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.)

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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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