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ICT/DM Regional Profile

Palomar Chair & Director Meeting

By Duane Rinehart, MBA

Regional Director, Employer Engagement

4 OCT 2019

Regional Directory of Employer Engagement

- California Community Colleges:
 - ICT Regional Director in San Diego / Imperial Counties
 - Professor in San Diego Continuing Education
- Industry:
 - Scripps Research : Research Programmer in Metabolomics and Mass Spectrometry
 - Senior Marketing Consultant to Qualcomm, Microsoft, Cisco, Karl Strauss, ViaSat, Welk Resorts
- Academic:
 - MBA – The Ohio State University
 - Master in Information Systems Management – Keller, (DeVry University)
 - BA in French, The Ohio State University
 - BA in International Studies, The Ohio State University



Duane Rinehart

ICT/DM Sector Includes...

Subsector	Jobs in Region ⁽¹⁾	Companies / Organizations (with Regional Presence)	Total Employees in Region
Business Information Worker (office productivity software)	23,190	89 ⁽²⁾	39,190 ⁽²⁾
IT Networking / Cybersecurity	2,870-8500 ⁽⁶⁾	3,805 ⁽³⁾	74,845 ⁽³⁾
Computer Science / Software Development (BS only)	2,294		
Digital Media / Entertainment	610	7,680 ⁽⁴⁾	296,042 ⁽⁴⁾

Note: “Core” Employment as percentage of total workers is 9.4% statewide ⁽⁵⁾; Region is 6.9-14% (Networking/Cybersecurity + Software Development), reflecting cybersecurity concentration (DoD and military), but also cross-sector opportunities

Sources: 1) WestEd (2017), Launchboard, US Census (BIW includes firms with <250 employees and only job education level greater than high school but less than bachelor); 2) ReferenceUSA (MAR-2019) – companies with HQ in region, 250+ employees; 3) ReferenceUSA (MAR-2019) NAICS codes: 334111, 334118, 334112, 334210, 334290, 334220, 334310, 334417, 334419, 334412, 334413, 334416, 334613, 334614, 511210, 517311, 517312, 517410, 517919, 518210, 519190, 541512; 4) ReferenceUSA (MAR-2019) NAICS codes: 334111, 334310, 334510, 335999, 336611, 339112, 339920, 511199, 511210, 515120, 517919, 519110, 541511, 541613, 541810, 541840, 541921, 561510, 611110, 621511, 622110, 711410, 841890; 5) CompTIA 2018 Cyberstates report – California (cyberstates.org); 6) San Diego Cyber Center of Excellence (2018) – upper limit of cybersecurity only

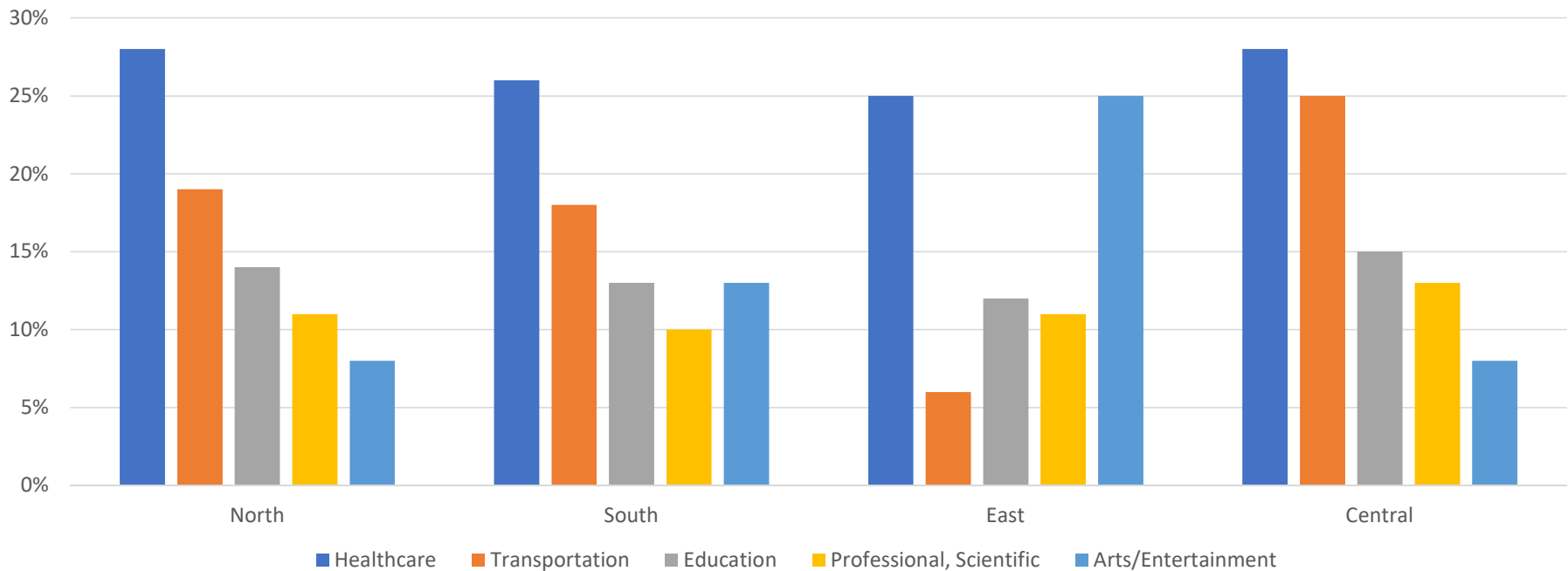
Major Employers by Subsector

Subsector	Employers ⁽¹⁾
Business Information Worker (office productivity software)	Illumina, ViaSat, General Atomics, Cubic, Qualcomm, Optum Health, Solar Turbines, Sempra Energy, Rady Children’s Hospital, Scripps Research, Callaway Golf, AMN Healthcare, Bridgepoint Education
IT Networking / Cybersecurity	NAVWAR (prev. SPAWAR) * (42-71% of all cyber jobs)
	Northrop Grumman, Raytheon, Solute, Serco, Engility (SAIC), Booz Allen Hamilton, Teradata, Qualcomm, General Atomics, Sony Electronics, BAE Systems, ViaSat, Accenture, Leidos, ServiceNow
Computer Science / Software Development (BS only)	Qualcomm, Intuit, Mitchell, Cymer, ViaSat, Illumina, General Atomics, General Dynamics, SAIC, Leidos
Digital Media / Entertainment	Sony, Qualcomm, Activision, HP, ServiceNow, Thermo Fisher Scientific, Via Technical, Illumina, Teradata, Accenture, Sayva Solutions

Sources: 1) CoE reports, San Diego EDC, and Primary Research

Industry Growth by Subregion – San Diego County

Growth by Industry (2018-2028)



Healthcare, Education and Professional Services will continue double-digit growth in all subregions (8% expected growth across SD County for all industries)

North San Diego County Employers

North SD County - Findings

- Highest expected growth in 92121 (Sorrento Valley) ⁽¹⁾, led by large firms : 8 firms have 10% of all employees in zip code ⁽³⁾
 - Currently 35,984 total employees [in ICT/DM subsectors] among 814 companies ⁽²⁾ (32.4% of total employees in zip code)

Average Annual Job Openings by selected N. County cities 2018-2028 ⁽¹⁾ :

City	Annual Job Openings	City	Annual Job Openings
San Diego ⁽⁴⁾	26,856	Encinitas	4,074
Carlsbad	9,636	Murrieta	3,907
Oceanside	9,052	Temecula	5,583
Escondido	7,620	San Juan Capistrano	2,862
Vista	6,347	Camp Pendleton	2,008
San Marcos	5,737	Solana Beach	1,464
Poway	4,940	Ramona	1,065

Sources: 1) CoE North Subregional Profile (MAY-2019); 2) ReferenceUSA; 3) Qualcomm, Acclerlys, Ametek, Aberdeen, General Atomics, Psemi, Blackbaud, Max Linear; 4) agg. of zip codes: 92121, 92126, 92128, 92130, 92127, 92131

North SD County – Findings (con't)

- Miracosta, Palomar and SD Miramar would benefit from engaging with the following employers (for work-based learning, jobs, industry advisories, etc.):
 - IT Networking / Cybersecurity
 - Computer Science / Software Development

Employer (≥250 emp)	
Aberdeen Group	MaxLinear
Accelrys (Biovia)	Nordson YESTECH
AMETEK Programmable Power	pSemi
Cohu Semiconductor Equipment Group	Qualcomm
General Atomics	Sony
HM Electronics, Inc	SquareTrade (prev. iCracked)
La Jolla Band of Luiseño Indians	Viasat

Employer (<250 emp)	
Autosplice Inc	Lightning Messenger Express
Cymer	Meggitt Engine Systems
DEI Holdings Inc	Nielsen
DivX	Presidio Components
Epicor Software	SOMACIS Inc
Kontron America	Wal-Mart Labs
LG Electronics	XIFIN, Inc

Sources: ReferenceUSA based on primary, secondary or tertiary NAICS codes and augmented with primary research and de-duplicated from other N. county lists

North SD County – Findings (con't)

- Miracosta, Palomar and SD Miramar would benefit from engaging with the following employers (for work-based learning, jobs, industry advisories, etc.):
 - Business Information Worker

Employer (≥250 emp)	
Altman Plants	Hunter Industries Inc
American Specialty Health, Inc	MedImpact Healthcare Systems
AMN Healthcare	Petco Animal Supplies Inc
Callaway Golf Co	Scripps Health
Color Spot Nurseries Inc	Tandem Diabetes Care, Inc
Dexcom Inc	Welk Resorts Group
General Coatings Corporation	Zodiac Pool Systems, Inc

Employer (<250 emp)	
Hawthorne Cat	Kratos Defense & Security Solutions
Nuvasive Inc	Jazzercise Inc
WD-40	NTN Buzztime Inc
Halozyme Therapeutics Inc	Neurocrine Biosciences Inc
Steren Electronics LLC	Helix Electric
Dudek & Assoc	Quidel Corporation
Pricesmart Inc	Hardage Hospitality

Sources: ReferenceUSA based on HQ location within region and augmented with primary research and de-duplicated from other N. county lists

North SD County – Findings (con't)

- Miracosta, Palomar and SD Miramar would benefit from engaging with the following employers (for work-based learning, jobs, industry advisories, etc.):
 - Digital Media / Entertainment

Employer (≥250 emp)	
Biosite Diagnostics	Palomar Medical Center Escondido & Poway
Breg Inc	Scripps Memorial Hospital
Care Fusion Corp	Signet Armorlite
DJO Global	Taylor Made Golf Co Inc
Hologic Gen-Probe Inc	TE Connectivity Ltd.
LPL Financial	Thermo Fisher Scientific
Machintel Corp	Tri-City Medical Ctr

Employer (<250 emp)	
Sequenom Inc	North County Health Services
Jenny Craig Inc	Rockstar San Diego
Beckman Coulter Inc	Sharp Rees-Stealy Medical Group
Celgene Corp	Trex Enterprises Corp
Epicor Software Corp	Merge (prev. Watson Health Imaging)
Falmat Inc	True Temper Sports Inc.
Modern Postcard	Synteract

Sources: ReferenceUSA based on primary, secondary or tertiary NAICS codes and augmented with primary research and de-duplicated from other N. county lists

Appendices

Appendix A – Primary Research Methodology

- In person, intercept and phone interviews conducted with >50 companies/organizations comprising representative mix of industries, employee size and relevancy to sector
- Master list compiled from ReferenceUSA, CoE reports, San Diego EDC maps and targeted canvassing of tech firm concentration areas (Downtown SD, Kearny Mesa, Sorrento Valley, Carlsbad, Rancho Bernardo, etc.) ⁽¹⁾
- Individuals within companies met through Meetup groups, industry advisories, adjunct faculty referrals, hiring events and cold calling
 - Individuals held positions of C-level, hiring managers, HR managers, team leads and non-managerial professionals
- Survey instruments were constructed based on industry, employee size and mix of subsector activities
- Goal was to validate knowledge, skills and abilities identified through secondary research, which typically was not regionally-focused

Supplemental

Knowledge, Skills, Abilities for Success by Subsector

Business Information Worker	IT Networking/Cybersecurity	Computer Science / Software Development	Digital Media / Entertainment
Business Communications & Computer Literacy	A+ (or comparable hardware) (esp. retail)	CS-ADT	Graphic Design (Adobe - Photoshop, Illustrator, InDesign)
MS Office (Word, Outlook)	Help desk / troubleshooting	C++, python, Java, Javascript + node.js	Video/Audio Production
Excel (pivot tables) or Google Docs	CISCO (or comparable) certification	Linux, Windows Server (certification valued but not without degree)	Photography
Quickbooks, Salesforce	Security+, CySA+, CISA, CISSP certifications	RDBMS (MySQL, MS SQL Server, Oracle) NoSQL (mongo, couchdb); graph db (e.g. Neo4j) for GIS	Writing / storytelling / journalism
Business math	Open source security tools (e.g. Kali)	Scripting (bash or Powershell)	[Web] Publishing
	Scripting (bash)	Debugging; Frameworks – AngularJS, React	Social media

KSA – Hybrid or New Subsectors

- New subsectors are evolving in data management / “cloud”, data science. In addition specialized applications of IT are forming in healthcare and advanced manufacturing

Data Management / Cloud	Analyzing Data (Data Science)	Healthcare	Advanced Manufacturing
Software Engineering	Data collection / web scraping	Security (HIPAA compliance)	Sensor-driven analytics
Scrum	Pivot Tables	Databases (Electronic Medical Records)	Universal integration (API, connecting subsystems)
Agile Development	Basic Statistics	ICD-10 coding (terminology)	Basic Statistics / Math
Unit Testing	R, SAS	Business management	CAD/CAM
DevOps	Machine Learning (applying algorithms)	Reporting	Robotics (programming)
Software Architecture	“Big Data” analytics	Credential – RHIT (Associate’s), RHIA (Bachelor’s)	Supply chain / ERP knowledge
Application Design	Predictive modeling		