



The Competitive Intelligence and National Security Threat from Website Job Postings

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Observations

- ◆ Firms take advantage of the Web's properties to post information about themselves
- ◆ These firms post information about employee benefits, business relations, finances, employees
- ◆ In particular, companies use the Web to publicize their job openings. In doing so, these firms may inadvertently release important sensitive information about themselves and their clients.



Observations (cont.)--Example

- ◆ One firm posts its employee benefits online, including deductibles for medical insurance, payroll deductions for optional coverage and details about its 401(k) plans, profit sharing & stock purchase plans (Anthes)
- ◆ Firms that do contract work for U.S. national security and defense agencies appear to follow this trend of printing a great deal of information about themselves and their clients in their Website job listings.



Problem

- ◆ If too much information is revealed in a job listing, then an unintended party could use that information as a means for achieving some end.
- ◆ Some ends adversaries may seek to achieve may include: military intelligence, corporate/economic intelligence, terrorism, blackmail, extortion.



Problem (cont.)--Examples

- ◆ Many firms offer for-hire CI on Web services
- ◆ Online competitor-monitoring services, including CI on recruiting activities.
- ◆ Job ads on Monsterboard can “tip you off about a company’s staffing weaknesses.” (Maynard)
- ◆ Why the Web? Firms have printed similar information in newspapers in other formats before the advent of the Web....



Problem (cont.)

- ◆ The properties of the Web allow viewers to make associations easier. (hyperlinks, frames)
- ◆ Keyword searches allow users to target specific functional areas in ways that are impossible in hardcopy and at lower cost than commercial databases
- ◆ Firms have more direct control over the content of their own Website than they do over the content of newspapers, making the information more credible



Research Objectives

- ◆ Develop a methodology and criteria for assessing whether a Website reveals sensitive information in its job vacancy announcements.
- ◆ Apply the methodology to data sets for three firms.
- ◆ Show that the job listings posted by the firms met some of the sensitivity criteria.



Literature

- ◆ Significant literature on competitive intelligence (CI)
- ◆ Some literature about CI on the Web
- ◆ Some literature about CI and job listings
- ◆ Very little information CI and Website job listings



Methodology

- ◆ Selected 3 firms known for their national security and defense work
- ◆ Selected and defined criteria (total of 14)
- ◆ Justified the criteria
- ◆ Selected data set using keyword searches (100 job listings for each of 3 data sets)



Methodology (cont.) – the criteria

- ◆ Security clearance (1)
- ◆ Technical degree (2)
- ◆ Technical terms (3)
- ◆ Names any client (4)
- ◆ Names national security client (5)
- ◆ Job skills (6)
- ◆ Names division (7)
- ◆ Names client site (8)
- ◆ Names job tasks (9)
- ◆ Names contract/project (10)
- ◆ Laws or directives (11)
- ◆ Project size or scope (12)
- ◆ Procurement information (13)
- ◆ Business operations information (14)



Methodology (cont.)

- ◆ Applied each of criteria to each job listing
- ◆ Wrote descriptions of job listings, maintaining confidentiality of firms
- ◆ Recorded results in job listing charts with check boxes corresponding to each criterion
- ◆ Wrote scenarios and justifications showing how information could be exploited.
- ◆ Inter-rater reliability testing: 91.9% agreement



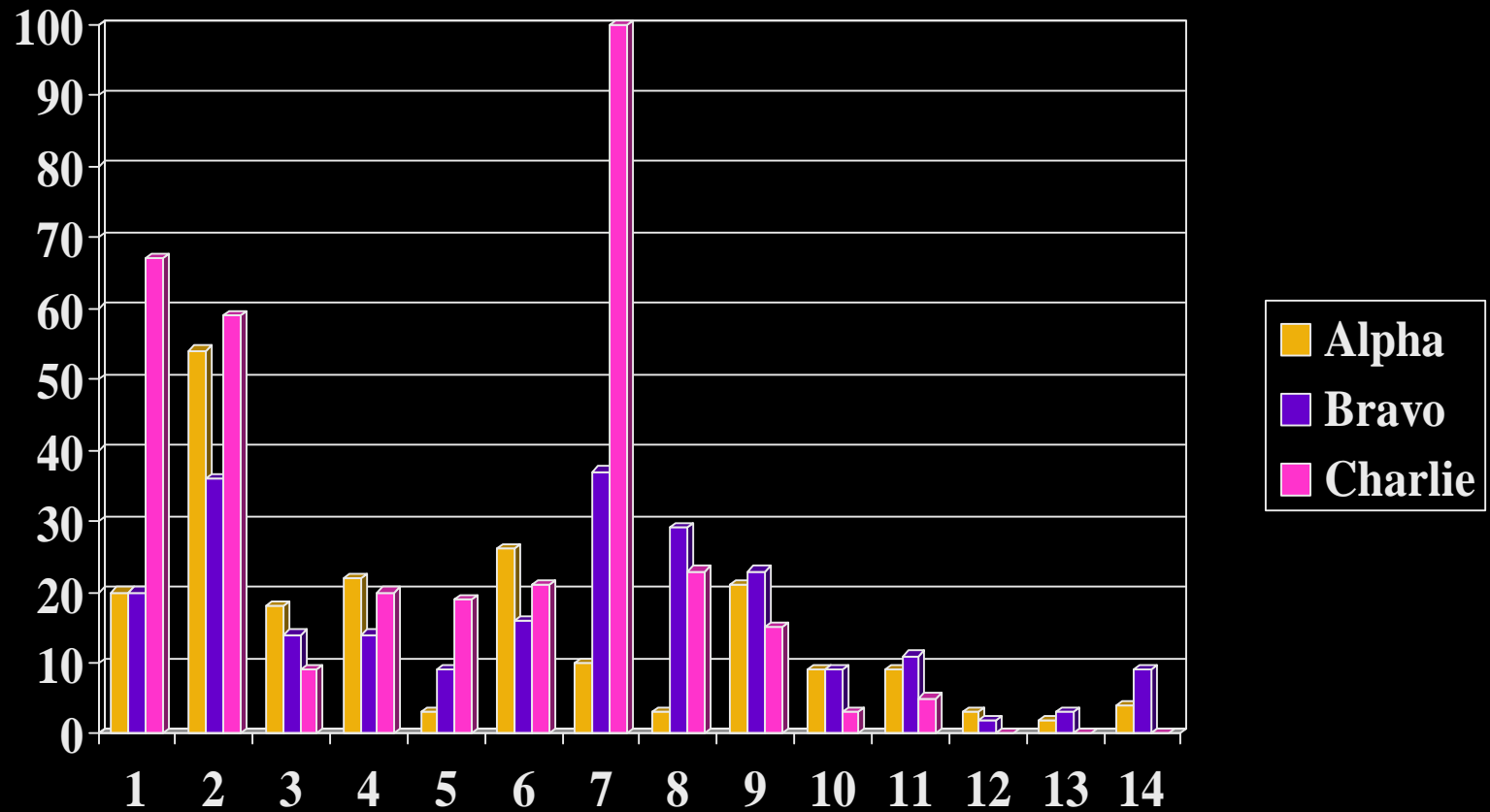
Methodology (cont.)

(Appendix B continued)

Criteria	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
Criterion 1			✓	✓				✓	✓	
Criterion 2	✓		✓	✓	✓	✓	✓	✓	✓	✓
Criterion 3				✓	✓			✓	✓	
Criterion 4		✓			✓					
Criterion 5					✓					
Criterion 6					✓					
Criterion 7										
Criterion 8										
Criterion 9					✓			✓		
Criterion 10					✓					
Criterion 11					✓		✓			
Criterion 12										
Criterion 13										
Criterion 14										
TOTAL	1	1	2	3	8	1	2	4	3	1

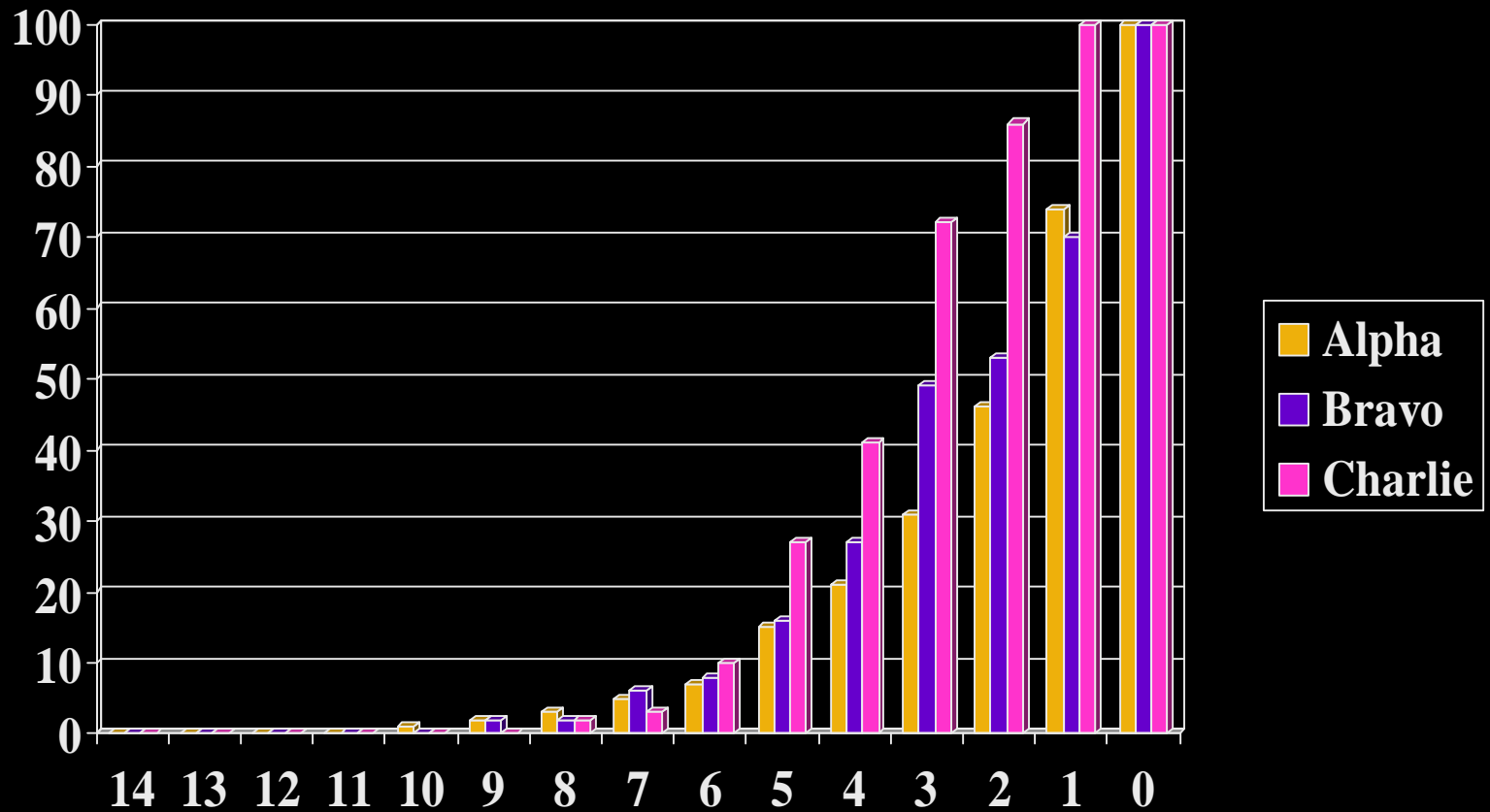
Findings (cont.)

Chart 3.1: Distribution of Job Ads By Criteria Satisfied



Findings (cont.)

Chart 3.2: Cumulative Statistics Showing Percentage of Listings Satisfying X or More Criteria





Research Issues

- ◆ Overlapping criteria (4 & 5; 13 & 14)
- ◆ Human resources errors
- ◆ Technical terminology hard to understand
- ◆ Reviewer subjectivity
- ◆ Too conservative in rating listings
- ◆ Some criteria didn't appear often
- ◆ Relatively small data sets, particularly for inter-rater reliability testing.



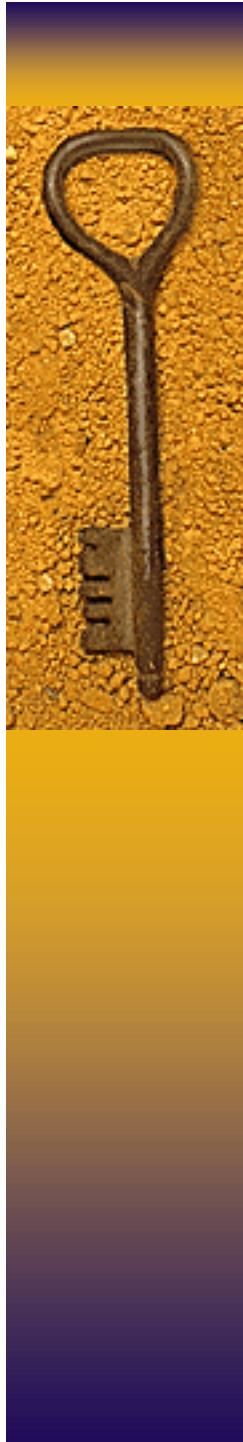
Future Research

- ◆ Could apply modified version of criteria to an entire Website
- ◆ May be useful to study other parts of a Website (investor information, online media kits)
- ◆ Yahoo!, Excite key word searches.



Recommendations

- ◆ Each firm needs to make its own assessment
- ◆ Firms with defense contract not name clients
- ◆ Other information reviewed on case-by-case basis
- ◆ Managers and HR staff coordinate efforts (supported by awareness training).
- ◆ Automated tools
- ◆ Firms err on the side of caution when posting jobs on their Websites because of the consequences.



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