

**Information and Communications Technologies (ICT)/Digital Media Gap Analysis  
San Diego and Imperial Counties Region  
Summary of Preliminary Results**

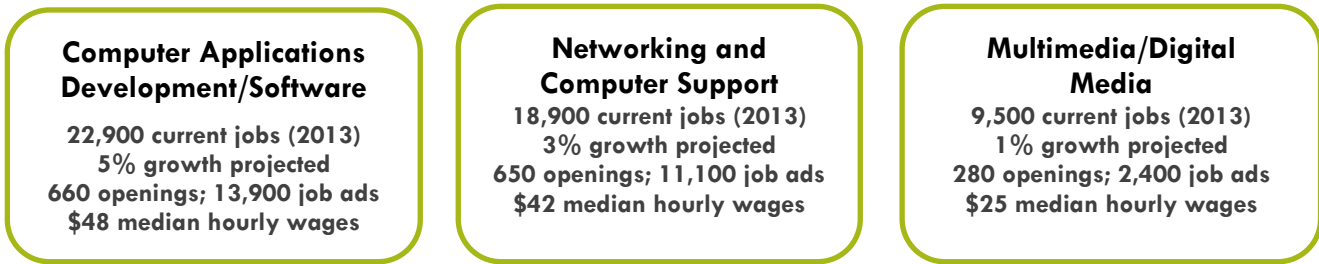
**Definition**

**ICT** is an umbrella term to encompass all rapidly emerging, evolving and converging computer, software, networking, telecommunications, Internet, programming and information systems technologies.

**Digital Media** is “the creative convergence of digital arts, science, technology and business for human expression, communication, social interaction and education”

**Demand Side**

- . 24 occupational titles researched
- . 51,400 current jobs in the SD/Imp region (2013)
- . 4% growth projected in next 3 years
- . 1,590 annual job openings projected (new + replacement)
- . 27,400 job advertisements posted in 2013



**Skills in Demand**



<u>Specialized Skills</u>	<u>Job Ads</u>	<u>Specialized Skills</u>	<u>Job Ads</u>	<u>Specialized Skills</u>	<u>Job Ads</u>
Software Engineering	4,020	SQL	1,920	JavaScript	654
JAVA	3,238	LINUX	1,561	Adobe Photoshop	612
C++	3,047	Oracle	1,554	Web Site Development	579
LINUX	2,548	UNIX	1,124	Graphic Design	517
SQL	2,227	Systems Engineering	1,074	Web Site Design	402
JavaScript	2,033	System & Network Configuration	1,051	Adobe Acrobat	389
Microsoft C#	2,013	System Administration	999	jQuery	352
Debugging	1,761	Database Administration	930	Hypertext Preprocessor (PHP)	328
Computer Engineering	1,672	Technical Support	924	HTML5	283
Object-Oriented Analysis and Design (OOAD)	1,649	JAVA	907	Web App. Development	272

**Supply Side**

**Comp. App. Development/ Software Programs:**

Computer Sciences, Computer Programming, Information Technology, Software Applications, Information Sciences, etc.

**Networking and Computer Support Programs:**

Computer Information Systems, Information Technology, IT Management, Computer Systems Analysis, Computer & Information Systems Security, Computer Systems Networking and Telecommunications, Computer Networking, Computer Infrastructure and Support, Computer Support, etc.

**Multimedia/Digital Media Programs:**

Web Design and Development, Animation, Multimedia, E-Commerce, Electronic Game Design, Digital Media, Web Administration, Computer Graphics, Applied Design, Desktop Publishing, Graphic Design, Broadcast Journalism, Radio and TV, Film Production, etc.

# Information and Communications Technologies (ICT)/Digital Media Gap Analysis

## San Diego and Imperial Counties Region

### Summary of Preliminary Results

#### Annual Regional Completions (5-year average)

	Computer Applications Development/Software			Networking and Computer Support			Multimedia/Digital Media		
	Certificates	Associate degrees	Bachelor's degrees	Certificates	Associate degrees	Bachelor's degrees	Certificates	Associate degrees	Bachelor's degrees
Community colleges	30	32	-	80	61	-	116	91	-
Proprietary Colleges & Universities	109	89	384	173	192	179	173	161	556
<b>TOTAL</b>	<b>139</b>	<b>121</b>	<b>384</b>	<b>253</b>	<b>253</b>	<b>179</b>	<b>289</b>	<b>252</b>	<b>556</b>

## Gap Analysis

ICT/Digital Media Cluster	Demand		Supply				Over/Under-Supply (using EMSI)
	Projected Annual Job Openings (EMSI)	2013 Job Ads (Burning Glass)	Avg. Annual Certificate Awards	Avg. Annual Associate Awards	Avg. Annual Bachelor's Awards	Total Awards	
Computer Application Development/Software	660	13,900	139	121	384	644	(16)
Networking and Computer Support	650	11,100	253	253	179	685	35
Multimedia/ Digital Media	280	2,400	289	252	556	1097	817
<b>TOTAL</b>	<b>1,590</b>	<b>27,400</b>	<b>681</b>	<b>626</b>	<b>1,119</b>	<b>2,426</b>	<b>826</b>

## Overall Observations

- There is a very large gap between the number of job ads posted online for the ICT/Digital Media occupations and the number of projected annual openings based on historic data and industry trends. This could be explained by 1) employers having difficulty hiring and competing for workers, therefore constantly re-posting the same jobs, even when they are not looking to hire immediately, 2) natural duplicates and “noise” in the job postings data, 3) conservative nature of the historic projections by EMSI, considering the recent recession, and other factors. **More research is underway to answer this question.**
- Most growth is projected for occupations related to computer programming, software development, systems analysis, networking, etc. Based on official classification, most of these positions require Bachelor's degree. However, employer feedback suggests that some employers (especially, small businesses and start-ups) would hire for many of these positions based on skills and industry certifications, not degrees. **Therefore, aligning programs with industry certifications is critical. Where industry certifications are not available or common, colleges should explore internships and other work experience opportunities for students to help them build a portfolio.**
- High schools provide many opportunities for students to explore multimedia related careers (over 5,000 students completed related ROP courses last year), but there is clearly a lack of programs in programming, software, networking, etc.
- ICT/Digital Media workforce is employed across sectors – not just IT and Telecom, but also in healthcare, retail, manufacturing, etc. **These entry-level pathways should be considered by colleges.**
- Based on the advisory committee feedback, employers are increasingly looking for skills in virtualization, information security analysis, data conceptualization, software testing, and user interface design. **Incorporating these skills as SLOs into the curricula of existing programs is important.**