

WHO IS WEAVING THE WEB? JOB OUTLOOK FOR WEB DEVELOPERS

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ABSTRACT

There are indications that the IT job market is recovering. The authors collected data regarding the current demand for web developers, the education level requested, and the specific skills employers are demanding, and compared them with data that was observed five years ago to see how the market and the requirements have changed. The research process included finding, reading and recording the education level, experience, and specific skills employers were requesting for hundreds of jobs that had been posted on the Internet within the last few months.

THE WEB DEVELOPER

The position of Web Developer is defined in a variety of ways by different organizations. Unfortunately, there is no Department of Labor (DOL) definition for “Web Developer” to define the exact role. Wikipedia’s definition mentions many areas that are related to Web development: “Web development incorporates all areas of creating a Web site for the World Wide Web. This includes Web design (graphic design, XHTML, CSS, usability and semantics), programming, server administration, content management, marketing, testing and deployment. The term can also specifically be used to refer to the ‘back end’, that is, programming and server administration. There is usually more than one member that works on a given Web Development team, each specializing in his or her own field.” [6]

From a specialist and project manager perspective, “A web developer is responsible for programming the functionality of a web site. So while a requirements analyst is tasked with determining what a web site should do, the web developer figures out how it is going to do it and then writes the necessary programming code. Much of this programming code is behind the scenes and not visible to the user. However, a web developer may also be responsible for the code that the user sees. This is the HTML/DHTML and Javascript that make up most of the web pages you interact with in your web browser.” [1]

VitalNet approaches the definition in two steps: first it looks at the web designer area, and then distinguishes it from the developer: “A Web designer is a person who creates web sites. Web designers may use Web-authoring software or an HTML editor to create the actual pages, or they may design the overall look and let a Web master do the actual coding. Most often, they are also proficient with Web graphics and images. A Web developer can also be a Web designer, but a Web developer typically has more database, CGI, and engineering experience. He or she develops the interface between the front and back end of a website.” [5]

Mozilla.org defines the Web developers as “people who write web pages” [2]. The online Web

Developer’s Journal defines the web developer as “a person who not only designs web sites, but also understands the web as a medium, and is able to translate that understanding into site design.” The World Organization of Webmasters specifies the Web developers in its certification program as professionals who “... are proficient at creating web site structure and interactivity. They use database tools and custom applications to prepare the site for dynamic presentation of content to the visitor.” In several cases the job descriptions might also be mixed with the tasks and the responsibilities of a Web administrator/webmaster and/or a Web designer.

JOB DEMAND FOR WEB DEVELOPER

The U.S. Department of Labor in the Issues in Labor Statistics newsletter [4], listed the Webmasters, the Web designers and Web developers among the new and emerging occupations. They also stated “Within the Internet occupations, more new occupations were related to such Web site development tasks than to either site administration or support.”

In the Tomorrow’s Jobs section of the Occupational Outlook Handbook DOL it states: “Employment in the information supersector is expected to increase by 11.6 percent, adding 364,000 jobs by 2014. Information contains some of the fast-growing computer-related industries such as software publishers; Internet publishing and broadcasting; and Internet service providers, Web search portals, and data processing services. Employment in these industries is expected to grow by 67.6 percent, 43.5 percent, and 27.8 percent, respectively.” [3]

METHODOLOGY

As performed for the previous study done five years ago, a search for jobs with “Web Developer” in the job title was performed at America’s Job Bank (<http://www.jobsearch.org>). The search was performed for jobs listed in all 50 states. An initial search resulted in 1542 matches. In the previous study, it had been decided that examining between 300 and 400 jobs descriptions would be adequate to get a representative sample. For consistency, roughly the same number of jobs were included in this study.

TABLE 1.

Categories of Skills

Markup language (HTML, DHTML, XHTML, UML)
Web authoring tools (Flash, Photoshop, Dreamweaver, WebLogic, FrontPage)
Client side scripting (Javascript, CSS, XSLT, XSL, VBscript)
Server side scripting (ASP/ASP.net, JSP/EJB, PHP, Perl, CGI, servlets)
Server side scripting products (Cold Fusion, ISAPI, InterDeveloper)
Programming languages (Java, C#, Visual Basic/VB.NET, AJAX, C++, Active X, COBOL)
Programming products (Visual Studio, JBuilder, Visual InterDeveloper)
Database (SQL, XML, ADO, JDBC, ODBC)
Database products (SQL Server, Oracle, MS Access, MS Transaction Server, DB2, SAP, Powerbuilder)
Operating systems (Windows, Unix, Linux, Solaris, Mac OS)
Methodology (COM/DCOM, Database Design, OOP/OOD, SDLC, RAD)
Servers (IIS, Apache, Websphere, iPlanet, MS Commerce)

All jobs were listed with the agencies during the month of September, 2006. After elimination of obvious duplicate job listings, 375 positions were included in this study.

Job descriptions/requirements for the 375 jobs were examined. Twelve of the positions listed either no requirements or only a list of very generic skills. Percentages of skills requested were calculated based on the number of jobs that actually requested one or more specific skills (N=363).

For these 363 positions, the technical skills required/requested were noted and tallied. Skills requested were recorded regardless of whether the skill was required or just preferred.

SUMMARY AND CONCLUSION

It is clear that the Web development jobs represent a demanding field in the information systems area. The job titles and the description content are sweeping, and the roles fluctuate, contrast, diverge, and vary as the companies' needs differ. It also seems to have a close relationship to the level of the recent Web applications in the company's information systems.

The broad spectrum, the very different job descriptions and advertisements suggest that those businesses that just started their Web development might be satisfied with less skills and knowledge, and those who already established a solid Web presence might have higher expectations, and require more experience and higher, more complex skills.

From the data it is clear that skill requests in many areas have greatly increased (markup languages, client side scripting, database, methodology, and security skills all increased by more than 30%). But the fact is that technical specialists, content designers, and also managers need a broad vision of the Web, the applicable tools, and the involved areas. They all need to understand many components and several areas of Web development, be familiar with the processes, and make the right decisions regarding the technologies, infrastructure, and development.

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