

Burning Glass Technologies

Software is Everywhere: Growth in Software Jobs

Matching People
& Jobs

Resume Parsing &
Management

Reemployment
& Education
Pathways

Real-Time Jobs
Intelligence

Software is Everywhere: Growth in Software Jobs Spans the Economy

As Software Pervades All Corners of the Economy, So Too Do Software Jobs

From 2007 to 2012, online postings for software jobs across the U.S. grew 31% - nearly 3x faster than overall job postings.

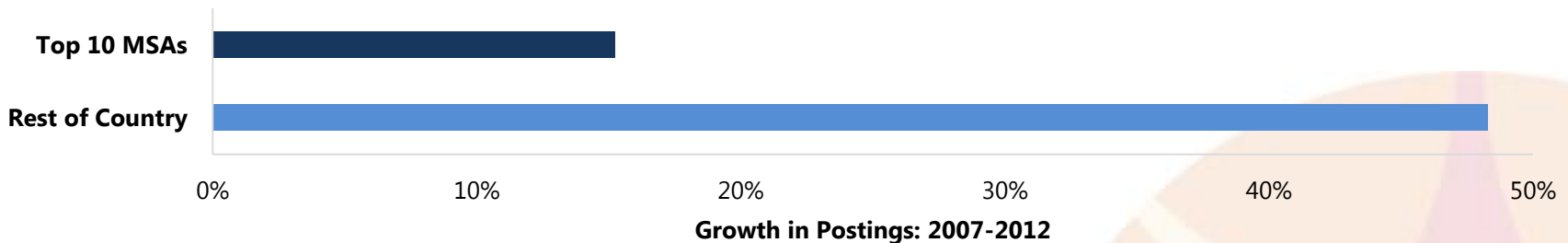
This growth has not been limited to the high-tech hubs of the West Coast and Northeast, however, nor has it only been concentrated in select industries. Instead, software growth has been dispersed throughout the economy, both geographically and across industry sectors.

Online posting data illustrate this trend in real time with more meaningful magnitudes and granularity than similar labor market data, presenting a vivid portrait of the growth in demand for software jobs.

Software Jobs Are Growing Sharply in Nontraditional Cities for Software

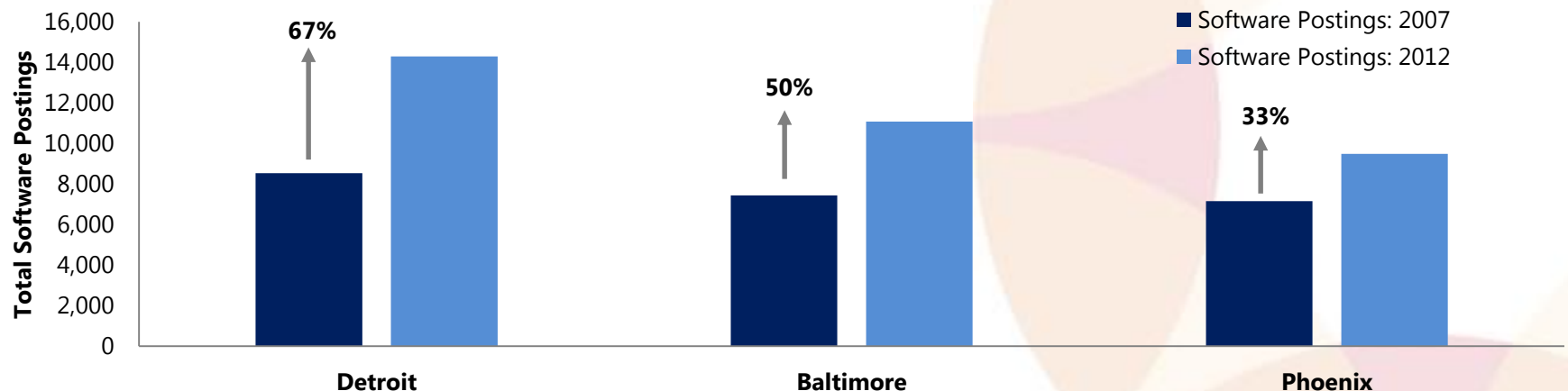
In 2007, the top 10 cities for software postings accounted for 52% of all software postings – **by 2012, that figure had dropped to 45%** as demand for software jobs in the rest of the country grew 3x faster than demand in the top 10 MSAs.

Growth in Software Postings: Top 10 Software MSAs vs. Rest of Country



Many of the cities that have seen the sharpest growth in software postings are not commonly associated with strong software industries – such as Detroit, Baltimore, and Phoenix.

Growth in Software Postings: 2007-2012



Software Jobs Are Growing Sharply in Nontraditional Cities for Software

Much of the growth in software postings in these cities is occurring in non-software related industries:

- › In Detroit, **the motor vehicle manufacturing industry has seen software postings rise nearly 3x faster than postings in the industry overall since 2007.**
- › In Baltimore, **software postings at the top 10 defense contractors** – which include firms such as Lockheed Martin, Boeing, and Booz, Allen, Hamilton – **have grown 70% faster than overall postings since 2007.**
- › In Phoenix, software postings in the colleges, universities, and professionals schools industry have **grown 69% faster than overall industry postings, and the industry jumped from the 15th-largest industry for software postings in 2007 to the 4th-largest in 2012.** This trend is driven in large part by the growth of for-profit universities, such as University of Phoenix.

Major Employers Demanding Software Skills

| Detroit | Baltimore | Phoenix |
|------------------|---------------------|-----------------------|
| General Motors | Northrop Grumman | Intel Corporation |
| Chrysler | Lockheed Martin | American Express |
| Ford | Booz Allen Hamilton | University of Phoenix |
| General Electric | General Dynamics | CVS |
| HP | IBM | Go Daddy Software |

Software Jobs Are Booming in Non-Software Industries

As demand for software jobs is becoming more geographically dispersed, so too is it spreading to a diverse range of industries. From 2007 to 2012, **growth in software postings outpaced growth in overall postings in 75% of all industry sectors.**

Software posting growth was robust in many sectors not traditionally associated with software jobs – such as manufacturing, finance and insurance, and health care.

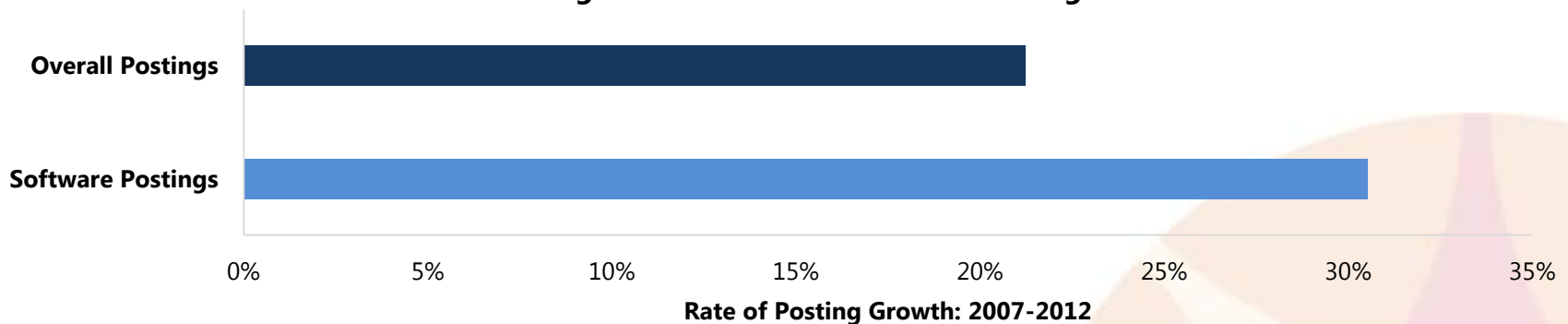
Top 10 Industry Sectors for Software Postings

| Industry Sector | Software Postings: 2012 | Software Posting Growth: 2007-2012 | Overall Posting Growth: 2007-2012 |
|--|-------------------------|------------------------------------|-----------------------------------|
| Professional, Scientific, and Technical Services | 147,442 | 24% | 27% |
| Manufacturing | 68,011 | 31% | 21% |
| Administrative and Support Services | 65,476 | 94% | 20% |
| Information | 52,977 | 60% | 31% |
| Finance and Insurance | 36,952 | 40% | 1% |
| Retail Trade | 25,575 | 98% | 31% |
| Educational Services | 19,003 | 53% | 66% |
| Health Care | 16,119 | 72% | 29% |
| Wholesale Trade | 8,660 | 81% | 66% |
| Transportation and Warehousing | 6,382 | 62% | 97% |

Software Jobs Are Booming in Non-Software Industries: Manufacturing

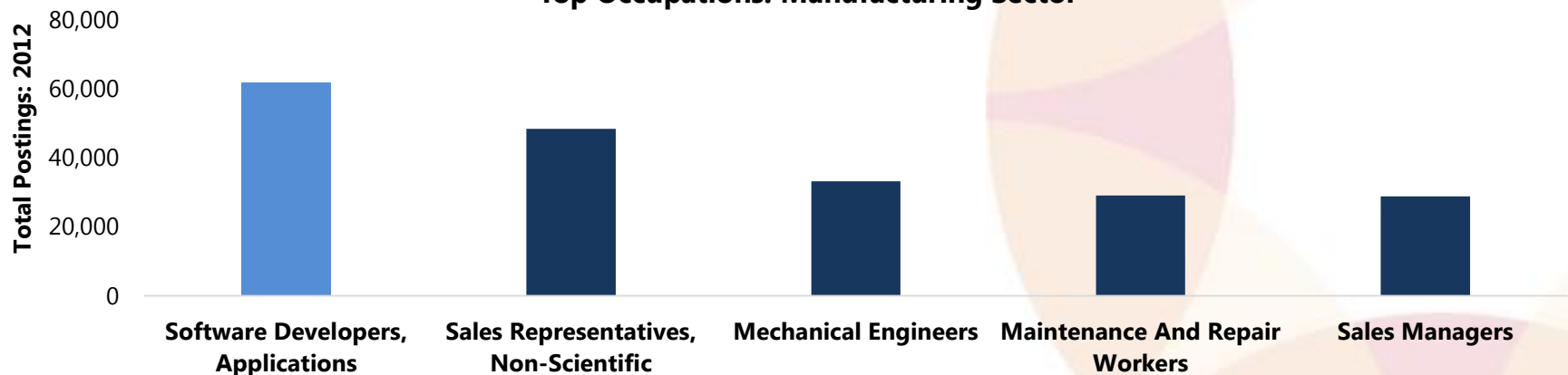
From 2007-2012, software postings in the manufacturing sector jumped 31% – 44% faster than the manufacturing sector overall.

Posting Growth 2007-2012: Manufacturing Sector



Software Developers now constitute 5% of all postings in the manufacturing sector – a greater share than any other occupation and nearly 2x the amount of postings for Mechanical Engineers.

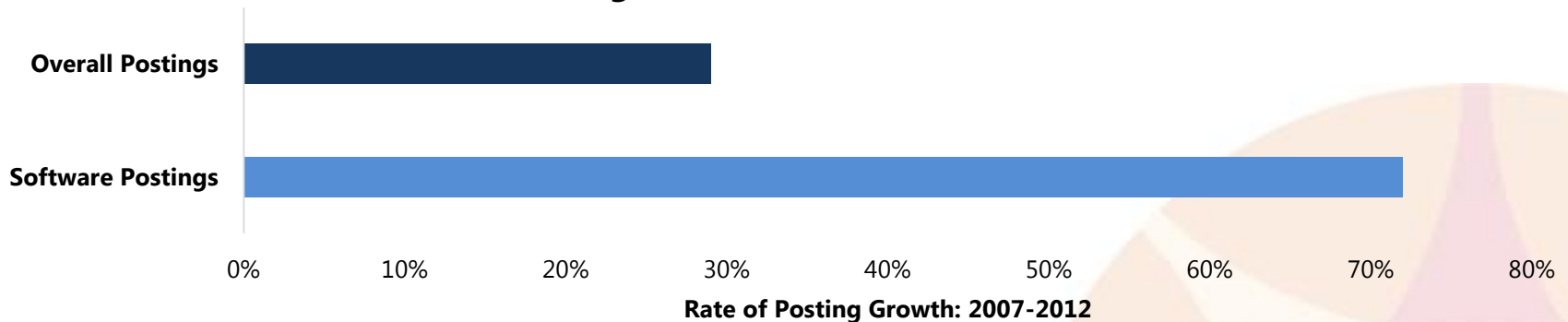
Top Occupations: Manufacturing Sector



Software Jobs Are Booming in Non-Software Industries: Health Care

Software postings in the health care sector shot up 72% from 2007 to 2012 – more than 2x the rate of overall posting growth.

Posting Growth 2007-2012: Health Care



What is Driving Software Growth in Health Care?

The health care sector's sharp uptick in software postings is largely driven by an increasing emphasis on electronic record-keeping and technology-based clinical decision making.

Historically, clinical conditions were captured solely for billing and payment purposes, but recent advancements in the field of health care informatics are motivating health care providers increasingly to integrate clinical data into clinical care.

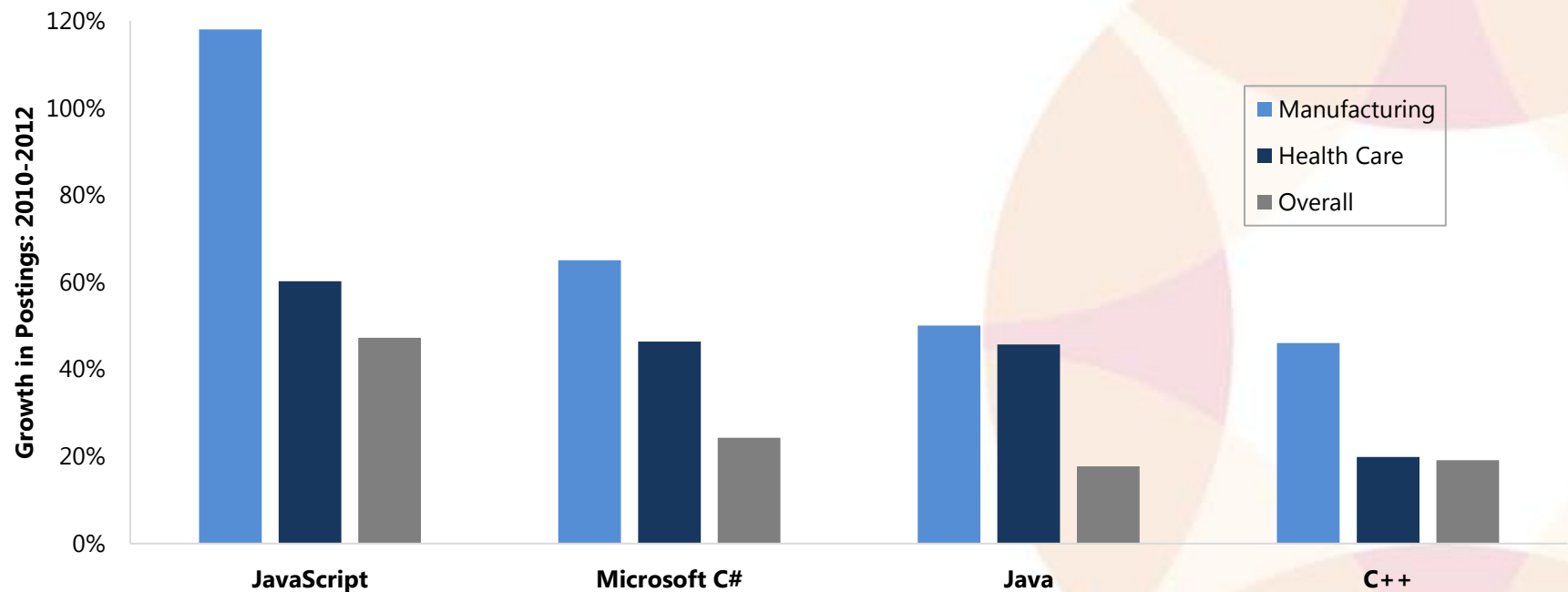
The result has been a move towards more electronic health records and a proliferation of clinical applications that utilize new data mining and artificial intelligence technologies, which in turn has boosted demand for software professionals with the know-how to design, implement, and maintain these technologies.

Not Just Jobs But Skills: Software Skills Are in High Demand in Non-Software Industries

Demand for software skills is also growing rapidly, as **demand for the top programming skills** – i.e. C++, C#, Java, and JavaScript – **grew 47% in Health Care and 54% in Manufacturing since 2010**. In both sectors, **growth was over 2x as fast as overall demand growth** for the top programming skills.

Demand for each specific skill also grew faster in the manufacturing and health care sectors than in the economy overall, with JavaScript growing the fastest, both overall and in each sector.

Posting Growth 2010-2012: Top Programming Skills



Different Industries Demand Different Software Skills

As demand for software skills spreads throughout the economy, different industry sectors are demanding different sets of software skills.

In health care, for example, employers place greater emphasis on database-related software skills – such as SQL and relational databases – than employers in the manufacturing sector, who demand more general software development skills, such as software engineering and C++.

| Top Skills Demanded for Software Jobs: Manufacturing | Top Skills Demanded for Software Jobs: Health Care |
|---|---|
| 1. Software Engineering | 1. SQL |
| 2. C++ | 2. Java |
| 3. Java | 3. Oracle |
| 4. Linux | 4. .NET Programming |
| 5. Software Development | 5. Microsoft C# |
| 6. SQL | 6. XML |
| 7. Microsoft C# | 7. JavaScript |
| 8. Object-Oriented Analysis and Design | 8. Software Engineering |
| 9. Oracle | 9. SQL Server |
| 10. XML | 10. Systems Analysis |
| 11. Unix | 11. Object-Oriented Analysis and Design |
| 12. Software Architecture | 12. Unix |
| 13. Debugging | 13. Web Site Design |
| 14. JavaScript | 14. Software Development |
| 15. .NET Programming | 15. Relational Databases |
| ... | ... |
| 44. Relational Databases | 21. C++ |

Green: Skills more commonly requested in Health Care

Blue: Skills more commonly requested in Manufacturing

Methodology

Burning Glass collects job postings from over 23,000 online job sites to develop a comprehensive, real-time portrait of labor market demand. Our software extracts top line information about each job such as title, employer and industry, and then “reads” each job description to identify actual job titles, skills, and qualifications that employers are seeking. We then eliminate duplicate postings and place each job in a database for further analysis.

For the focus of this report we analyzed posting trends across industry sectors and metropolitan statistical areas (MSAs) for software developers and computer programmers from 2007 through 2012.

About Burning Glass

Burning Glass, a leading labor market analytics firm, is playing a growing role in informing the global debate on education and the workforce. Founded in 1999 with the goal of developing the world’s leading technologies for matching people with jobs, our technologies deliver insight across workforce and economic development, career exploration and counseling, and job matching. Burning Glass solutions drive critical workforce, education, and economic development initiatives for more than a dozen state and national governments, as well as numerous educational institutions, regional agencies, global recruitment agencies, major employers, and job boards.

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