Digital Journalism and the Challenges of Managing a 21st Century Newsroom Workforce
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Pilot Study Overview: To test the validity of using LinkedIn for mapping employment histories, we conducted a pilot study of three news organizations. The data for our pilot study were collected via LinkedIn from Asbury Park Press (APP), Vox Media, Inc., and New York Daily News. Two undergraduate student coders collected the data following our codebook (please see below). Each undergraduate coder spent approximately 20 hours coding data, which allowed for a sample of 100 employees at each of the three organizations.

Data Collection Process: LinkedIn allows for users to search by company name for employees. Traditional LinkedIn accounts have limited search capabilities. Thus, to maximize data collection, we used a premium Sales Navigator Professional account. Coders worked on a collaboratively shared Google Spreadsheet prepopulated with key fields. Coders filtered search results for each organization (e.g. Asbury Park Press), and then manually entered the data for each employee into the spreadsheet. LinkedIn recently shut down public API access, so it is no longer possible to automate data collection. The focal fields for data collection include: employee's full name; current job (company, title, dates); company, title, and dates for all prior jobs, location, gender, education (school, degree, major, and date graduated for any secondary education); and skills (the first three skills listed on the employee's profile).

Pilot Study Findings: The pilot study provided us with a unique glimpse into the working histories of employees at each of the three news organizations. Please note that the following is based on a sampling of 100 employees at each organization, and therefore any conclusions or commentary should be taken as preliminary. Our analysis is broken down into sections; first we provide a map of the flow of employment for each organization, and then we provide an overall map of the flow between the three organizations. We conclude by comparing variations in education, skills, and job roles.

In the following network visualizations (Figures 1-4), organizations are connected to one another when they share more than one employee. Networks are filtered for degree range greater than one and edge weight greater than one. Visually, edges are thicker when there are more connections between companies. In addition, as both the nodes and the edges move along a color spectrum from yellow to blue, their weight (strength) increases.

*Asbury Park Press***:** Figure 1 visualizes the job histories of 100 employees at Asbury Park Press. Organizations included represent companies where more than one Asbury Park Press employee has worked. In other words, the visualization shows that the most common prior employers for current Asbury Park Press employees include Gannett, USA Today, and Courier-News. Interestingly, all of these organizations, including Asbury Park Press, are part of the Gannett umbrella. This indicates that the strongest sources of employment flow from one single parent organization. Additionally, all of these organizations are considered legacy news organizations with traditional news media business models.

*Vox Media***:** Figure 2 visualizes the job histories of 100 employees at Vox Media. In contrast with Asbury Park Press employees, current Vox Media employees tend to come from relatively new, digitally focused, or technology-centered organizations. For example, AOL, Gawker, and Curbed (now owned by Vox Media) are the strongest feeder organizations of current Vox Media employees and each is considered a digital-first company. As a new digital media company itself, Vox Media clearly tends to pull its talent and expertise from organizations of a similar ilk.

*New York Daily News***:** Figure 3 provides a visualization mapping the job histories of 100 employees at New York Daily News. Here, the strongest feeder companies for current New York Daily News

employees include New York Post, New York Times, CBS, and Hearst. While these sources of talent are considered legacy organizations, it is clear that the current New York Daily News workforce is composed of employees with prior experience at digital organizations as well (e.g. DNAInfo, Daily Beast, appsavvy)

Aggregate Employment Trajectories: The final visualization maps the job histories of all 300 employees. Once again, organizations are connected with other organizations when multiple employees came from a given organization. As the visualization in Figure 4 shows, Asbury Park Press has the most overlap (indicated by edge thickness) with USA Today, Vox Media has the most overlap with AOL, and New York Daily News has the most overlap with New York Post. The intermediary organizations among our three focal organizations are also worth noting as sources of talent for multiple types of news organizations. For example, CBS feeds directly both to New York Daily News, a legacy news organization, and Vox Media, a digital-first news organization. Interestingly, NBC is connected to all three focal organizations as a source of employment flow.

Education. Employment histories were also coded for all 300 people. The most frequent major was journalism, which is not surprising. Of the 300, 12 employees had technical backgrounds such as computer science or engineering. The most diverse organization in terms of educational background was Vox, The results indicate that Vox values a diverse array of expertise including traditional journalism training as well as computational science training. Asbury Park Press, on the other hand, was the least diverse organization in terms of educational background and tended to draw employees with traditional journalism training.

Skills. We coded the top three skills for all employees. Overall, the most frequent skill was journalism, which again, is not surprising. The most frequent skill at Asbury Park Press was also journalism. The most frequent skill at Vox was digital media. The most frequent skill at New York Daily News was journalism as well. Once again, the most diverse organization in terms of skills was Vox and the least diverse was Asbury Park Press, echoing the trends indicated from the education analysis.

Roles. Based on current job role, we categorized all positions as digital or data-centric (e.g. Digital Producer, Chief Data Scientist). Based on our sample set, there are six of these positions at Asbury Park Press, seven at Vox Media, and 24 at New York Daily News.

Implications: Findings from our pilot study suggest there are interesting and informative differences in the employee histories, educational backgrounds, and skillsets that compose our three focal organizations. Regarding employee histories, it is clear that Vox Media pulls from more interactive, digital news organizations while Asbury Park Press and New York Daily News tend to draw from more traditional, legacy news organizations. Feeder organizations not only impact organizational culture, but also relate to the integration of digital and data-centric skills. Diversity of skills and educational background follows these patterns as well. Interestingly, findings from the role analysis were contrary to expected results. Based on the other analyses, we expected to find Vox Media had the most positions related to digital or data-centric roles. However, our analysis shows that New York Daily News had more than triple the number of positions dedicated to digital or data-centric roles. It is possible that this increase is due to the fact that New York Daily News has many more employees to begin with, and thus, the potential for more digital and data-centric roles increases. Further research is needed to assess these hypotheses.

Limitations & Future Directions: The pilot study tested the utility of LinkedIn for measuring employment histories, but there are a number of limitations such as self-selection and data completeness. Self-selection bias is often a factor in population research based on surveys or other similar instruments; in this case self-selection occurs through the decision to engage via LinkedIn. Since our data are based on

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descriptions and choices made specifically by our subjects, it is important that we acknowledge the potential for bias.

An additional concern in using LinkedIn is the completeness of data. In addition to collecting employee data for the pilot study, we assessed the degree to which the LinkedIn data are representative of actual employment numbers. For example, there are 368 current Vox Media Inc. employees with LinkedIn profiles and approximately 400 actual employees.[6] There are 677 current New York Daily News employees with LinkedIn profiles and approximately 1000 actual employees. Lastly, there are 204 current Asbury Park Press employees and approximately 600 actual employees. Actual employment numbers for Asbury Park Press and New York Daily News were determined based on conversations with Human Resource departments at their respective organizations.

It is clear that LinkedIn contains a subset of employees, and in some cases, such as Asbury Park Press, the ratio of employees accounted for is low. Thus, in an effort to counteract self-selection, we intend to validate a sample number of employment histories with a secondary data source (e.g. Cision Media Database). Overall, we are confidant that LinkedIn provides the most accurate large-scale sample of newsroom employees currently available.

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[6] Mainstream news coverage from December, 2014 pins Vox Media at approximately 350 employees [Stelter (2014). How Vox Media expects to turn a profit – and justify a $380 million valuation. *CNNMoney*].

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Figure 1: Asbury Park Press Ego Network

USA Today
NBC
Greater Media
Speak Into My Good Eye
Courier News
Star Ledger
Florida Today
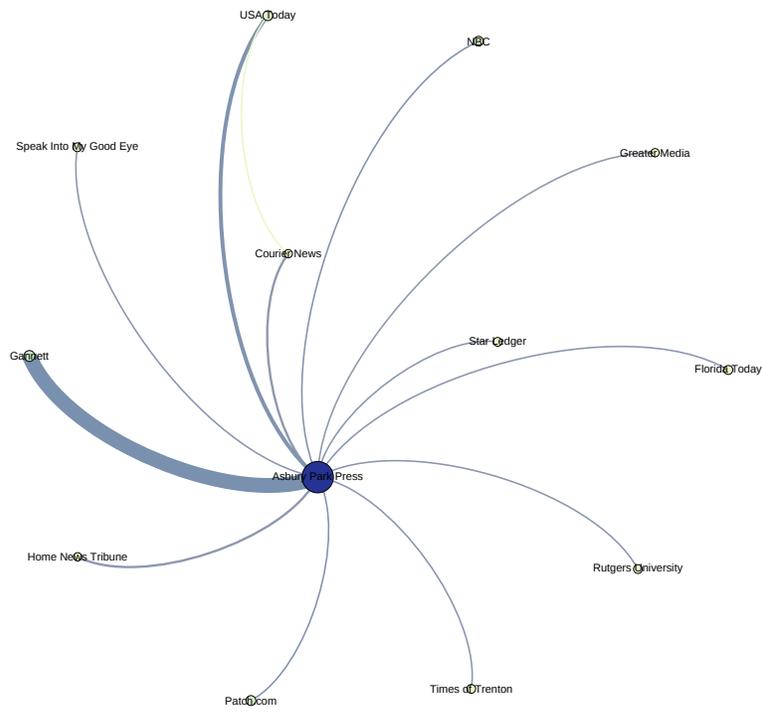Garrett
Asbury Park Press
Home News Tribune
Rutgers University
Patch.com
Times of Trenton

Figure 2: Vox Media Ego Network

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Ogilvy & Mather Morgan Stanley

Living Social

New York Magazine

HBO

MTV

Hardwire

Gawker Media

CBS

Turner Broadcasting

CNN

Yahoo!

Oak Sanderson

Forward Together PAC

Vox Media Inc.

SB Nation

Conde Nast

NPR

Abrams Media

AOL

NBC

Federated Media

Curbed Network

Endgadget

ESPN

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Figure 3: New York Daily News Ego Network

Figure 4. Aggregate Employment Trajectories

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