

Information Communications Technology/Digital Media Inland Empire Industry and Employer Needs

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The jobs identified as Information Communications Technologies and Digital Media (ICT) jobs are changing rapidly. The lines are blurring between traditional computer science jobs and the increasing number of jobs requiring technology skills and digital literacy. The result of these changes is an expanding vertical market for ICT jobs and an increased business demand for technology and digital literacy skills in highly skilled technical, professional, and management jobs; creating an extended horizontal market for ICT skills across traditional jobs. The potential for job growth in the Inland Empire ICT sector is strong and predictions are for continued growth in these high-wage jobs.

Inland Empire ICT Job Market:

The well-documented jobs analysis of the traditional computer/information systems jobs, conducted by the Centers for Excellence, provides a strong foundation, and reference, for definition of the ICT jobs market in the Inland Empire (IE). The identified jobs are expected to grow as a result of IT job expansions within existing IT departments. The targeted IT job growth (projected growth of 22-32% through 2020), will be led by growth in the following jobs:

- Software Development
- Network/Computer Systems Administration
- Database Administration

An analysis of employer growth and economic development in the IE reflects the slower growth pattern of the traditional IT jobs as a result of the weak economy. The current limits on job growth are due to limited government funding, high unemployment in the IE, and uneven economic growth in southern California, suggesting that the opportunities for jobs growth may not be driven solely through the traditional IT growth patterns. The opportunities for added growth may come from the development of new ICT jobs, reflecting advancement of technologies and the growing demand for technology skills and digital literacy in the new jobs of the new economy. This aligns with the vision of ICT and MICT, and opens the door for new opportunities for career preparation for ICT in the IE. The ability to train and develop a well prepared ICT workforce to meet these broader industry needs is a challenge, but with great promise.

The following outlines the projections for growth in the use of technology by IE industries, outlines opportunities in the new economies, and identifies economic/jobs development activities in progress.

A Review of Inland Empire Economy:

The Inland Empire consists of two large counties, representing approximately 4.4 million residents, and 57 cities. The primary employment industries include: local government (cities, counties, and state agencies), education, healthcare, and the growing regional commercial corridors of warehousing, logistics, and transportation, associated with the I-10 corridor and the ports of Long Beach and Los Angeles. These industries make up the largest segment of the employer base for jobs, with the fastest growth in jobs being in healthcare and transportation/logistics/warehousing. These large employers support the multiple retail, service, and hospitality businesses in the Inland Empire and provide extended markets for small business and entrepreneurs. The percentage breakdown of IE GDP is as follows:

- Government – 17.4%
- Healthcare – 16.1%
- Professional/Technical – 4.0%
- Information – 1.7%
- Utilities – 1.5%
- Education – .6%

The traditional IT job demands in these industries seek individuals with skills in the above-mentioned fast growth IT jobs. Organizations further want a reliable source of training and workforce development to produce workers with the job-ready skills that make them a productive addition to an organization from day one.

New Technologies and ICT Job Growth:

With the advancement of technology, and its broader use across industry, there are extended opportunities developing within the IE's leading industries. The fundamental technology advancements are creating new opportunities for ICT jobs and include the following:

1. Health Informatics –

Health IT spending is projected to reach \$40 billion dollars. With the large healthcare industry within the IE, this offers opportunity for significant growth in: health information technicians, health information analysts, electronic health record technicians, social media, tele-health and tele-medicine. Developing trained workers with technology skills applied to healthcare environments will be a key opportunity.

2. Online Learning and Education –

The increased use of online learning and development, including MOOC's (Massive Open Online Courses), is opening up the opportunity to support the active development of online learning tools, including gaming, etc., for training and education organizations. This is a new development opportunity for ICT to develop skills in this area to serve the strong IE education base. This offers an additional opportunity to offer an ICT Learning Center, supported by students, interns, and ICT Advisory Members who develop learning systems.

3. Mobile Architectures -

The growing trend of mobile phones and devices overtaking PC's as most common web access, is resulting in the development of mobile architectures, applications, and use of personal cloud computing. This is resulting in the advancement of social and digital media, personal computing, and developing new demands for the consumer connections. This offers opportunities for mobile applications jobs to support small business and entrepreneur incubators in the IE. The predictions are that \$1 of every \$5 will be spent on cloud-based software and infrastructure by 2016. Cloud-based business applications will reach \$32.2 billion, compared with \$13.4 billion in 2011.

4. Internet and Internet of Things -

By 2020, the predictions are for a 30 times increase in number of units connected to the internet, generating new products and services of around the internet, with a projected revenue of \$300 million by 2020. This growth will amplify existing business (75% of Internet value impact arises from traditional industries), and stimulate the growth of small business (2/3 businesses have web presence). The growth of web applications and internet networks will increase the demand for these skills across industry.

5. Data Analytics & Big Data -

Predictions are that the demand for big data will create 4.4 million jobs globally, and only 1/3 will be filled. Analytics and big data science use, from corporate to social media, is a new frontier growth through the expanded and growing consumer use of technology. The digital connectivity has exploded the volume of data. Organization use and understanding of data is key to realizing the value of technology. Increasingly, from digital literacy (as user) to analysts, to scientist, the ability to use data is in demand in all organizations, from smart meters to marketing.

6. High Performance Computing (Digitization) -

This term covers the growth and widening application of technology across multiple industries. It addresses the recognition of physical objects connected to the internet and the cognitive computing that results. This term covers previously mentioned internet-of things, big data, and further includes cloud computing robotics, machine learning, etc., increasingly being used by traditional industries. McKinsey Corp. has stated that the digitization of our economy will fundamentally change the economic system. By 2025 the new economy will be as large as the 1995 physical economy, and that the physical mechanical jobs are disappearing into the technological new economy jobs.

Inland Empire ICT Economic/Jobs Development:

Traditional IT Jobs - As noted in the Model Comprehensive Regional Career Pathway for ICT/Digital Media, the job growth in large organizations offers the opportunity to expand beyond the high growth jobs, into the jobs created by industry evolution into the new economy technologies noted above, including high performance computing i.e., internet of things, big data/analytics. This will create new jobs with technology and digital literacy skills in expanded areas of technical, engineering, and professional jobs.

Targeted Technology Jobs – The IE is identifying and developing technology as a potential asset that can be used to attract new business to our economy, which offers an excellent opportunity to build in technology training and education as a key foundation in the development of our new economies. This effort is being led by The Foundation for Sustainable Communities, in partnership with cities, technology and industry partners. The success of this economic development will result in the defined regional advancement of technology use in:

- “Advanced” Logistics/Transportation
- Regional Analytics Centers of Excellence
- Smarter Healthcare
- Smarter Cities

This growth will further the IE markets of:

- Healthcare – The health IT growth will be a growing demand for the \$7 Billion dollar
- GDP healthcare market in the Inland Empire
- Local Government – The increased use of technology to deal with the growing demands on local government will impact the \$16 Billion dollar GDP in local government in the Inland Empire
- Logistics/Warehousing/Transportation – The value of the southern California 2-way trade was \$403.4 billion in 2012, providing 70,000 jobs in the Inland Empire. This segment of the economy is targeted for high investment and growth.

Conclusion:

The IE is positioned to benefit from the defined growth in traditional IT jobs. It is further in a strong position to drive economic/jobs growth in advanced economies with the new technology, feeding the regional use of technology and increasing the demand for ICT jobs and training. As outlined in the Model Comprehensive Regional Career Pathway for ICT/Digital Media, the development of a defined pipeline of workers with the latest skills and certified work readiness, will enable our local employers to advance their economic growth in these areas, and will support and feed the growth of ICT jobs throughout the region.

MODEL COMPREHENSIVE REGIONAL CAREER PATHWAY ICT/DIGITAL MEDIA - DESERT/INLAND EMPIRE REGION

