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VISIONS OF LEADERSHIP: AN EXAMINATION OF HOW IT PROFESSIONALS PRIORITIZE LEADERSHIP ATTRIBUTES

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ABSTRACT

Chief Information Officers (CIOs) are a transforming public sector leadership group. CIOs have emerged to connect business units in an organization with information technology staff. They are the linchpin between the seemingly disparate, and often contentious, components of an organization. The potential impact of this population is high but their characteristics and perspectives have been only nominally explored.

By investigating leadership within the public sector IT profession through the application of Q-methodology and use of a well accepted competing values framework, this article contributes to both the leadership and IT scholarship. Using a sample of local government CIOs from North Carolina, Q-methodology is used to examine how individuals view and operationalize the concepts of leadership in their own work and careers. The research reveals four dominate leadership conceptualizations amongst local government IT professionals. These groupings demonstrate high variation in how IT professionals understand and prioritize leadership attributes.

Keywords: chief information officers; leadership; local government; public sector; competing values; Q-methodology

INTRODUCTION

The public sector has made incredible strides in technology over the past decade. The investments in information technology (IT) have brought many states, counties, and municipalities into standing with other leading private sector companies across the nation. In virtually every governmental jurisdiction, information technology is playing a vital role in each department and function of the organization. In order to assist the public

sector in moving beyond the status quo and leveraging technology as a means of delivering more efficient and effective services, as well as to maintain and gain a competitive economic development advantage, the role of Chief Information Officers (CIOs) have emerged as a mechanism to connect the business units in an organization with the information technology staff. In essence, CIOs are the linchpin between these two seemingly disparate, and often contentious, components of an organization.

In the past few decades, CIOs have been revered as supreme organizational aligners and lamented as over-titled technocrats. Regardless of the hype and hyperbole surrounding the role of the Chief Information Officer, one thing is certain: the job of CIO is always demanding and often difficult. The CIO is responsible for disseminating the critical technology plans to senior executives in order to engender their support, while maintaining one foot firmly entrenched in the realm of current and emerging technologies [16]. The CIO must possess the vision for the future while keeping an eye on the historical legacies of the organization. Too often, Chief Information Officers are forced to take sides between the business units and the information technology department, when, in fact, their role is to build the bridges between these organizational silos [13]. The role of the CIO is critical and the job requires skillful navigation of the various minefields and bear traps that can ensnare and destroy technology projects.

As established as the role of CIO is within the private sector, it has been gaining status in the public sector over the past decade. The role of the CIO has been adopted from the private sector as one way to navigate the ever-present and ever-changing reality of public sector information technology. As early as 1981, the title Chief Information Officer emerged in the private sector literature as the defined leadership role for information technology [27]. Extensive research has been conducted on the attributes and characteristics of successful CIOs in the private sector [13, 16, 2]. Some of the most commonly cited traits include being a generalist, having significant power and authority in the organization, and providing a common vision for the implementation of strategic information technology [27]. Based on the success of the CIO in providing leadership and status to information technology projects in the private sector, the federal public sector followed suit by institutionalizing the position with the passage of the 1996 Clinger-Cohen Act.

Now as public sector information technology investments are becoming increasingly strategic at the federal, state, and local government levels, the existence of the CIO and a strategic planning structure becomes critical to facilitating technology implementation. The importance of successful IT projects and their requisite investments is as critical in the public sector as in the private sector, evidenced by the Clinger-Cohen Act and solidified by the rapid proliferation of CIOs in a variety of public organizations. Additionally, public sector CIOs and IT directors are facing increasing challenges and responsibilities in the era of new governance which require new leadership attributes and skills. As the lines between traditional functional services and departments begin to blur, the IT leadership is charged with managing

the constantly expanding role for IT within government and providing the leadership necessary to successfully capitalize on technology investments. Although there is ample recognition and prescription of these new leadership roles and responsibilities for CIOs, there is a lack of empirical understanding of how IT professionals currently conceptualize leadership within their own field.

This article seeks to enhance that narrow body of work and add new knowledge through leadership analysis specific to the public sector IT profession by the application of Quinn's Competing Values Framework and the use of Q-methodology [25, 26]. Using a sample of local government CIOs from North Carolina, Q-methodology is used to examine how individuals view and operationalize the concepts of leadership in their own work and careers. This research actually shifts the lens of perception to the participants by using a previously validated instrument in a new respondent-focused technique. McKeown and Thomas [19] note that Q-methodology offers a "systematic and rigorously quantitative means for examining human subjectivity." This form of analysis allows the respondents to conceptualize their own definitions of leadership and provides the opportunity for researchers to assess perceptions and situational factors that influence such concepts.

By discovering four dominant leadership conceptualizations amongst local government IT professionals, this research contributes to the empirical knowledge base in the fields of leadership and IT. Investigating leadership within a group of emerging leaders, such as local government CIOs, offers insight into the variations between and within groups of like-minded employees who are experiencing an increase in authority and responsibility.

This paper progresses with a brief review of the leadership literature, looking at a range from general to CIO specific scholarship. Then, we review the methodology employed in this research including the sample and the unique contribution of Q-methodology. Finally, we present findings and discussion and offer a conclusion with future research directions.

LITERATURE REVIEW

Scholarship on leadership is extensive; possibly one of the most researched social phenomenon in all of the behavioral sciences [3, 12]. Leadership has been studied at numerous levels and from numerous disciplines. For purposes of organization, we will briefly highlight the research on leadership at three different, though inter-related levels: general leadership, public sector leadership, and professional or occupational

leadership. This review is not intended to be a comprehensive summary of the immense amount of research on the topic, rather it highlights relevant findings and key themes [for a more complete review of the literature see 15, 3, 20].

Research and writing about leadership has often been prescriptive in nature and lacked strong theoretical grounding. Case studies, individual profiles, and observations have dominated the research methods. Leadership research has often changed to be consistent with the contemporary management movements and, at an extreme, has been criticized as being fads.

Scholars have used a variety of classification mechanisms to organize this diverse and ever growing body of research. For example, Jago [15], in reviewing the literature on leadership categorizes theories of leadership along two dimensions: universal versus contingent theories and traits versus behaviors. Based on this, he organizes the theoretical perspectives into a four-fold typology: “(1) the focus on a universally appropriate set of leadership traits, (2) the focus on a universally appropriate behavioral style, (3) the focus on situationally contingent leadership traits, and (4) the focus on situationally contingent behavioral styles.” [15, p. 315]. More recently, Ingraham, Sowa, and Moynihan [14] argue that the conceptual models of leadership style and behavior can be summarized into four broad categories: hierarchical, command/control model (commonly associated with large bureaucratic entities, a model that emphasizes rules, regulations, structure, and stability); transactional leadership (moves toward more recognition of leader/subordinate exchange in the interests of rewarding desirable behavior); transformational leadership (moves beyond the hierarchical and transactional leadership models, focusing more proactively on linking leadership or leader behavior to positive change); and, integrative leadership perspectives (argue that leadership is a function of both leader attributes and the results that leaders (or leadership teams) can create by altering organizational conditions and capacities). Consistently what can be seen is that the variety and dimensions of what is or should be part of leadership is evolving and there is little consistent agreement on the core theoretical dimensions, in part due to the lack of consistent and rigorous empirical investigation.

General leadership research has often been drawn on for explaining, understanding, and training within the public sector. There is a call to consider how public sector leadership, that is leadership aimed at solving public problems and grounded in public values, is distinct [10]. As public governance problems continue to increase in complexity, the need for strong and

effective leadership throughout public organizations becomes critical. Understanding how leaders within public organization conceptualize and employ different leadership styles can help add to the dialogue, as well as to policy, administrative, and managerial aspects of public management. Ingraham, Sowa, and Moynihan note “The simple fact that leadership is frequently referenced as crucial to performance lends credence to our argument that a better understanding of leadership is the next step in developing a more complete and nuanced understanding of management and performance in public organizations.” [14, p.167]. They find that “No one leader can move a mountain. Instead, leadership needs to be at several levels of the organization to create capacity and to achieve results.” [14, p. 160].

Like general leadership research, public leadership research has suffered from criticisms of limited empirical research with limited studies involving large n samples and methodological sophistication. Within the field of public leadership, there has been evolving perceptions of the role of leaders, including entrepreneurial [22], integrative [14], or innovative [8]. Research on public leadership is an evolving field that is balancing the challenge of defining leadership within the public arena and around public values while understanding the scope, jurisdiction, function and character of leadership [10].

An entire body of leadership research exists and offers various theories and positions on what engenders effective leadership, how to identify and cultivate it, and when leadership is most paramount in an organization. Increasingly, there has been research specific to professional or occupational groupings. Often these are more prescriptive of the skills, traits, or competencies needed to be successful within a specific profession. Though these studies draw upon both the general leadership and public leadership literature, they are more focused in nature. The level to which public and private sector distinctions are made within the literature related to certain professions, such as IT, HR or finance, is often far more limited in nature. As will be seen in the following review, much of the discussion for CIOs is centered on the private sector with limited attention or quantity of research focused on distinct needs or differences for CIOs operating in the public or nonprofit arena. It may be that the skills are universal but, given the historical arguments that highlight distinctions between sectors, it raises some serious questions.

CIOs are in unique and challenging positions within their organizations and within the ever-growing population of their peers. In 2006, top Gartner analysts indicated that CIOs and IT were as important to strategic organizational enhancement as they were during the dot

com boom. The rate of growth of CIO positions in the public sector speaks to the importance of the role, and more importantly, the shift from traditional operational roles for IT professionals to emerging roles as leaders and strategic value creators.

Karahanna and Watson [16] discuss the unique nature of CIO leadership as being a hybrid of operational and technical efficacies balanced by classic business management skills, such as relationship, change, and people management. This balancing act is often skewed by organizational culture and situational contingencies. However, the penultimate role for the CIO according to recent studies is to serve effectively in both the strategic and tactical realms of the organization, thereby managing the competing values between a hands-on technologist and visionary leader [31]. Furthermore, in 2009, IBM released a study detailing the competencies of the effective CIO based on a study of over 2,500 private and public sector CIOs [13]. The findings of the study highlight the need for the CIO to serve in both operational and strategic capacities, with a clear focus on realistic innovation, creating organizational value, and enhancing financial investments. Each of these areas of focus speak to the need for the CIO to perform higher-level managerial and leadership roles within their department, as well as for the organization. In fact, a common theme across the body of CIO leadership research is the need for the CIO to become operationally excellent internally (within the technology realm), and to become politically astute and powerful externally (i.e. across the organization).

According to Gottshalk [9], there are nine roles performed by CIOs including informational, decisional, interpersonal, chief architect, change leader, product developer, technology provocateur, coach, and chief operating strategist. As CIOs navigate through their daily operations, they shift between these roles, but there is a pervasive comfort zone for individual CIOs to which they will retreat in times of uncertainty or when asked to conceptualize ideal constructs of CIO leadership. This research conducted using Quinn's Competing Values Framework and Q-methodology forces the CIOs to choose between a variety of competencies aligned with the roles noted by Gottshalk in order to determine which roles the CIOs would ideally embody in their organization.

METHODS

Q-Methodology

Q-methodology is a quantitative research technique that identifies and categorizes individual

perceptions and opinions, as well as groups like-minded individuals based on those perceptions [17]. The method requires respondents to express their perceptions and preferences by rank-ordering statements (called Q-statements). The completed ranking of statements (the Q-sort) reflects an individual's values and trade-offs within a given topic. Correlation and PCA factor analysis are then used to identify respondents who have rank-ordered the statements in similar patterns. Q-methodology groups respondents with common perceptions or attitudes [6]. In this study, Q-methodology is used to capture those statements most valued by each group, as well as those statements the respondents are most willing to trade-off in order to achieve higher levels of concordance with their personal leadership styles. The Q-methods approach is employed using statements drawn from the competing values framework (CVF) which was developed by Robert Quinn and his associates. It originated from work by Quinn and Rohrbaugh (1983) and Quinn (1988); development of the instrument included consultation with management scholars as well as administrators and union representatives [29].

The Competing Values Framework offers an instrument that provides the flexibility to capture an array of dimensions and constructs which tap the varied dimensions and skills that are associated with leadership.

"The combination of assessing management skills and leadership skills together rather separately assessing these skills is also a strong point of this model or framework [Competing Values Framework], as it is often argued that good managers have to demonstrate both strong fundamental management skills and leadership skills to motivate their subordinates [31]." [29, p. 10]

The Competing Values Framework has been used and tested in a variety of settings. Belasen and Frank (2008) observe that "The Competing Values Framework (CVF) of managerial leadership has recently received renewed attention from organizational researchers and leadership development scholars (Belasen, 2007; Cameron and Quinn, 2006)." [4, p. 127]. Given the testing and support for this instrument and these statements, it was selected to be used as the basis of this research, although implemented with Q-methodology as opposed to the standard Likert Scale design.

The majority of leadership research has used traditional case studies and r-methods, particularly survey research, in which respondents' answers are independent of one another. The Competing Values instrument uses a 7-point Likert scale to create individual scores in each of his eight dimensions of leadership [25]. Conversely, the respondents in this study ranked each item in relation to one another as Q-methodology requires. This forced

ranking allows the individuals and the researcher to discern items of critical influence and items of negotiability. The goal of Q-methodology is to analyze the patterns created by the items of most and least influence, not to analyze specific individual information about a given question or topic [7]. Furthermore, Q-methodology allows the researcher to test human subjectivity, the traditional Likert methods often produces score inflation for individual items, while this methodology requires individuals to evaluate each item in relation to the other items. In a small sample study of respondents (n=8), the average respondent on the Quinn 7-point Likert scale did not rate any statement below a 4 [6]. This finding confirms that Q-methods offers a more comprehensive picture of an individual's leadership pattern by forcing the individual to make trade-offs and relational rankings.

The Q-Sample

The Q-sample consists of statements taken from the CVF. Quinn et al. [25] developed a list of thirty-six items representing eight dimensions of leadership: mentor, broker, director, monitor, producer, innovator, facilitator, and coordinator. The instrument contains thirty-six statements related to ideal leadership, as noted below.

1. Come up with inventive ideas
2. Exert upward influence in the organization
3. Clarify the need to achieve unit goals
4. Continually clarify the unit's purpose
5. Search for innovations and potential improvements
6. Make the unit's role very clear
7. Maintain tight logistical control
8. Keep track of what goes on inside the unit
9. Develop consensual resolution of openly expressed differences
10. Listen to personal problems of employees
11. Maintain a highly coordinated, well organized unit
12. Hold open discussions of conflicting opinions of groups
13. Push the unit to meet objectives
14. Surface key differences among group members, then work participatively to resolve them.
15. Monitor compliance with the rules
16. Treat each individual in a sensitive, caring way
17. Experiment with new concepts and procedures
18. Show empathy and concern when dealing with employees
19. Seek to improve the workgroup's technical capacity

20. Get access to people at higher levels
21. Encourage participative decision making in the group
22. Compare records, reports, and so on to detect discrepancies
23. Solve scheduling problems in the unit
24. Get the unit to meet expected goals
25. Do problem solving in creative, clear ways
26. Anticipate workflow problems, avoid crisis
27. Check for errors and mistakes
28. Persuasively sell new ideas to higher ups
29. See that the unit delivers on stated goals
30. Facilitate consensus building in the work unit
31. Clarify the unit's priorities and direction
32. Show concern for the needs of employees
33. Maintain a 'results' orientation in the unit
34. Influence decisions made at higher levels
35. Regularly clarify the objectives of the unit
36. Bring a sense of order and coordination to the unit

To construct a measurement model of leadership, they asked respondents to indicate their extent of agreement or disagreement with each item using a seven-point Likert scale. We asked respondents to sort the statements along a continuum from most strongly disagree (-5) to most strongly agree (+5).

The P-Sample

The P-sample (person sample) includes public sector CIOs, IT directors, and IT senior staff from North Carolina local governments. Local governments provide core services to citizens in an increasing role. Additionally, the role of technology in these jurisdictions is paramount as governments cope with the challenges of transparency, access, participation, and accountability in this digital age. The Q-sorts were administered between May 2005 and January 2009. The sample consisted of individuals registered for a training class across those years. In all, 190 Q-sorts were administered, all of which were usable. However, when using Q-methodology, too large of a sample size is "counter-productive" and can "smother operant factors" according to Brown [5]. A short questionnaire was distributed to all 190 participants to gather demographic and contextual information, such as tenure in position and budget allocations to ensure p-sample variation. Sixty-seven (67) participants responded to the questionnaire and, thus, were included in the p-sample. The p-sample is sufficiently diverse with respect to each of the major demographic factors. In addition, the restriction of the sample to North Carolina local government IT professionals was intentional, in order to

serve as a control for state variations, as well as a mechanism to restrict the p-sample to an appropriate size.

Of the 67 participants included in the p-sample, 100 percent of the participants are public sector CIOs, IT directors, and senior IT staff who work for local governments in North Carolina. Each of the respondents works in public sector information technology, with 71.6 percent serving as IT directors or Chief Information Officers, while the remaining 28.4 percent serve as senior IT staff. 20.9 percent are women and 80.1 percent of the respondents are men. The sample contained seven racial and ethnic minorities. On average, respondents had 15.06 years of work experience in the public sector, with 11.9 years in their current position (minimum of 1 and a maximum 33 years). Seventy-nine percent had previous experience working in the private sector with an average of 8.06 years of work with a private organization. Respondents had 12.76 years and 18.36 years of managerial and technical experience, respectfully. They came from jurisdictions that varied in population from 200 to one million with an average of 139,505 citizens.

The number of employees in the IT department ranged between 1 and 60 with an average of 11.22.

Analysis

We correlated the Q-sorts of all participants to create a 67 by 67 matrix. PCA factor analysis was used to analyze the matrix. The factors were rotated by varimax criteria resulting in four factors with ten or more significant loadings of 0.32. The loading cut-off was determined by using the multiplier for the desired level of statistical significance (1.96 for $p < 0.05$) divided by the square root of the number of statements. Respondents who load significantly on a factor hold similar leadership ideals or constructs. Table 1 displays the factor loadings of each Q-sort for the four factors.

Factor arrays, a composite Q-sort, and factor scores are the basis for interpretation in Q-methodology. Therefore, each of the factor loadings is weighted and then combined in order to create a composite array. Table 2 demonstrates the factor scores for each of the statements and visually demonstrates the emergence of patterns based on leadership perceptions.

Table 1: Factor Loadings

QSORT	Factor 1	Factor 2	Factor 3	Factor 4
1	0.6918X	-0.0071	0.2184	0.1588
2	-0.0205	0.1073	0.2272	0.3277X
3	0.2935	0.3817	-0.4579	0.5523X
4	0.2278	-0.3183	0.4777	0.5403X
5	0.0536	0.8859X	0.0625	-0.1031
6	0.0925	0.8679X	-0.0123	-0.1883
7	0.4167	-0.2171	0.0508	0.6306X
8	0.2481	-0.3086	-0.0044	0.7957X
9	0.3103	-0.2331	0.0071	0.8443X
10	0.3876	-0.2465	-0.0573	0.7850X
11	0.5231	0.0459	0.0264	0.5553X
12	0.5496X	-0.4217	-0.0932	0.3812
13	-0.5810X	-0.0953	-0.2788	-0.3298
14	0.1493	0.4780X	0.1912	0.4196
15	0.4427	-0.6809X	-0.0107	0.1018
16	0.4749X	-0.3012	-0.1303	0.0456
17	0.6077X	0.2569	0.1982	0.1043
18	0.3864	-0.4073X	-0.0563	0.0093
19	0.5933X	-0.3607	0.3645	-0.1020
20	0.3278X	0.1529	0.0987	0.2149
21	0.5733X	0.4395	-0.2511	0.0440
22	0.0970	0.1661	-0.0396	0.6839X

Table 1: Factor Loadings (cont.)

QSORT	Factor 1	Factor 2	Factor 3	Factor 4
23	0.2949	0.1460	0.5882X	0.3647
24	0.3594	0.2740	0.3711	0.4993X
25	0.6413X	0.0566	-0.1595	-0.0477
26	-0.0254	0.1860	0.7825X	0.1500
27	0.5349X	-0.0529	-0.2480	0.3102
28	0.1094	0.4253	-0.2863	0.5214X
29	0.5932X	0.1877	0.3169	0.3394
30	0.1160	0.5649X	-0.5158	-0.0362
31	0.6969X	0.0668	0.0767	0.3282
32	-0.0611	-0.5435	0.7354X	0.0911
33	0.4976X	-0.2938	-0.0641	0.3261
34	0.0231	-0.3517	-0.5055X	-0.3342
35	-0.1453	-0.0570	0.3047	0.6355X
36	0.1882	0.3780	0.3699	0.5049X
37	0.0857	0.4046	0.1527	0.6377X
38	0.2249	0.6365X	0.3345	-0.0969
39	0.1622	0.0813	0.6195X	0.3407
40	0.1853	-0.1272	0.2331	0.4170X
41	-0.0580	0.4059X	-0.0189	0.0370
42	0.2949	0.3984X	0.0841	0.3520
43	0.2887	0.1510	0.7515X	0.0309
44	0.6220X	-0.1123	-0.1751	0.0878
45	0.6609X	-0.0043	0.1588	0.0629
46	0.5829X	0.0366	-0.0043	0.4751
47	0.1660	0.0610	0.2318	0.6369X
48	0.4861X	-0.2480	0.4163	0.3993
49	0.5826X	-0.1051	0.5306	0.2388
50	0.4236	-0.5988X	0.1588	0.3870
51	-0.0038	-0.0664	0.3519X	0.1184
52	0.6608X	0.0158	0.1129	0.2674
53	-0.0403	0.1199	0.6795X	0.0510
54	0.3360	0.1508	0.2085	0.4023X
55	-0.1276	0.3528X	0.2013	0.1776
56	-0.0441	-0.0063	0.5447X	-0.1831
57	0.2292	0.4665	0.4781	0.5354X
58	0.1879	-0.0716	0.1162	0.5226X
59	0.7185X	0.0145	0.0622	-0.0710
60	0.1090	-0.5042X	-0.0326	0.1386
61	-0.0187	-0.0460	0.4503	0.5696X
62	0.4504X	0.2502	0.2009	0.2248
63	0.0758	0.0831	0.6514X	0.2549
64	0.3415	0.5109X	-0.0225	0.0153
65	0.3385	-0.3481	0.1978	0.6150X
66	-0.1814	0.3258	0.2373	0.5304X
67	0.1494	0.5255X	0.2765	0.3747

Table 2: Factor Scores

Statements	Factor 1	Factor 2	Factor 3	Factor 4
Come up with inventive ideas	2	2	-1	4
Exert upward influence in the organization	3	-4	1	2
Clarify the need to achieve unit goals	3	-2	1	-3
Continually clarify the unit's purpose	2	-3	-1	-5
Search for innovations and potential improvements	4	3	0	5
Make the unit's role very clear	1	-2	3	-1
Maintain tight logistical control	-3	-5	-3	-3
Keep track of what goes on inside the unit	-2	-1	0	1
Develop consensual resolution of openly expressed differences	-2	3	-2	-1
Listen to personal problems of employees	-3	3	-5	-4
Maintain a highly coordinated, well organized unit	-2	2	3	1
Hold open discussions of conflicting opinions of groups	-1	1	-2	-2
Push the unit to meet objectives	0	0	1	0
Surface key differences among group members, then work participatively to solve them	-1	1	-4	-3
Monitor compliance with the rules	-3	0	-1	0
Treat each individual in a sensitive, caring way	-1	5	-1	-1
Experiment with new concepts and procedures	0	1	-2	2
Show empathy and concern when dealing with employees	0	4	0	0
Seek to improve the workgroup's technical capacity	1	1	2	2
Get access to people at higher levels	1	-3	-1	3
Encourage participative decision making in the group	2	2	2	0
Compare records, reports, and so on to detect discrepancies	-4	-2	-3	-2
Solve scheduling problems in the unit	-4	0	-4	0
Get the unit to meet expected goals	2	0	4	1
Do problem solving in creative, clear ways	0	-1	0	3
Anticipate workflow problems, avoid crisis	-2	2	1	2
Check for errors and mistakes	-5	-3	-3	-2
Persuasively sell new ideas to higher ups	4	-1	0	4
See that the unit delivers on stated goals	1	1	3	1
Facilitate consensus building in the work unit	0	0	-2	-2
Clarify the unit's priorities and direction	3	-2	4	0
Show concern for the needs of employees	-1	4	1	-1
Maintain a 'results' orientation in the unit	1	-1	0	-1
Influence decisions made at higher levels	5	-4	2	3
Regularly clarify the objectives of the unit	0	-1	2	-4
Bring a sense of order and coordination to the unit	-1	0	5	1

FINDINGS AND DISCUSSION

In this research, participants consider what characteristics they believe are encompassed in an ideal CIO leader. Using Q-methodology, four distinct groupings of leadership emerged. The four groups are entitled Results Oriented Pragmatist, Compassionate

Manager, Leading-Edge Powerbroker, and Goal-Oriented Powerbroker (for specific defining statements, see Appendix A). The group differences are distinct and demonstrate diverse views of what a leader should be. There is no single conceptualization of an ideal leader; rather, there are many images that help us think about how leadership is viewed, dimensions that are

highlighted, and areas for improvements. These conceptualizations inform practitioners, and academicians as well, in gaining greater insight into the state and beliefs of leadership held by IT professionals. As will be demonstrated, each grouping contains specific value statements which are consistent with CIO leadership constructs and consistent with previous leadership research.

Factor One: Results Oriented Pragmatist

Those individuals loading on Factor One view leaders as internally focused individuals who identify clear goals and departmental purpose, as well as ensure goal accomplishment. The Results Oriented Pragmatist recognizes leaders as individuals that bring a sense of coordination to the unit (statements 36 and 11). They prioritize creating a working environment in which there is order, coordination, control and focus on the unit's priorities and direction (statements 31 and 6). With a clear sense of unit purpose in place, leaders need to ensure that there are clear goals which are attained (statements 24 and 29). Research supports the notion that consistent delivery on existing commitments is a core need for any successful IT department [24, 13]. This concept is not unique to the IT field; the basic measure of success for any leader is the ability to provide high quality products or services and meet stated goals. This concept holds true for private and public organizations, though the public's existing commitments and audience are often more varied and complex. The language and priority ranking of these statements may speak to a transition away from the traditional IT compliance and technical aspects only. The goal of this group could be seen as enabling the organizational vision through commitment to core department outcomes. The obvious omission in their leadership orientation is the lack of external focus and efforts on strategic new efforts and vision [11].

Results Oriented Pragmatists place lower priority on monitoring and compliance responsibilities as well as aspects related to people management. Lower concern is placed on leaders acting as the individuals responsible for technical and procedural compliance (statements 27, 22, and 7). Similarly, resolving scheduling issues is a low priority (statement 23). Interpersonal conflict, both addressing it and working with individuals to resolve between employee issues, is not a high priority for this group (statements 12, 14, and 10). In fact, no statement related to working on personnel or interpersonal aspects loaded as a top priority for the Results Oriented Pragmatist. The transition of leadership responsibility to move from compliance aspects to vision, culture, and broader outcome goals has been well documented [30].

Although the Results Oriented Pragmatist does not prioritize the full range of these leadership competencies, they do indicate a focus on results and a recognition of the need to move away from a strictly compliance orientation.

Factor Two: Compassionate Managers

In contrast to those individuals loading on Factor One, individuals loading on Factor Two place high priority on the people and relationship management responsibility of leaders. In fact, six of their top eight priority statements relate to these aspects. Much of their focus is on informal relationships within their department as a leverage point for leadership success. Compassionate Managers value caring and providing support for their employees (statements 16, 18, 32, and 10) and working to help employees solve problems that might arise within the group (statements 9 and 21). With the personnel items in line, they want to ensure that the unit runs smoothly by having a well-coordinated department (statement 11) while also looking for ways to make improvements (statement 5). This group is in line with the classic human relations model and, in many ways, breaks the mold of how IT professionals are often characterized (as technical oriented efficiency experts) [32]. Compassionate Managers prioritize classic personnel management actions to maintain a healthy, happy department and focus less on leadership competencies related to vision setting and acting to gain political support for the unit. Factor Two leadership constructs are also consistent with Luke [18] who advances that key roles for public leaders include the forming and facilitation of productive working groups. Those in Factor Two demonstrate support for leaders that prioritize participative decision making and focus on motivation within their staff.

While focused on employees within the department, Compassionate Managers do not place a high priority on being partners with or influencing people who are external to their department (statement 20, 34, and 2). Compassionate Managers maintain an internal focus for leaders and place low priority on aspects of influencing individuals with power outside the department. This lack of external focus can be seen as a serious liability to success and a substantial leadership shortfall for this group, as much of the literature on successful IT departments highlights the need for collaboration and partnership with other department heads and executives [2, 28]. Compassionate Managers place low priority on clarifying the department's purpose (statement 4). Providing clear direction and meaning for the working group is a core leadership responsibility or competency that this group is willing to trade-off. Additionally, they

do not see a high need to focus on logistical control (statement 7). While a clear focus on people and relationship management is imperative for leaders, the singular orientation of this group presents concern. Without a clear sense of direction and engagement of external stakeholders, achievement of individual and organizational outcomes may be threatened.

Factor Three: Leading Edge Powerbroker

Whereas Factors One and Two maintain a high internal focus, Factor Three represents a significant transition in priorities with an external focus. Leading Edge Powerbrokers see leaders as responsible for influencing key decision makers with innovative applications of technology.

Those that factor together in the third grouping indicate that leaders should focus on making things work in new and creative ways while not being troubled with personnel problems or department outputs. The Leading Edge Powerbrokers believe that leaders need to work to create new efforts and to influence those outside the department to gain support (statement 5, 1, 28, 20, and 34). In addition, leaders should work to solve problems in creative ways (statement 25). This is in line with literature on transformational leaders who aim to provide intellectual stimulation; “transformational leaders stimulate followers to be innovated problems solvers within a given “vision” [18, p. 26]. This is also consistent with the critical competencies being promoted in the CIO literature of innovation and building a powerbase [13, 21]. While IT professionals have often garnered criticism for not being savvy at creating a strong base of support with those who have power and influence, this group recognizes that leaders need to commit time to these activities [17]. They prioritize gaining a seat at the table to leverage resources and see that innovation is an organizational driver which is a key part of a CIO’s leadership responsibility.

While Factor Three is focused on new and creative ideas, they place much lower priority on unit clarification and working with their staff on personal problems and group differences. They see that leaders should be willing to trade-off time dedicated to clarifying outcomes and objectives of the unit (statements 35 and 4). This may be because they are focused on the ‘new and the next,’ not on the core of the activities they perform. Additionally, lower priority is placed on spending time on personnel and interpersonal issues and concerns (statements 14 and 10). With a high external focus, Leading Edge Powerbrokers view time spent on internal people management as less critical. Leading Edge Powerbrokers may find that they are in trouble if they fail

to ensure that their division knows and achieves current goals and works well as a team, both critical attributes for demonstrating competency and strategic value to stakeholders.

Factor Four: Goal Oriented Powerbroker

Distinctive to Factor Four is the focus on both the internal and external roles of leaders, including influencing external decision makers while clarifying unit objectives and the need for goal attainment. The Goal Oriented Powerbroker is concerned with exerting influence on stakeholders outside their own unit. They see the need to market and develop support for their division as part of their leadership role (statements 34, 2, and 28). Factor Four also recognizes the criticality of making unit goals and priorities clear (statements 3 and 31). With a clear direction and a focus on influencing decision makers, individuals in this grouping also indicate that leaders should focus on making improvements to what they are already working to accomplish (statement 5). They see a leader’s ideal role as having a seat and a strong voice at the senior management table. Consistent with the literature, those in Factor Four believe that a leader needs to ensure that peer department heads and senior management see the value of technology and are willing to support it [11, 31]. Leaders, as conceptualized by this group, are seen as people who build the internal and external partnerships needed to be successful within their own department and the broader organization.

While Goal Oriented Powerbrokers focus on creating a clear direction, they are less likely to view compliance aspects, such as monitoring rules or exerting logistical control, as core to a leader’s role. Low priority is placed on multiple aspects of monitoring and compliance by individuals in Factor Four (statements 15, 7, 22, and 27). Additionally, this group does not prioritize leaders spending time resolving scheduling problems (statement 23) or working on employee’s personal issues (statement 10). Leaders should be garnering the needed support for the division, not being weighed down with logistical or employee’s personal issues. The priorities and trade-offs loading for Factor Four appear to balance internal and external orientations as both technocrats and executives, which is consistent with the final stage of Andrews and Carlson’s discussion of CIO evolution [1].

Looking across the Factors

What a CIO leader should be in the eyes of IT professionals is a multifaceted concept with at least four distinct characterizations of leadership priorities. Factor One represents a distinct view focused on results orientation and service delivery (aspects of leadership that

dominated the management literature during the rational and managing for results models). Factor Two would make human relations scholars and HR directors proud. They focus on creating a team of employees who have high morale and are able to work collaboratively together to achieve department outcomes. Factor Three and Four perspectives overlap in several ways. They share the strong belief that a leader should be focused on gaining access and exerting influence on stakeholders outside the department and on the senior management team. Factor Three is more heavily concerned with innovation while Factor Four is more concerned with internal and external individuals' understanding and attainment of departments' purpose and goals. Also, Factor Four is less focused on the monitoring and compliance responsibilities of the leader, while Factor Three does not believe a leader should devote significant time on interpersonal issues of their staff.

In alignment with Andrews and Carlson's evolutionary model of the CIO, there is a marked need for IT leaders to move away from the transactional, technocratic role to the transformational, strategic role in order to be truly effective leaders [1]. Transformational leaders are leaders who draw followers out of a narrow, parochial interest to a higher purpose; leaders who change the belief and orientation of followers. A core characteristic of this type of leader is individualized consideration. "The leader gives individual attention to followers regarding their interests, issues, and concerns, and builds mutual trust and respect in the leader-follower relationship; the employee's personal and professional development are encouraged through coaching, delegating challenging tasks, and increasing employee responsibility" [18, p. 26]. This role and its characteristics do not appear to be a primary focus and, in fact, are a trade-off for many of the groupings (with the exception of Factor 2). Clearly, IT professionals have received promotions and advancement based almost exclusively on technical skills, which has created this limited humanistic focus, but this limitation can lead to less effective leadership when the professional ascends into senior management roles.

The nature of this research offers a unique perspective that allows for a review of not just what individuals believe should be the most critical attributes and responsibilities for a leader within the IT profession, but also what items they recognize as less critical or central. Making strategic trade-offs is a reality for any leader's world, because leaders cannot be everything to everyone. With a few exceptions, the role of facilitator and mentor are the ones that are most likely to be traded-off for other roles. The groupings diverge on their opinions on the importance of monitoring activities for

leaders, as well as the importance of setting internal direction. Management literature has long highlighted the importance of the relationship and people management of a leader's job while the IT leadership literature has begun to recognize the criticality of this role.

CONCLUSION

There is recognition of the importance of leadership in achieving organizational outcomes, in preparing our workforces, and in leading our nations. It is accepted that leadership has the potential to create greatness in individuals and in organizations. The literature on CIOs supports the critical business and strategic contributions of CIOs in high-performing organizations and substantiates the need for CIOs to embody leadership responsibilities. Despite this emerging acceptance of the role of the CIO as a strategic leader, most of the research has been prescriptive and oriented to the private sector.

The research presented in this paper hopes to add to the dialogue and understanding of public sector CIO leadership by providing new empirical constructs of leadership as defined by the participants with a forced-ranking instrument to replicate the realities of competing values in the workplace. This new approach alters the methodology employed, moving from common case study and survey research to a participant-directed analysis. The dimensions of what participants view as ideal leadership traits are examined while also forcing participants to consider those things that a leader should compromise or trade-off. We draw on the views of CIOs to contribute to the overall understanding of what leadership means to those individuals in the trenches of our local governments who make our systems work.

The findings of this study indicate that there are distinct conceptualizations of leadership amongst IT professionals. It is not simply that they represent different points on a continuum from classic IT professional roles to the new strategic CIO because all of the factors capture valued components of leadership roles. Rather, we see that there is good reason to recognize that the leadership role, according to the respondents, does not represent one static list of roles and responsibilities, as prescribed in other leadership research. In all of the groupings there were strengths in their commitments as well as areas that raise concern. Interestingly, it should be noted that the four leadership factors align with Andrews and Carlson's evolutionary stages of CIO development [1]. Specifically, the participants' views of leadership align with stages two through four (technocrat, business executive, and technocrat combined with business

executive, respectively) but no one in the sample indicated a leader's role as primarily or uniquely comprised of compliance and monitoring orientation, as is found in stage one. Clearly, the CIOs, IT directors, and senior IT staff in the sample have moved beyond classic IT competencies in determining ideal leadership.

The field has benefited from helpful and in-depth evaluations and discussion on the changing role and leadership needs for CIOs (though this has mainly been focused on the private sector). Little research has sought to understand how those in the field think about and construct their values, beliefs, and preferences. This research finds that there is variation in values, belief and attitudes about what an ideal CIO leader should do, prioritize, and be willing to trade off. With this knowledge it helps give a foundation for understanding and indicates the need for additional future research. While CIOs and IT professionals were purposefully selected for this study, it would be interesting to explore the use of this methodology with a more geographically diverse sample, as well as with people in different fields. This research provides insight on distinct conceptualizations of leadership, but has no way to determine if these different groupings have an impact on effectiveness. Future research on the relationship between these groupings and a standardized definition of success (yet undefined) would provide both theoretical and practical value. Much of the scholarship in the area of public management focuses on the question of how to create better performance. However, knowing more about effective leadership would offer a great benefit to the field and to governments.

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APPENDIX A: NORMALIZED FACTOR SCORES

High and Low Normalized Factor Scores For Factor 1		
Statement No.	Statement	Z-Scores
36	Bring a sense of order and coordination to the unit	1.997
31	Clarify the unit's priorities and direction	1.893
24	Get the unit to meet expected goals	1.353
6	Make the unit's role very clear	1.275
11	Maintain a highly coordinated, well organized unit	1.258
29	See that the unit delivers on stated goals	1.174
12	Hold open discussions of conflicting opinions of groups	-1.203
27	Check for errors and mistakes	-1.228
22	Compare records, reports, and so on to detect discrepancies	-1.331
7	Maintain tight logistical control	-1.380
14	Surface key differences among group members, then work participatively to solve them	-1.631
23	Solve scheduling problems in the unit	-1.633
10	Listen to personal problems of employees	-1.713

High and Low Normalized Factor Scores For Factor 2		
Statement No.	Statement	Z-Scores
16	Treat each individual in a sensitive, caring way	2.196
18	Show empathy and concern when dealing with employees	1.741
32	Show concern for the needs of employees	1.690
5	Search for innovations and potential improvements	1.299
10	Listen to personal problems of employees	1.233
9	Develop consensual resolution of openly expressed differences	1.176
11	Maintain a highly coordinated, well organized unit	1.174
21	Encourage participative decision making in the group	1.029
20	Get access to people at higher levels	-1.296
4	Continually clarify the unit's purpose	-1.320
34	Influence decisions made at higher levels	-1.406
2	Exert upward influence in the organization	-1.609
7	Maintain tight logistical control	-1.759

High and Low Normalized Factor Scores For Factor 3		
Statement No.	Statement	Z-Scores
5	Search for innovations and potential improvements	2.087
1	Come up with inventive ideas	1.825
28	Persuasively sell new ideas to higher ups	1.689
20	Get access to people at higher levels	1.562
25	Do problem solving in creative, clear ways	1.421
34	Influence decisions made at higher levels	1.257
14	Surface key differences among group members, then work participatively to solve them	-1.205
10	Listen to personal problems of employees	-1.235
35	Regularly clarify the objectives of the unit	-1.384
4	Continually clarify the unit's purpose	-2.144

High and Low Normalized Factor Scores For Factor 4		
Statement No.	Statement	Z-Scores
34	Influence decisions made at higher levels	1.394
2	Exert upward influence in the organization	1.385
28	Persuasively sell new ideas to higher ups	1.373
5	Search for innovations and potential improvements	1.339
3	Clarify the need to achieve unit goals	1.100
21	Clarify the unit's priorities and direction	1.069
15	Monitor compliance with the rules	-1.141
10	Listen to personal problems of employees	-1.222
7	Maintain tight logistical control	-1.659
23	Solve scheduling problems in the unit	-1.873
22	Compare records, reports, and so on to detect discrepancies	-1.967
27	Check for errors and mistakes	-2.167