work in a number of business sectors, including non-profit hospitals. The majority of the empirical tests used to assess this widely examined framework have been conducted in private firms (Ramos-Rodríguez and Ruiz-Navarro 2004; Zahra and Pearce 1990). While political authority extends across private organizations, political institutions and oversight bodies set the goals and objectives of public organizations much more directly (Bozeman 1987; Rainey 2010). This is an important characteristic of public sector strategic management because it determines the powers and responsibilities of public organizations. The nature of public organizations' aims is largely exogenous, as they are typically determined by legislation and by the desires of the political priorities of the government of the day. Any assessment of the influence of strategy content and processes must take account of this.

Miles and Snow

The strategic archetypes of defender, prospector, analyzer, and reactor are perhaps the best-known aspects of the Miles and Snow framework. These strategy types are a summary or shorthand of the ways in which organizations coalign with their environments and respond to the three major adaptive cycle problems and solutions: entrepreneurial, engineering, and administrative (see table 1). Solutions to the entrepreneurial problems—definition of the service domain—and the engineering problems—technological and processes to resolve entrepreneurial problems—constitute an organization's strategy content, that is, the ways in which the organization seeks to achieve the objectives that have been selected (or selected for it). Solutions to the administrative problems (organizational structure, policy, and process) are complex; they require managers to establish structures and processes that rationalize the strategic decisions that have already been made (lagging) while considering how such processes and structures may affect the future capacity to adapt to changing circumstances (leading). Mature organizations address and resolve these problems simultaneously, although table 1 organizes them sequentially for ease of presentation.

Miles and Snow note that the typology “specifies relationships among strategy, structure, and process to the point where entire organizations can be portrayed as integrated wholes in dynamic interaction with their environments” (1978, 30). Effective organizations resolve the entrepreneurial, engineering, and administrative problems and achieve successful alignment, or strategic fit, of strategy, structure, process, and environment (see table 1 in for defenders, prospectors, and reactors). However, not every strategy type is associated with effectiveness. Miles and Snow propose that alignment is achieved successfully for defenders, prospectors, and analyzers, whereas reactors lack alignment and consequently exhibit poorer performance. The relationships between strategy, structure, process, and environment reflect those sketched out in contingency theory (Lawrence and Lorsch 1967; Scott 2002; Thompson 1967).

Strategy content, or strategic stance, relates to a series of questions about how an organization responds to the problems and solutions (entrepreneurial) generated by its domain and services and by the technologies and processes that it uses (engineering). Does an organization actively seek new opportunities to apply innovations to existing services and opportunities? Does it respond to changing organizational contexts? Is it proactive and future orientated? Miles

Table 1  Miles and Snow's Adaptive Cycle and Alignment between Strategy, Process, Structure, Environment, and Performance

<table>
<thead>
<tr>
<th>Adaptive cycle</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial problem</td>
<td>Organizational domain or service area narrowly, broadly, or unevenly defined</td>
</tr>
<tr>
<td>Engineering problem</td>
<td>Systems to operationalize entrepreneurial problems, e.g., cost-efficiency, flexibility and innovation, and project development</td>
</tr>
<tr>
<td>Administrative problem</td>
<td>Uncertainty reduction through rationalizing and stabilizing solutions to the entrepreneurial and engineering problems through formulating and implementing processes and structures that enable the organization to continue to evolve</td>
</tr>
<tr>
<td>Alignment</td>
<td>Strategic choices associated with distinctive combinations of internal and external characteristics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Content</th>
<th>Formulation</th>
<th>Implementation</th>
<th>Structure</th>
<th>Environment</th>
<th>Relation to Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospector</td>
<td>Incremental</td>
<td>Incremental</td>
<td>Decentralized</td>
<td>Uncertain</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Defender</td>
<td>Rational</td>
<td>Rational</td>
<td>Centralized</td>
<td>Stable</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Reactor</td>
<td>No clear relationship</td>
<td>No clear relationship</td>
<td>No clear relationship</td>
<td>No clear relationship</td>
<td>Negative or worse than defender or prospector</td>
<td></td>
</tr>
</tbody>
</table>
and Snow describe this type of organization as a *prospector*. Does an organization concentrate its efforts on procedures rather than products, seeking to maintain a stable portfolio of services that are delivered reliably and at low cost? Does it adopt tried and tested innovations? Is it focused on core business and efficiency? Miles and Snow characterize such organizations as *defenders*. Does an organization watch others for new ideas? Does it try to quickly adopt innovations? Is it focused on core business and efficiency? Miles and Snow describe this type of organization as a *reactor*. 

Miles and Snow sketch the relationships between strategy, process, and structure, arguing that organizations adopt the strategy that is best suited to their circumstances. Prospectors adopt “logical incremental” approaches (Quinn 1980) to strategy formulation, implementation, and decentralized structures, which permit quick responses to changing environmental conditions. The preferred strategy process of a prospector comprises hunches, intuition, and a reliance on the push and pull of organizational politics (Elbanna 2006; Quinn 1980). Defenders use “rational” processes (Elbanna 2006) and centralized structures to achieve higher performance. Defenders undertake a lot of formal planning, collecting and analyzing large amounts of data on service needs, evaluating the options for meeting those needs, and using sophisticated techniques to weigh the costs and benefits of each option (Bryson, Berry, and Yang 2010; Elbanna 2006; Mintzberg 1994). They adopt a centralized structure to maintain control over efficient services that focus on core business or service goals. Analysts adopt intermediate structures and processes that depend on the emphasis on proactive or conservative strategy. Reacting is characterized by an absence of strategy, along with inconsistent structures and processes. The inability to solve the entrepreneurial and engineering problems leads to the misalignment of administrative problems and solutions, which results in poor performance.

Regarding responses to the environment, Miles and Snow build on contingency theory, claiming that an organic structure is required in an uncertain environment, whereas a mechanistic structure is preferable in a predictable and stable environment (Burns and Stalker 1961; Lawrence and Lorsch 1969). This implies that a prospecting strategy should work best in an uncertain environment. Defending, by contrast, should be an especially effective strategy in the presence of environmental certainty. Miles and Snow’s arguments suggest that reacting is not consistently linked to any specific set of external circumstances. However, while reactors “do not possess a set of mechanisms that allows them to respond consistently to their environments over time” (Miles and Snow 1978, 93), a dynamic and unpredictable environment may lead such organizations to seek cues from other external actors about the best way to respond to these circumstances.

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**Integrating Empirical Evidence of Strategy and Performance**

The empirical literature on Miles and Snow was located using Google Scholar. The search terms used included “Miles and Snow” AND “performance,” “effectiveness,” “efficiency,” “consequences,” AND “public” (and derivatives thereof). The search terms were kept broad so as not to omit studies. Peer-reviewed journal articles, books, and book chapters were selected as the unit of analysis because they have been subject to review prior to publication and therefore should meet the basic requirements of theoretical and methodological rigor. Once publications were identified using these terms, they were examined in further detail, and only studies that included public organizations as the unit of analysis, Miles and Snow, and organizational performance were included. Publications were excluded if, for example, they were not empirical, performance was not the dependent variable, they contained partial statistical data, case studies were presented, or they were conceptual pieces. Careful reading of the articles led to a final sample of 25 empirical studies that contained full tables of statistical results.

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The support score method was used to integrate the results of the empirical evidence because the majority of studies reported multiple regression techniques rather than correlations (Boyne 2002; Damanpour 2010). The support score method is based on the percentage of statistical tests that support the hypothesis, which states that strategy content and alignment on other variables results in higher levels of performance. To count as support, results must be in the direction predicted by Miles and Snow (prospectors and defenders are positively associated with performance, whereas reactors have no performance effect), and the results must be statistically significant, that is, greater than would be likely to arise by chance alone ($p < .05$). If these criteria are applied to all of the tests in a single study, then a support score can be calculated as a percentage of all of the tests reported in the study (which ranged from 1 to 66 in the publications reviewed).

An aggregate support score can be calculated across all of the studies in at least two ways (Boyne 2002; Rosenthal 1991). First, the support score for each study can be treated equally, regardless of whether it contains 1 or 300 tests. Second, each study can be weighted (multiplied) by the number of tests in that study so that an equal weight is attached to each test rather than to each study. The weighted mean has the advantage: studies that report only a small number of tests do not have a disproportionate influence on the analysis. The advantage of the unweighted mean is that studies that conduct a large number of tests on the same data set are not given undue importance. The real level of support probably lies somewhere between the unweighted and weighted figures. As a result, the following decision rule was implemented: to determine strong support, both support scores should be greater than 50 percent, partial support is signaled when either the weighted or unweighted score is more than 50 percent, and no support is offered when the scores fall below 50 percent (Boyne 2002; Damanpour 2010).
Characteristics of the Studies
Table 2 presents the characteristics of the Miles and Snow studies in public settings. The studies were all conducted over a 25-year period; only one study was published in the 1980s, three in the 1990s 15 in the 2000s, and six between 2010 and 2012. The United States (12 studies) and United Kingdom (11 studies) dominate the sample, with one study each from China and Spain. Non-U.S. studies reported much higher support scores (73 percent and 76 percent weighted and unweighted, respectively) than studies based in the United States (43 percent and 50 percent weighted and unweighted, respectively). The studies captured a range of public services: 11 studies examined local governments (all in the United Kingdom), while four U.S. school districts were examined, along with seven hospitals and nursing facilities, leaving one study each based in higher education and state-owned enterprises.

The average sample size is 598; however, a small number of studies with large samples right-skewed the distribution. The median sample size is 101, which would appear to have limited influence on the results. Those with a sample below the median offer a weighted support score of 58 percent (68 percent unweighted), whereas those with a sample above the median offer a 52 percent weighted support score (58 percent unweighted). The studies employed a mix of research designs, but the effect of this on the resultant support scores is not particularly marked. The cross-sectional and lagged or panel studies reported weighted support scores of 60 percent and 52 percent, respectively, and unweighted scores of 65 percent.

Sample size and data structure do not appear to unduly influence the support score. However, there are a number of other research design issues that need to be borne in mind when interpreting the findings presented here. Many of the designs do not address questions about the ways in which performance affects strategy. The possibility for reverse causality is only examined in a small number of studies that use a prior-performance variable to control for the impact of performance over time (see, e.g., Andrews, Boyne, Meier et al. 2012; Walker et al. 2010). Relatedly, none of the studies controls for the characteristics of organizations that might influence strategy content (i.e., do the aims given to some public organizations make them tend toward a particular strategy?). Finally, the focus of the studies is predominantly on two countries, the United Kingdom and United States, raising concerns about generalization.

Support for Miles and Snow?
The support score for the studies examining Miles and Snow’s influence on the performance of public service organizations is reported in table 2, covering the range of permutations for the Miles and Snow model implemented in these publications; the overall support

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Unit of Analysis</th>
<th>Country</th>
<th>M&amp;S</th>
<th>IV</th>
<th>DV</th>
<th>Analysis</th>
<th>Data</th>
<th>Support Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young, Beekun, and Ginn (1992)</td>
<td>370</td>
<td>H</td>
<td>U.S.</td>
<td>SC &amp; ST</td>
<td>P</td>
<td>a</td>
<td>BS</td>
<td>CS</td>
<td>4 50 0 50</td>
</tr>
<tr>
<td>Brock (1997)</td>
<td>95</td>
<td>HE</td>
<td>U.S.</td>
<td>SC &amp; P</td>
<td>S-C</td>
<td>p</td>
<td>χ²</td>
<td>CS</td>
<td>2 0 100 0</td>
</tr>
<tr>
<td>Abernethy and Brownell (1999)</td>
<td>63</td>
<td>H</td>
<td>U.S.</td>
<td>SC &amp; P</td>
<td>P</td>
<td>p</td>
<td>BS</td>
<td>CS</td>
<td>1 100 0 0</td>
</tr>
<tr>
<td>Davies et al. (2001)</td>
<td>308</td>
<td>N</td>
<td>U.S.</td>
<td>SC, SC &amp; ST</td>
<td>S</td>
<td>p</td>
<td>BS</td>
<td>CS</td>
<td>3 67 33 0</td>
</tr>
<tr>
<td>Cunningham (2002)</td>
<td>172</td>
<td>Uni</td>
<td>U.S.</td>
<td>SC</td>
<td>P</td>
<td>a</td>
<td>M</td>
<td>CS</td>
<td>9 56 0 44</td>
</tr>
<tr>
<td>Tan (2002)</td>
<td>56</td>
<td>SOE</td>
<td>China</td>
<td>SC</td>
<td>S</td>
<td>p</td>
<td>BS</td>
<td>CS</td>
<td>3 100 0 0</td>
</tr>
<tr>
<td>Castle (2003)</td>
<td>416</td>
<td>N</td>
<td>U.S.</td>
<td>SC</td>
<td>P</td>
<td>a</td>
<td>BS</td>
<td>CS</td>
<td>20 85 15 0</td>
</tr>
<tr>
<td>Andrews, Boyne, Law, and Walker (2005)</td>
<td>80</td>
<td>LG</td>
<td>U.K.</td>
<td>SC</td>
<td>S</td>
<td>a/p</td>
<td>BS</td>
<td>L</td>
<td>9 67 33 0</td>
</tr>
<tr>
<td>Johansen (2007)</td>
<td>3,657</td>
<td>SD</td>
<td>U.S.</td>
<td>SC, SC &amp; P</td>
<td>S</td>
<td>a</td>
<td>BS</td>
<td>P</td>
<td>6 67 33 0</td>
</tr>
<tr>
<td>Meier et al. (2007)</td>
<td>3,041</td>
<td>SD</td>
<td>U.S.</td>
<td>SC</td>
<td>S</td>
<td>a</td>
<td>BS</td>
<td>P</td>
<td>30 20 57 13</td>
</tr>
<tr>
<td>Ercitcott and Walker (2008)</td>
<td>72</td>
<td>LG</td>
<td>U.K.</td>
<td>SC</td>
<td>S</td>
<td>a/p</td>
<td>BS</td>
<td>CS &amp; L</td>
<td>6 67 33 0</td>
</tr>
<tr>
<td>Andrews, Boyne, Law, and Walker (2009a)</td>
<td>47</td>
<td>LG</td>
<td>U.K.</td>
<td>SC, SC &amp; ST</td>
<td>S</td>
<td>a</td>
<td>BS</td>
<td>L</td>
<td>6 83 17 0</td>
</tr>
<tr>
<td>Andrews, Boyne, Law, and Walker (2009b)</td>
<td>90</td>
<td>LG</td>
<td>U.K.</td>
<td>SC &amp; P</td>
<td>S</td>
<td>a</td>
<td>BS</td>
<td>L</td>
<td>3 100 0 0</td>
</tr>
<tr>
<td>Naranjo-Gil (2009)</td>
<td>112</td>
<td>H</td>
<td>Spain</td>
<td>SC &amp; P</td>
<td>S</td>
<td>a/p</td>
<td>BS</td>
<td>CS</td>
<td>4 50 50 0</td>
</tr>
<tr>
<td>Walker and Brewer (2009)</td>
<td>135</td>
<td>LG</td>
<td>U.K.</td>
<td>SC &amp; ST</td>
<td>S</td>
<td>a/p</td>
<td>BS</td>
<td>CS &amp; L</td>
<td>6 100 0 0</td>
</tr>
<tr>
<td>Walker et al. (2010)</td>
<td>101</td>
<td>LG</td>
<td>U.K.</td>
<td>SC</td>
<td>S</td>
<td>a/p</td>
<td>BS</td>
<td>L</td>
<td>12 50 0 50</td>
</tr>
<tr>
<td>Andrews, Boyne, Law, and Walker (2011)</td>
<td>40</td>
<td>LG</td>
<td>U.K.</td>
<td>SC, SC &amp; P</td>
<td>S</td>
<td>a</td>
<td>BS</td>
<td>L</td>
<td>100 0 0 0</td>
</tr>
<tr>
<td>Andrews, Boyne, Meier et al. (2012)</td>
<td>178</td>
<td>LG</td>
<td>U.K.</td>
<td>SC</td>
<td>S</td>
<td>a/p</td>
<td>BS</td>
<td>P</td>
<td>30 80 0 20</td>
</tr>
<tr>
<td>Owens and Kukla-Acevedo (2012)</td>
<td>2,490</td>
<td>SD</td>
<td>U.S.</td>
<td>SC &amp; EN</td>
<td>S</td>
<td>a</td>
<td>BS</td>
<td>L</td>
<td>13 38 62 0</td>
</tr>
</tbody>
</table>

Notes:
Unit of analysis: H = hospital, HE = higher education, LG = local government, N = nursing homes, SD = school district, SOE = state-owned enterprise, U = university.
M&S: SC = strategy content, ST = structure, P = processes, EN = environment.
IV, dependent variable: P = paragraph, S-C = scale converted to categorical data, S = scale, P-S = paragraph with scale.
DV, dependent variable: p = perceptual (survey), a = archival (secondary data).
Analysis: M = MANOVA, χ² = non parametric, r = correlation, β = regression.
Data: CS = cross-section, P = panel, L = lagged.
score is strong, with weighted and unweighted scores greater than 50 percent (54 percent and 63 percent, respectively). These positive scores from a range of studies in varying settings indicate that the framework has veracity in public organizations.

While the overall support score is strong, Table 2 indicates somewhat uneven coverage of the Miles and Snow framework. A fully specified model testing the archetypes would simultaneously examine the relationships among strategy, structure, process, environment, and performance. An examination of these connections would require a four-way interaction in a regression model or the use of alternative estimation techniques such as structural equation models.

One study moved toward modeling the framework by examining strategy, structure, and environment and their performance consequences in a large data set of Texas school districts (Meier et al. 2010). Twelve studies examined the bivariate associations between strategy and internal variables, and four others explored such associations between strategy and the environment. However, the largest number of studies, 17, analyzed the direct relationships between strategy content and performance.

### Strategy Content and Performance

Finding 1: A mix of strategies matters.

Miles and Snow propose that organizations adopt a single strategic archetype as prospectors, defenders, analyzers, or reactors. This produces categorical measurement—an organization can only be a defender or a prospect. A “paragraphing” approach that described the strategic archetype was widely used for measurement in early work (e.g., Snow and Hambrick 1980; Greenwood 1987 in the public sector). This was later adapted to scales with decision rules to identify a single approach (Conant, Mokwa, and Varadarajan 1990; DeSarbo et al. 2005). Table 2 suggests a somewhat different approach in public sector studies, with five studies adopting categorical measurement and the balance using scales that allow strategies to vary within organizations. Table 3 provides illustrations of these differing approaches to measurement, with examples from defenders and prospectors.

Boyne and Walker argue the case for mixed strategies, as outlined in the lower third of Table 3. They suggest that organizations pursue a range of strategies because they are not “a cat, a fish, or a dog … strategies are not like species of animals because they can be mixed and combined” (2004, 235). Analyzers share characteristics with prospectors and defenders, and they are rarely “first movers,” but rather “watch their competitors closely for new ideas, and … rapidly adopt those which appear to be most promising” (Miles and Snow 1978, 29). The analyzer category is recognized as a hybrid between defending and prospecting (Miles and Snow 1978; Tan 2002). If organizations adopt a single strategic stance, then it is necessary to include the analyzer category. However, if strategy is seen to vary, organizations that display both prospecting and defending characteristics possess the features of an analyzer (Naranjo-Gil 2009; Walker and Ruekert 1987). To capture the notion that strategy varies, measurement needs to move away from the use of descriptions that capture all features of the strategic stance in one paragraph and toward scales.

### Table 3 Illustrations of Approaches to Measurement

<table>
<thead>
<tr>
<th>The paragraphing or categorical approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents are asked to select one of four descriptions strategy type descriptions. The following are taken from Greenwood (1987, 310–11):</td>
</tr>
<tr>
<td>TYPE A. This type of local authority prefers stability to experimentation and innovation. It concentrates resources upon statutorily prescribed services and makes a deliberate effort to provide stability in their provision. Established and understood ways of working are preferred. A central concern is to make the local authority more efficient. (D)</td>
</tr>
<tr>
<td>TYPE C. This type of local authority actively seeks new opportunities and challenges. New kinds of services and new ways of working are vigorously sought and implemented. The local authority values being “first in” on service developments and ways of working, even though some experiments will be unsuccessful. Continual innovation and experimentation are preferred to stability. (P)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multi-item scales used to create categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-item scales are used that capture the four strategy types within the entrepreneurial, engineering, and administrative problems. The following is an example of questions from the administrative problem from Conant, Mokwa, and Varadarajan (1990, 381–82); respondents choose one option.</td>
</tr>
</tbody>
</table>

In comparison to other HMOs, the structure of my organization is:

(a) Functional in nature (i.e. organized by department—marketing, accounting, personnel etc.) (D)
(b) Service or market oriented (i.e., departments like pediatrics or Ob/Gyn have marketing or accountability responsibilities). (P)
(c) Primarily functional (departmental) in nature; however, a service- or market-oriented structure does exist in newer or larger services offering areas. (A)
(d) Continually changing to enable us to meet opportunities and solve problems as they arise. (R)

Scales allowing strategy to vary

Multi-item scales are used to capture the three strategy types and respondents reply on Likert scales (questions from Andrews, Boyne, Law, and Walker 2012, 62).

We continually redefine our service priorities. (P)
We seek to be first to identify new modes of delivery. (P)
Search for new opportunities is a major part of our overall strategy. (P)
We seek to maintain stable service priorities. (D)
The service emphasizes efficiency of provision. (D)
We focus on our core activities. (D)

Key: (A) = analyzer, (D) = defender, (P) = prospector, (R) = reactor.
that strategy varies and adopting associated measurement, the analyzer type becomes redundant because it is an intermediate between the somewhat opposite strategies of defending and prospecting. Amendments have been made to the generic Miles and Snow framework when it is applied to other industries. For example, Ghobadian et al. (1998) suggest a cautious prospector in the recently privatized electricity distribution and supply industries in the United Kingdom.

Being able to pursue a range of strategies is particularly important in the multipurpose and complex organizations that often typify the public sector landscape (Rainey 2010). In the majority of the public sector studies conducted, the three strategies were included together in the statistical models. The results reported show the effects of prospecting, defending, and reacting when the other two strategies are held constant. This evidence points toward the importance of adopting a mix of strategies. The support scores for studies that adopted paragraphing measurement were 56 percent and 46 percent for weighted and unweighted, and for scale studies 53 percent and 68 weighted and unweighted, respectively. Thus, the paragraphing approach offers partial support, whereas the support score for the studies using scales is greater than 50 percent in both cases, showing strong support. The higher support for scale studies would imply that organizations can display characteristics of both defending and prospecting and that adding some innovation to a focus on core services is as valuable as adding extra weight to efficiency in the search for new markets and products. Although it has been argued that strategy is enduring (Miles and Snow 1978), organizations that develop capabilities in the pursuit of a number of strategies are more capable of changing their strategy to suit the environment (Abernethy and Brownell 1999; Zajac and Shortell 1989). This departure from the Miles and Snow framework is important because a key characteristic of the public sector is frequent changes in political authority that affect the strategies of public agencies (Rainey 2010).

Public managers must typically trade off different performance outcomes in the management of their organizations (Rainey 2010; Walker, Boyne, and Brewer 2010). Adapting a single strategic stance may compromise these trade-offs. Studies using a number of performance dimensions offer some support for this argument. In studies of school districts, defending is the approach most suited to achieving high student pass rates (Johansen 2007; Meier et al. 2007; Meier et al. 2010), while prospecting and reacting can assist college-bound students but detract from the equity objectives associated with the attainment of black students (Meier et al. 2007). Prospect ing trumps defending in the athletic achievements of university sporting programs (Cunningham 2002), while prospecting is associated with the achievement of growth, and reacting is tied to hospital market shares (Zahra 1987).

**Finding 2. Prospectors and defenders outperform reactors.**

Prospecting and defending strategies result in better organizational performance than reacting strategies. Prospecting and defending are deliberate strategies selected by the organization. Reacting, by contrast—while emanating from decisions made by organizational leaders—is not fully owned because it comes from responding to instructions from organizations and constraints in the external environment. Boyne and Walker (2004) argue that a reacting strategic stance might be beneficial in the public sector based on the need for and demands of citizens.

The public sector studies examining the relationship between strategy content and performance are consistent with Miles and Snow’s propositions—that is, prospecting and defending outperform reacting (Boyne and Walker 2010). A subanalysis of the studies examining the bivariate relationship between strategy content and performance reports 55 percent weighted and 66 percent unweighted support scores (full results available upon request). The strategies related to prospecting, such as exploring new markets and services, and those related to defending, such as sticking with the existing pattern of services while trying to enhance their efficiency, have been shown to link positively with performance (Johansen 2007; Meier et al. 2007; Naranjo-Gil 2009). The extensive examination conducted by Andrews, Boyne, Law, and Walker (2012) of the effectiveness of Miles and Snow’s framework in Welsh local governments reveals these strategies’ relative contributions to performance to be roughly equal. Defending has been proven successful on a number of occasions in single-purpose organizations (most notably in Texas school districts by Johansen 2007; Meier et al. 2007; and in state-owned enterprises by Tan 2002).

Public agencies are more likely to reach higher levels of organizational performance when they are given some freedom to determine the correct mix of prospecting and defending that suits their circumstances.

Reacting has proven a strategic “lemon” on many occasions, and it is typically a poor performer (Andrews, Boyne, and Walker 2006; Castle 2003; Johansen 2007). Such poor performance is attributable to a lack of consistency in orientation toward the environment that results in information gathering being causal and random (Daft and Weick 1984). Therefore, public agencies are more likely to reach higher levels of organizational performance when they are given some freedom to determine the correct mix of prospecting and defending that suits their circumstances. Public organizations that primarily take instruction from major stakeholders’ demands and organizations in the environment are likely to drift toward a reactor strategic stance and will likely see a decline in their performance.

**Internal Alignment and Strategy**

While pursuing a number of strategies in a complementary fashion is a route to greater organizational achievement, it is also likely that one stance will predominate as internal and external circumstances dictate, given that changes in strategic stances do not happen rapidly (Abernethy and Brownell 1999; Zajac and Shortell 1989). This will drive relationships among strategies, processes, structures, outcomes, and the external environment.

Public sector scholars have built on the Miles and Snow framework to include the notion of strategy “absence,” which is associated with reacting (Andrews, Boyne, Law, and Walker 2011, 2012). They have developed Inkpen and Choudhury’s (1995) work on strategy, which demonstrates that strategy processes can be lacking. Absence
has been typified as having no discernible process; it can arise from large-scale change or because a deliberate choice has been made to not have a coherent strategy. While Miles and Snow argue that reactors have an inconsistent strategy, research on public sector organizations has drawn the notion of an absence of strategy processes into the framework. Empirical evidence on the absence of process has been shown to be associated with reactors and poorer performance (see Andrews, Boyne, Law, and Walker 2009b, 2012).

The studies reviewed point toward the legitimacy of some combinations of strategy, strategy processes, and structure for the achievement of a higher level of organizational performance suggested by Miles and Snow. Thirteen studies examined the relationship between internal alignment, strategy, and performance, reporting a strong support score of 65 percent (weighted and unweighted). The evidence related to strategy processes and structure is now elaborated for prospectors and defenders.

Finding 3: Prospecting and incremental strategy processes offer a route to organizational success.

A match between prospecting and incremental strategy formulation produces a strong performance effect, as suggested by Miles and Snow (1978). This suggests that a strategy of innovation can be supported by negotiation with key stakeholders inside and outside the organization that permits flexible responses to circumstances as they arise (Andrews, Boyne, Law, and Walker 2011, 2012). The findings are stronger for strategy implementation than for strategy processes and in keeping with the expectations across strategic stances, as outlined in table 1 (Andrews, Boyne, Law, and Walker 2012). This is because incrementalism implies adapting to new circumstances and is associated with innovation. The findings on the role of incrementalism in a strategy of prospecting are reflected in other studies. For example, a prospecting strategy has been shown to overcome rigidity in relation to the problems related to rules, rules gone wrong, and delays generated by red tape (Walker and Brewer 2009). In a similar vein, Johansen (2007) shows how organizations led by female managers that are associated with incremental organizational characteristics, such as participation and shared decision making, pursue prospecting to achieve superior performance.

The evidence from the Welsh U.K. studies examining process indicates that implementation leads to more statistically significant relationships than strategy formulation processes (Andrews, Boyne, Law, and Walker 2011, 2012). Findings from these studies suggest that as long as an organization has a deliberate strategic stance (i.e., defending or prospecting), it does not matter which formulation process is adopted. However, a good strategy requires appropriate implementation. A prospector must consistently match its strategic stance with incrementalism in the formulation and implementation phases. Teasing out these findings points toward the importance of implementation style and implies that less attention can be paid to formulation.

Finding 4: Defending, rational processes, and centralized structures lead to higher organizational performance.

Miles and Snow (1978) argue that centralized organizations provide the most fruitful approach for a defender, offering tight control over internal operations. A prospector would be better suited to decentralization, which would permit organizational subunits to respond in innovative ways to new circumstances and opportunities. Public sector studies (Andrews, Boyne, Law, and Walker 2009a, 2012) have followed the organizational sociology literature in interpreting structures as the patterns or rules, roles, and relationships between organizational actors (Dawson 1996). More precisely, they have focused on the extent to which strategic decisions are made by the chief executive and senior management team (Hage and Aiken 1967). Decision making at the apex of the organization is indicative of a strong hierarchy and centralization, whereas decentralization is characterized by the involvement and participation of all or most of the staff in the strategy process.

The merits of combining strategy with decision-making and strategy processes are clear for defenders (Andrews, Boyne, Law, and Walker 2009a, 2012). Defenders’ rational formulation and implementation processes are more likely to be successful in hierarchical organizations that engage in centralized decision making by providing the top management team with a planned and coordinated approach to the development and implementation of strategies (Meier et al. 2010). These findings are consistent with the arguments of Burns and Stalker (1967) and Miles and Snow (1978) on the effectiveness of mechanistic organizations in which power and processes are tightly controlled in pursuit of a fixed strategy of stability and efficiency.

External Alignment and Strategy

The social and economic conditions facing organizations have long been shown to influence effectiveness (Thompson 1967), explaining up to one-third of the performance of public agencies (Andrews 2004; Andrews, Boyne, Law, and Walker 2005). Dess and Beard’s (1984) long-standing and widely validated framework focuses on three aspects of the environment: resource munificence, complexity of service needs, and the rate of change or dynamism—thereby usefully extending Miles and Snow. Munificent, simple, and unchanged environments produce successful performance outcomes, whereas resource-scarce, dynamic, and complex environments harm performance. A limited number of studies have examined evidence on the external environment in relation to the Miles and Snow typologies. The five studies reported in table 1 offer partial support—the unweighted support score is 54 percent, but the weighted is 42 percent. While these results offer only limited support, the evidence points toward some preliminary findings in public organizations.

Finding 5: Strategies work best in stable environments.

When strategy content is included alongside the external environment, several conclusions can be suggested. Complex conditions in the external environment reduce the effectiveness of all types of strategy content, and performance falls for organizations engaged in prospecting, defending, and reacting (Andrews, Boyne, Law, and Walker 2012; Owens and Kukla-Acevedo 2012). This suggests that strategies work better when the technical environment is simple. This offers support for Miles and Snow’s argument that defending operates better in a straightforward environment. However, it contradicts their argument that prospecting works best in complex and dynamic environments. The model presented by Meier et al. (2010) includes overall examination passes and pass rates for high-achieving
The research findings offer further evidence of the futility of reacting. Andrews, Boyne, Law, and Walker (2012) indicate that a reactor’s performance falls further when the environment is dynamic, perhaps because in such an environment managers are not able to read or respond to rapid change or keep pace of the shifting strategic priorities emanating from the external environment.

Finding 6: Incremental implementation styles overcome complex and dynamic environments.

Incremental strategic implementation processes work better in complex and dynamic environments (Andrews, Boyne, Law, and Walker 2012), probably because of the adaptive and flexible nature of the incremental processes that are needed to deal with the challenges that emerge from these types of environments. In the face of resource scarcity and complex and dynamic environments, an absence of strategic implementation processes worsens performance outcomes, making this an ineffective implementation style. Again, this evidence points toward the importance of examining strategy implementation, indicating the need for more systematic information on this facet of strategic management.

Discussion

Strategic management is concerned with the means and ends of service delivery and with organizational behavior, action, and performance. These themes have become increasingly prevalent among public organizations in response to changes brought about by reform agendas and citizen demands. In this article, six key findings on strategic management and performance were derived from a critical review studies making use of the Miles and Snow (1978) typology in public organizations. The integration of these research findings in the literature generally supports the framework. The evidence, however, was not evenly distributed across the alignment of strategy, process, structure, and environment. The strongest support for Miles and Snow was for the relationship between strategy content and performance and, for bivariate relationships, between strategy content and processes or structures. However, the more the question of alignment across strategy, process, structure, and environment was placed under the empirical microscope, the fewer studies were uncovered, leading to less comprehensive findings. Theoretical implications are now discussed, followed by methods and practice.

Theory

The Miles and Snow framework covers the three main options that are open to a public organization seeking to meet the expectations of its external stakeholders: search for something new (prospect), stick with the existing pattern of services (defend), or await instructions (react). The notion of alignment is central to these strategic archetypes. Alignment remains pertinent to the management of public organizations, even several decades after Miles and Snow penned their theory. As would be expected, empirical testing has moved the field forward, and scholars have suggested two important changes. First, it has been argued that organizations display multiple strategies. Strategies are not categorical, and defenders and prospectors are considered opposites. Organizations that possess facets of both defending and prospecting display the characteristics of analyzers. Second, the reactor strategic stance has been also associated with strategy absence, which moves beyond typifying them as not having well-defined or consistent strategies to include processes.

Miles and Snow propose that their strategy archetypes are generic. The evidence reviewed here offers support for parts of this theory. There has been some attempt to test the full theory in public organizations (Meier et al. 2010), but further research is required. Empirical tests of the full framework are also required. While this is demanding of data, it should be possible to test facets that have received less attention along the way, most notably, the studies that examine the relationships between strategy content and the environment. In testing the validity of the full framework, attention must be directed to questions of endogeneity to tease out whether high-performing organizations adopt alignment across strategies, processes, structures, and environment and whether high performance is led by this alignment. If problems of endogeneity remain, public management scholars may wish to develop strategic management frameworks built out of public service organizations rather than looking to applying generic management theories to public organizations.

Methods

A comprehensive examination of Miles and Snow that can tease out the complex questions of alignment will necessitate large data sets that capture strategy, structure, process, environment, and performance. Such a data set would need to cover large numbers of organizations in different settings. It would also need to be sufficiently robust for multidirectional interactions to be performed in multiple regression equations to test alignment or run structural equation models. Good measurement is also required. Many propositions have been developed and implemented regarding new ways to operationalize Miles and Snow’s strategic archetypes. However, no systematic tests have been undertaken to examine whether these alternative measurement techniques result in different associations with performance. Studies could, for example, examine the reliability and validity of paragraph and scale measurement approaches.

Practice

The evidence generated by this review implies the following road map for public organizations. Organizations should adopt a
mixture of consistent and identifiable strategies that are selected based on an organization's desired actions rather adopting a strategy based on responding to voices in the external environment—defenders and prospectors outperform reactors in the majority of cases. Adopting a mix of strategies also allows organizations and managers to trade off differing performance demands. A number of key internal strategic contingencies can be traced for prospectors and defenders. In prospecting organizations, incremental strategy processes offer a route to success, whereas for defenders, rational processes and centralized structures are a better match. Strategies work best in stable environments, although incremental implementation styles overcome the difficulties associated with complex and dynamic environments.

The effectiveness of these strategies is dependent on their combination and the context in which they are implemented. They are a road map, not a prescribed route. Managers must pay attention to the connections between these contingencies to achieve the best outcome from whatever strategy their organization has adopted. Given that these relationships are complex rather than simple and uniform, it is conceivable that different strategies will be equally effective, depending on the internal and external circumstances of public organizations. One important issue to emerge from this stream of work on strategic management is that strategy implementation matters, but more knowledge needs developed in this area.

This evaluation points toward six findings that are pertinent to the management of public organizations and their strategies. They also have important policy implications—all of which are implicit in the use of a contingency framework, indicating that routes to higher levels of achievement are dependent on combinations of internal practices and environmental conditions. Given that organizations should choose the strategic stance that best suits their circumstances, the findings indicate that the logic laid out in many reform pronouncements from governments for achieving improved organizational effectiveness is fundamentally flawed. Higher levels of government that develop reform frameworks for lower levels must consider the circumstances they face, as organizations need latitude to adapt such reforms to their setting and attain high performance outcomes.

Conclusion
Research on the strategic management of public organizations has grown apace over the last two decades. However, it is important to be cognizant that the findings and recommendations for the practice of strategic management are drawn from limited data in only a few geographic locations (the United Kingdom and United States) and largely local government settings. These studies did not fully test for the effects of performance on strategy, nor did they examine the potential for unobserved effects on strategy selection. While the extension to test the performance effects of the Miles and Snow framework represents an important advancement in previous work, it has typically been conducted using aggregate measures of organizational performance, yet relationships may pan out in alternative ways if future research considers different performance dimensions.

The findings offered here remain cautionary until more systematic research is undertaken. However, evidence from other sectors points toward the veracity of Miles and Snow’s arguments, and the growing body of public sector evidence should be extended to better inform practice and build theory.

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Notes
1. Miles and Snow's typology has been widely examined and shown to be of value in empirical studies of private firms. See Conant, Mokwa, and Varadarajan (1990) and DeSarbo et al. (2005) for empirical studies and Ramos-Rodriguez and Ruiz-Navarro (2004) and Zahra and Pearce (1990) for reviews.
2. These concerns ran deep through the early strategic management literature, prompting some to question the notion’s applicability to public organizations (Ring and Perry 1985).
3. It might be expected that a literature search on strategic management in public organizations would identify many more articles. Indeed, this is the case: a Web of Science search of article titles and abstracts using “strateg* management” undertaken in December 2012 identified around 1,000 articles in the Public Administration section of the Social Science Citation Index. However, relatively few examine Miles and Snow and performance.
4. Alternative approaches can be adopted for the purpose of critical review. However, the majority of these techniques require the reporting of correlation matrices, which are not widely included in public administration studies. Unlike studies using correlation coefficients, the support score method reports statistically significant associations at the p < .05 level, from regression models that control for other variables, thereby reducing concerns about bias arising from spurious relationships (Damanpour 2010).
5. Some authors have offered alternative hypotheses, and their theorization has been respected. For example, Tan (2002) theorizes that defenders would be the highest performers among Chinese state-owned enterprises.
6. Theoretical argument on the redundancy of analyzers has not been fully reflected in the operationalization of strategy content. Scales have been developed for prospectors, defenders, and reactors. Scholars have tended to focus on these three strategic stances rather than modeling the point at which a balance of defending and prospecting equates with analyzing. However, an organization scoring high on the defender and prospector measurement scales (typically seven-point Likert scales) would correspond with an analyzer. Andrews, Boyne, Law, and Walker (2009c) and Meier et al. (2007) note positive correlations between defenders and prospectors and negative correlations between these two stances and reacting.
Further research is required here.
7. Studies of firms have similarly found different strategic stances associated with different dimensions of performance and have noted the potential value of combining strategies (Parnell and Wright 1993).
References