

# Tech People Architecture: Finding Order in Tech Labor and Pay Chaos



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**T**echnology is a wondrous thing that has dramatically changed every person's life. But none more so than the professionals who analyze, design, build, launch and support technology innovation in private and public organizations around the world. For their employers, at best it's a situation of controlled chaos as they toil to build and maintain a workforce that can expertly fashion technology into a competitive springboard to profitability. But at worst, it's a constant struggle to find, hire, pay, promote and retain increasingly multidimensional professionals in an environment of predatory labor markets and constant skills gaps. Few are excelling at these imperatives or even consistently succeeding.

Arguably, the biggest problem organizations face is the endless cascade of game-changing disruptive technologies offering the prospect of tantalizing returns on investment. They must either invest in new competitive technology or be left behind. This has introduced a variety of thorny people-management issues when it comes to tech professionals.

Consider this short list of disruptors making life more difficult for total rewards (TR) professionals:

- Artificial intelligence (AI)/Machine learning
- Internet of everything (IoE)
- Blockchain
- Robotics process automation
- Big data/advanced analytics
- Cybersecurity
- Health-care tech/telemedicine
- Cloud computing
- Edge computing
- Quantum computing
- Exponential energy/carbon-reducing technology
- Autonomous vehicles

If these technologies existed independent of one another, it might not be nearly as alarming from a labor demand perspective. But they don't. They are all part of one gigantic, dynamic digital mesh. It's difficult to find an employer that isn't struggling to come up with its own unique tech-staffing model that balances four factors: addressing the urgencies of digital innovation; combating deepening cybersecurity threats; addressing ever-changing customer sophistication; and keeping increasingly complex systems and networks running smoothly and efficiently. Complicating all of these is the accelerating pace of change.

Getting compensation right for technology professionals has been an especially unique and nagging problem. Compensation and benefits staffs have experienced decades of constant market price volatility for tech jobs driven by the swinging pendulum of hot skills and weak tech labor supply for high-demand jobs and skills. That volatility is not just in their internal workforces but also the gap-filling consultants, contractors and temp workers who have become a sizable portion of many employers' workforces. And, with the availability of open-source tools and platforms competing with vendor offerings to create vast multidimensionality in tech jobs, it's very difficult for compensation teams to keep job definitions up to date and correctly positioned in an established job structure. Thus, job alignment or equalization initiatives have become imperatives to ensure that workers inhabiting the same roles and performing essentially the same work — but in different parts of the enterprise — are graded similarly and paid fairly.

## **IT BEGINS WITH ADMITTING THERE IS A PROBLEM**

In a process reminiscent of a 12-step program, the past few years have witnessed employers finally facing up to the painful reality that compensation practices for their tech professionals are outdated and ad hoc work-around pay solutions in place for years are no longer working. Too often absent is the kind of agility, flexibility and power required to do competitive combat in this digital universe.

Employers may not understand how to solve these problems, but they've realized the need to build a new foundation on top of the underperforming job definition, career pathing and compensation practices now in place, all the while keeping up with day-to-day demands of serving their current tech workforce.

Most will come to believe that the comp and benefits solution is not just an HR activity but an enterprise fix requiring the active participation of all key personnel throughout the organization who have a stake in managing technology jobs. In some cases, there are corporate cultural imperatives that need to be addressed. In all cases, senior executives and managers have the responsibility of determining job content, defining skills and projecting labor demand based on business strategy and timelines going forward. They are likely good at doing this but rarely allocate enough time to these tasks.

These fixes don't happen overnight and "clean sheeting" organizational systems and practices isn't realistic. Instead, the goal should be building a new HR foundation under what is already in place, incrementally strengthening that foundation over time in a sustained and concentrated effort. Practically speaking, it takes a few fiscal cycles just to get budgets in line with a cascade of carefully orchestrated job definition exercises, pay reviews, training and development initiatives. Plus, recruiting efforts are launched with the goal of optimally restructuring the workforce for addressing disruptive digitalization.

## **AN ARCHITECTURE-DRIVEN SOLUTION FOR TECH PROFESSIONALS**

Their digital futures in mind, senior executives have been asking not just HR, but business line and technology leaders to be more accountable in solving tech labor issues. Scrutiny of their performance has intensified, starting with greater security (against dreaded cyberattacks), advanced data analytics (for making more informed decisions) and generally capitalizing on fast-moving technology opportunities — all of which can only be achieved with the right people in place.

With new pressures to execute more predictably in unfamiliar areas, applying architecture principles and practices to managing the tech workforce has proven to be the most consistent, viable solution to systemic tech-compensation, recognition and talent-development problems.

Why? Because the advantages of any architecture approach are:

- Improved decision making
- Minimization of unwanted circumstances
- Improved adaptability to changing demands or market conditions
- Elimination of inefficient or redundant processes
- Optimization of the use of assets.

Architecture framework is familiar: Business and technology leaders have been practicing sound architecture practices for decades. This is exactly why the migration to architecting the tech workforce has shown results in uncertain tech labor market conditions.

Tech people architecture (TPA) is very similar in principle to traditional architecture initiatives but applied to tech workforce management practices. There are road maps, blueprints and performance metrics. Governance issues get attention and business strategy drives every aspect. But with TPA, it's about how key human capital management elements — such as job definition and design, skills demand and acquisition, compensation, incentives and recognition, professional development and work/life balance — plug into an overall operational model that is different going forward than it has been in the past. The model can be tuned to new technologies, a constantly changing business environment, and culture and performance philosophies. And, like any disciplined architecture approach, it promotes scalability and flexibility.

Many opportunities for reducing tech labor chaos are created by employing a TPA framework, including:

- Aligning how tech jobs are defined and titled across an enterprise. Creating standards where there are little or none, eliminating duplication and correcting mistitled workers.
- Defining unambiguous career paths, clearly mapping out how workers can move more effectively through promotions.
- Paying workers appropriately to address constantly shifting skills supply/demand and true local market rates. This creates more consistent job expectations, levels and compensation.
- Building talent development practices that are clearly defined to enable development plans to fill future staffing requirements.
- Narrowing (or eliminating) persistent internal technology skills gaps. Building and maintaining skill proficiencies in technical, business and soft skills that meet forecasted requirements.
- Narrowing or altogether eliminating skills gaps.
- Achieving higher retention rates for top talent.

Across our research partner network of nearly 3,500 employers in the United States and Canada, we've observed countless positive results from TPA initiatives:

- Reducing by 50% to 70% the number of tech-related job titles used to plan and administer pay — without changing the actual job titles bestowed on tech workers.

### **WHO IS A TECHNOLOGY PROFESSIONAL?**

By definition, the tech workforce encompasses dedicated IT professionals in both centralized and decentralized roles who design, develop, build, implement, maintain and manage information technology. It also includes a wider group of analysts, architects, product developers, project managers and developers. Today, one can find tech pros reporting to finance and accounting departments and to operations, logistics/distribution, marketing, sales, human resources, lines of business and product development groups. Some tech jobs are customer-facing, while others are strictly internal. The complexity of properly compensating tech workers across so many domains should be obvious, especially when it comes to defining internal equity.

- Reducing tech staff churn in key roles, especially the most experienced tech workers.
- Streamlining and simplifying compensation administration, giving employers the capacity to classify and market price any job, no matter how unique it is.
- Reducing uncertainty about how much to pay tech professionals, especially new jobs and the “Swiss Army knife” hybrid positions.
- Reducing job definition/design chaos around tech jobs that don't fit in with established tech roles.
- Increasing consistent availability and quality of skills and workers and achieving higher utilization rates.

## BUILDING A TECH PEOPLE ARCHITECTURE FRAMEWORK

Seven pillars define a successful technology people architecture. Each is singularly important but how they integrate with one another is critical to a successful TPA execution.

- 1 | **Role architecture:** Defining and aligning tech jobs across the entire enterprise not by job title, but instead by role. Validating career progression/tracks within each role.
- 2 | **Job documentation and design:** Detailing specifications that define a specific job in terms of purpose, responsibilities and qualifications.
- 3 | **Workforce planning and structuring:** Standardizing tech jobs and job elements; current versus future jobs and transition to a future state; appropriate job grading and leveling. Developing and maintaining a pool of consistently skilled and experienced workers to execute on explicit business requirements.
- 4 | **Agile compensation:** Accurately determining how much to pay tech professionals, consistency in pay for those who do similar work in a different part of the enterprise and flexibility to adjust pay to meet the demand of volatile labor markets.
- 5 | **Governance:** Establishing clear guardrails for who makes decisions about tech role definition and standardization, career development and compensation/rewards.
- 6 | **Facilitation/communication:** Ensuring that tech professionals understand their job expectations, career paths, skills development and professional development opportunities.
- 7 | **Speed and agility:** Narrowing the time lag between decision making and implementation of tech management changes.

TPA inserts a new HR foundation under what's already there by incrementally strengthening the human capital management foundation over time. One option is to keep much of what you already have in place but strengthen and rebuild foundational systems to reduce severity of workforce problems (e.g., staff retention, skills acquisition, talent recruiting, pay inequity). Another option is a large-scale phased replacement of people management systems, programs and practices with

more effective ones while also building a stronger foundation and adding new critical capabilities for future requirements.

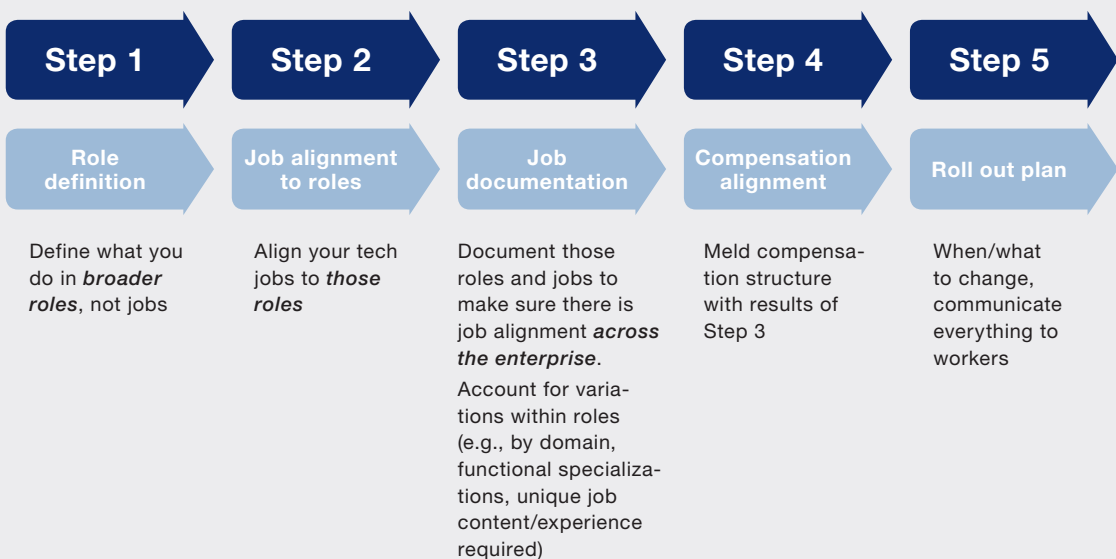
TPA is a five-step process and doesn't have to be a big initiative with lots of fanfare. It can just as easily be applied to a target employee group such as info/cybersecurity, digital product development, mobile computing, cloud computing and advanced data analytics departments. Figure 1 illustrates the core components of TPA in the order in which they should be implemented.

The process begins by acknowledging a notorious dilemma faced by HR departments for decades: a lack of standardization in tech job titles for what tech professionals actually do. We see this from employer to employer — and sometimes within one employer. This makes titles an unreliable reference point not just for internal tech job structuring, but especially for benchmarking pay using salary surveys that lack detailed job descriptions for surveyed positions. Unless a compensation staff can compare tech professionals' actual job content to job descriptions with enough depth, the chances for mismatches are extremely high.

The same problem can confound job alignment and job structures created in the TPA process, which depends on accurate job documentation and comparisons. It's a problem that has dramatically worsened as new technologies and applications have driven a demand for more multidimensional tech jobs in a tech-business hybrid workforce.

Step 1 in TPA initiatives is developing a tech role framework similar to the example in Figure 2. Roles are groups of tech professionals who do similar work, irrespective of their current job titles or the departments they work in. Most employers will have from six to nine roles similar to the example. Each role comprises tech jobs that are technology or business focused — and sometimes a

FIGURE 1 Tech People Architecture: Five-Step Process



Source: Foote Partners LLC

**FIGURE 2** Technology People Architecture Begins by Focusing on Tech Roles, Not Job Titles

High-level Role	Architect		Analyst		Software Engineer	IT Specialist			Project/Program Management	Tech-Business Roles
	(same)	General Analyst	Business Analyst	(same)	Programmer/Developer	Infrastructure Engineer	Technician	Administrator	(same)	(different for each employer)
Director										
Sr. Manager										
Manager										
Consultant										
Principal										
Lead										
Senior										
Intermediate										
Associate										
Entry										

Source: Foote Partners LLC

combination of the two. Roles are defined by standard competencies and qualifications that are consistent and objective across all similar jobs. But in this step only, broader roles are established. Job titles are not ignored, but they are not the currency with which roles are initially built.

Each role is typically organized by an end-to-end definition that spans from junior to senior levels and helps differentiate tech professionals by function. From the role architecture, employers can then drill down into technical, non-technical and soft skills and competencies from multiple skill groups.

This is one of the most valuable aspects of role-based job structures under TPA: helping organizations define and clearly communicate career paths, validating cross-professional and cross-functional jobs and articulating training and development options for workers. Tech roles often incorporate skill certification or informal accreditation of skills as vehicles for validating consistent standards of skill, knowledge and experience. TPA organizes those clearly and in detail. Also, by starting with a broader focus on tech roles, it is easier to progress to defining, grading and leveling the jobs.

Steps 2 and 3 in TPA initiatives — job alignment and job documentation — are the most critical components to success in people architecting. This typically requires the commitment of mid-level managers and subject-matter experts to do the hands-on work of examining the current tech workforce, aligning them across the enterprise and then formalizing the overall job structure.

It begins with identifying, prioritizing and documenting an employer's tech jobs and placing each job and job family in the role architecture framework. (See Figure 3.) Jobs can then be checked for alignment by level and job content across the enterprise. Developing jobs and job families based as much as possible on standards and best practices across industries helps the enterprise gauge how in/out of alignment it is with industry norms. It is also important in this step to factor in future jobs so that they can be easily dropped into the role architecture and competitive compensation can be determined at the time recruitment efforts commence.

A panel of technology subject-matter experts and managers is formed and accountable for hands-on job definition and developing detailed job hierarchies informally called “additive matrices” because these hierarchies, typically built in Excel or other spreadsheet software, clearly display job progression in vivid detail in a single worksheet view: how jobs build level-to-level according to duties and responsibilities; skills and knowledge; competencies; minimum and preferred experience qualifications; and certifications (when applicable). Experience qualifications can be optionally ranked by importance and how much they are required for key responsibilities vs. less essential job content.

As validation of the job hierarchies takes shape and the panels have mapped job families to each role, they next match individual incumbents in current jobs to each role, family and jobs that make up each job family, in each role. At the end of the TPA process, each tech professional is aligned to one job family.



**FIGURE 3** Sample Tech People Role Architecture

	Software Engineering	Software Quality Assurance	Infrastructure Engineering	Administrator	Technician	Architecture	Project Management	Program Management	Business Analyst
<b>Vice President</b>	VP, IT Solutions		VP, Infrastructure Engineering			VP, Enterprise Architecture		VP, IT PMO	
<b>Director of People</b>	Director, IT Solutions	Director, SQA	Director, Infrastructure Engineering	Director, Enterprise Systems	Director, IT Support	Director, Enterprise Architecture		Director, IT PMO	
<b>Director of Process</b>	Enterprise Software Engineer					Enterprise Architecture			
<b>Manager of People</b>	Applications Portfolio Manager Manager Software Engineering	Manager, SQA	Manager, Infrastructure Engineering	Manager, Enterprise Systems Supervisor, Systems Administrator	Sr. Manager, IT Support Manager, IT Support IT Support Supervisor	Manager, Architecture	Senior IT Project Manager IT Project Manager	IT Program Manager	Manager, Business Analyst
<b>IC4 / Manager of Process</b>	SE Consultant	SQA Consultant	Senior IE Consultant Senior IE Consultant		Lead Support Analyst	Sr. Architect Architect	I&O Project Engagement Manager Asst. Project Mgr.	Associate IT Program Manager	IT Enterprise Business Analyst IT Sr. Business Analyst
<b>IC3</b>	Sr. Software Engineer Software Engineer	Senior SQA Engineer SQA Engineer	Infrastructure Engineer III Infrastructure Engineer II	Sr. Systems Administrator Sr. Systems Administrator III	Sr. Support Analyst		IT Project Analyst IT Project Specialist	IT PMO Analyst IT PMO Specialist	IT Business Analyst IT Sr. Associate Business Analyst
<b>IC2</b>	Sr. Software Developer Software Developer Assoc. Software Developer	SQA Analyst Associate SQA Analyst	Infrastructure Engineer I Associate Infrastructure Engineer	Systems Administrator II Systems Administrator I	Support Analyst Support Technician		IT Project Coordinator	IT PMO Coordinator	IT Associate Business Analyst
<b>IC1</b>				Assoc. Systems Administrator					

Source: Foote Partners LLC

Also key to these two steps is recognizing that the same role, practiced in different domains, can substantially change its required skills mix compensation. For example, while software engineers may be categorized in the same fundamental role, there can be significant differences in their minimum skill, knowledge and experience qualifications, depending on whether they work in, for example, cloud or mobile computing areas, e-commerce, digital product development, business intelligence, information security or a data center. Once the panels have aligned and documented what makes all software engineers similar, they next examine what makes them different and document those differences in the job hierarchies. TPA additive matrices can vastly simplify this process.

(Figure 4 is used for visual purposes only. To read the details: <https://bit.ly/2ICopZJ>)

In this stage of TPA, employers will likely discover misalignment problems such as the same job being leveled and/or graded differently in accordance to where it is located in the enterprise. Or employers may find jobs that have been mislabeled — often intentionally — to elevate them in the grading structure as an ad hoc solution to increasing their base pay. Our firm has assisted employers in TPA installations where three-quarters of workers with “analyst” or “architect” job titles performed little to no analytical or architecture duties. TPA uncovers and records these anomalies so employers can choose whether to correct these problems — and how — going forward.

Most tech workers will not have their grade affected as a result of job family alignment in a TPA process, although in extremely rare cases a grade may go up or down as a result of this alignment.

Can tech workers move between job families? Moves across or between job families may be done by workers formally applying for a job in another family. Consistent job descriptions with clearly defined competencies help tech workers identify training and development opportunities so they can seek the competencies necessary for any job.

Job consolidation also happens at this stage. Without needing to change the actual job titles bestowed on tech workers, employers can substantially reduce — often by 30% to as high as 70% — the number of tech-related job titles required to plan and administer pay. Figure 5 displays a sample of how infrastructure engineering jobs have been consolidated under nine corresponding roles in the job hierarchy built for this segment.

## **AGILE COMPENSATION AND TPA**

Once the detailed job hierarchy matrices have been built, Step 4 in a TPA implementation melds compensation processes with the hierarchies. Starting with existing job grades, job codes and compensation data, a total compensation structure is assessed by levels and grades with internal equity controls. Proprietary market pay benchmark surveys are introduced at this stage as an analysis is performed to gauge how current pay levels match up against market pay levels. Figure 6 provides

FIGURE 4 Additive Matrices (partial samples)

Job Title:	Software Developer	Software Developer	Software Developer	Software Developer	Software Developer - NDN
<b>6. Responsibilities - Job Level</b>	<b>Software Developer</b>	<b>Software Developer</b>	<b>Software Developer</b>	<b>Software Developer</b>	<b>Software Developer - NDN</b>
<b>6.1. Example: Multiple Exemplars of Job Level</b>	IC2	IC2	IC2	IC2	IC2
<b>7. Development of Self &amp; Others</b>	IC2	IC2	IC2	IC2	IC2
<b>8. Account Ability - Critical Ability/Attributes</b>	IC2	IC2	IC2	IC2	IC2
<b>9. IC2 Responsibilities by Job Role</b>	IC2	IC2	IC2	IC2	IC2
<b>7. Requirements Transition</b>	IC2	IC2	IC2	IC2	IC2
<b>8. Software Construction &amp; CI/CD</b>	IC2	IC2	IC2	IC2	IC2
<b>9. Implementation &amp; Maintenance</b>	IC2	IC2	IC2	IC2	IC2
<b>10. Strategic Planning</b>	IC2	IC2	IC2	IC2	IC2
<b>11. Technical Leadership</b>	IC2	IC2	IC2	IC2	IC2
<b>12. Business Development</b>	IC2	IC2	IC2	IC2	IC2
<b>13. Project Management</b>	IC2	IC2	IC2	IC2	IC2
<b>14. Quality Assurance</b>	IC2	IC2	IC2	IC2	IC2
<b>15. Compliance</b>	IC2	IC2	IC2	IC2	IC2
<b>16. Risk Management</b>	IC2	IC2	IC2	IC2	IC2
<b>17. Vendor Management</b>	IC2	IC2	IC2	IC2	IC2
<b>18. Customer Support</b>	IC2	IC2	IC2	IC2	IC2
<b>19. Training</b>	IC2	IC2	IC2	IC2	IC2
<b>20. Documentation</b>	IC2	IC2	IC2	IC2	IC2
<b>21. Security</b>	IC2	IC2	IC2	IC2	IC2
<b>22. Performance</b>	IC2	IC2	IC2	IC2	IC2
<b>23. Scalability</b>	IC2	IC2	IC2	IC2	IC2
<b>24. Reliability</b>	IC2	IC2	IC2	IC2	IC2
<b>25. Availability</b>	IC2	IC2	IC2	IC2	IC2
<b>26. Disaster Recovery</b>	IC2	IC2	IC2	IC2	IC2
<b>27. Business Continuity</b>	IC2	IC2	IC2	IC2	IC2
<b>28. Change Management</b>	IC2	IC2	IC2	IC2	IC2
<b>29. Configuration Management</b>	IC2	IC2	IC2	IC2	IC2
<b>30. Version Control</b>	IC2	IC2	IC2	IC2	IC2
<b>31. Code Review</b>	IC2	IC2	IC2	IC2	IC2
<b>32. Testing</b>	IC2	IC2	IC2	IC2	IC2
<b>33. Deployment</b>	IC2	IC2	IC2	IC2	IC2
<b>34. Monitoring</b>	IC2	IC2	IC2	IC2	IC2
<b>35. Logging</b>	IC2	IC2	IC2	IC2	IC2
<b>36. Alerting</b>	IC2	IC2	IC2	IC2	IC2
<b>37. Incident Response</b>	IC2	IC2	IC2	IC2	IC2
<b>38. Post-Mortem</b>	IC2	IC2	IC2	IC2	IC2
<b>39. Knowledge Base</b>	IC2	IC2	IC2	IC2	IC2
<b>40. Wiki</b>	IC2	IC2	IC2	IC2	IC2
<b>41. Confluence</b>	IC2	IC2	IC2	IC2	IC2
<b>42. Jira</b>	IC2	IC2	IC2	IC2	IC2
<b>43. Asana</b>	IC2	IC2	IC2	IC2	IC2
<b>44. Trello</b>	IC2	IC2	IC2	IC2	IC2
<b>45. Slack</b>	IC2	IC2	IC2	IC2	IC2
<b>46. Microsoft Teams</b>	IC2	IC2	IC2	IC2	IC2
<b>47. Zoom</b>	IC2	IC2	IC2	IC2	IC2
<b>48. Webex</b>	IC2	IC2	IC2	IC2	IC2
<b>49. Cisco WebRTC</b>	IC2	IC2	IC2	IC2	IC2
<b>50. Jitsi</b>	IC2	IC2	IC2	IC2	IC2
<b>51. Lync</b>	IC2	IC2	IC2	IC2	IC2
<b>52. Skype</b>	IC2	IC2	IC2	IC2	IC2
<b>53. WhatsApp</b>	IC2	IC2	IC2	IC2	IC2
<b>54. Telegram</b>	IC2	IC2	IC2	IC2	IC2
<b>55. Signal</b>	IC2	IC2	IC2	IC2	IC2
<b>56. WeChat</b>	IC2	IC2	IC2	IC2	IC2
<b>57. Line</b>	IC2	IC2	IC2	IC2	IC2
<b>58. KakaoTalk</b>	IC2	IC2	IC2	IC2	IC2
<b>59. Discord</b>	IC2	IC2	IC2	IC2	IC2
<b>60. Twitch</b>	IC2	IC2	IC2	IC2	IC2
<b>61. YouTube</b>	IC2	IC2	IC2	IC2	IC2
<b>62. Facebook</b>	IC2	IC2	IC2	IC2	IC2
<b>63. Instagram</b>	IC2	IC2	IC2	IC2	IC2
<b>64. Twitter</b>	IC2	IC2	IC2	IC2	IC2
<b>65. LinkedIn</b>	IC2	IC2	IC2	IC2	IC2
<b>66. GitHub</b>	IC2	IC2	IC2	IC2	IC2
<b>67. GitLab</b>	IC2	IC2	IC2	IC2	IC2
<b>68. Bitbucket</b>	IC2	IC2	IC2	IC2	IC2
<b>69. Docker</b>	IC2	IC2	IC2	IC2	IC2
<b>70. Kubernetes</b>	IC2	IC2	IC2	IC2	IC2
<b>71. Jenkins</b>	IC2	IC2	IC2	IC2	IC2
<b>72. Ansible</b>	IC2	IC2	IC2	IC2	IC2
<b>73. Puppet</b>	IC2	IC2	IC2	IC2	IC2
<b>74. Chef</b>	IC2	IC2	IC2	IC2	IC2
<b>75. Terraform</b>	IC2	IC2	IC2	IC2	IC2
<b>76. HashiCorp Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>77. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>78. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>79. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>80. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>81. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>82. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>83. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>84. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>85. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>86. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>87. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>88. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>89. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>90. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>91. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>92. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>93. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>94. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>95. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>96. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>97. Vault</b>	IC2	IC2	IC2	IC2	IC2
<b>98. Nomad</b>	IC2	IC2	IC2	IC2	IC2
<b>99. Consul</b>	IC2	IC2	IC2	IC2	IC2
<b>100. Vault</b>	IC2	IC2	IC2	IC2	IC2

Source: Foote Partners LLC

**FIGURE 5** Job Title Consolidation (partial sample)

Role	Proposed Administrative Job Titles	To identify these existing job titles
Vice President	VP, Infrastructure Engineering	VP IT I & O Design & Deliver VP IT Infrastructure & Ops
Director of People	Director, Infrastructure Engineering	Director Unix Engineering Director Tech Integration & DB Engineering Director Large Systems & Messaging
Manager of People	Manager, Infrastructure Engineering	I&O Design & Delivery Manager I&O Service & Support Manager Data Center Infrastructure Manager
IC4 / Manager of Process	Senior IE Consultant	(new role)
	IE Consultant	CICS System/Database/Intel Consultant Network/Storage Engineering Consultant
IC3	Infrastructure Engineer III	Intel/Network/Storage/Systems Engineer III CICS/Database/MVS System Programmers III Senior Database Administrator
	Infrastructure Engineer II	Database Administrator Intel/Network/Storage/Systems Engineer II MVS Sys Programmer II/ITO MVS Programmer II
IC2	Infrastructure Engineer I	Database Analyst; Senior Database Analyst Intel/Network/Storage/Systems Engineer I MVS Sys Programmer I
	Associate Infra. Eng.	ITE Engineering Associate

Source: Foote Partners LLC

an example of job title consolidation, grading, and pay scale benchmarking in a TPA framework.

Introduced at this stage are pay premiums for technology skills and certifications, which are an option for easily bridging gaps between current pay and market benchmarks. Cash skills pay premiums have been providing myriad solutions in the world of tech compensation practices for more than 20 years (Foote 2019.) Among them is the flexibility they offer in correcting salary compression pay to changes in market value for tech specializations when salary alone is not possible. Skill premiums programs can also be used as incentives for tech professionals, when open communications inform the workforce which certified and noncertified skills will boost their visibility, accelerate their promotability and earn them more total cash compensation. There may be prerequisites for participation in skills pay programs and limitations in how they are applied; for example, only to target groups where skills gaps are most severe.

(See Figure 7 for a an example of how tech pay gaps are identified in a TPA framework. <https://bit.ly/2ICopZJ>)

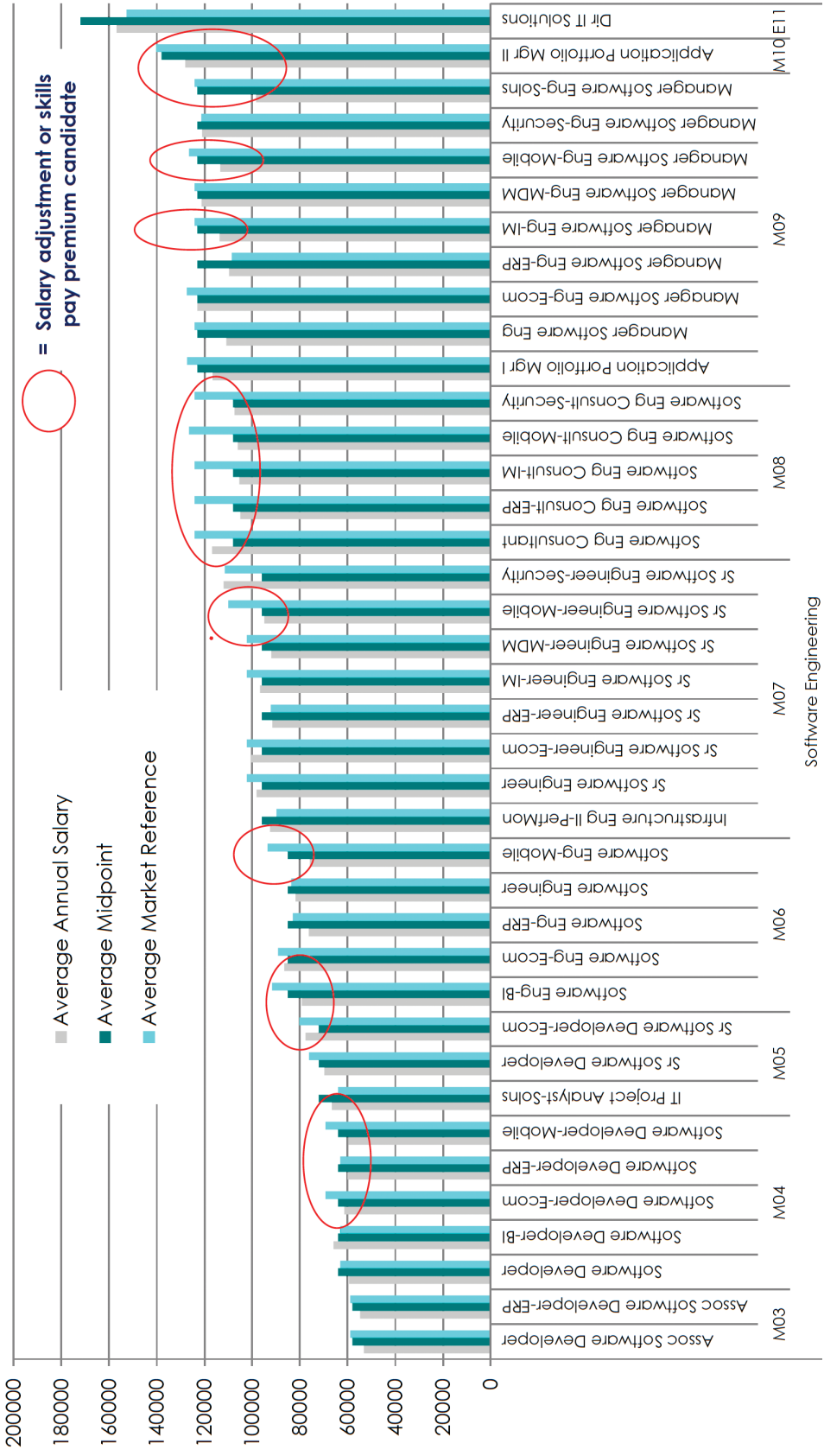
**FIGURE 6** Melding Compensation into TPA Additive Matrices (sample)

Salary Range	ROLE: Management		ROLE: Analyst		ROLE: Engineer	
	Existing Title	New Administrative Architecture Title	Existing Title	New Administrative Architecture Title	Existing Title	New Administrative Architecture Title
\$95,900	\$131,800	\$167,800				
\$84,600	\$116,300	\$148,000				
\$82,000	\$112,700	\$143,500				
	Dir-Solution Support	Sr Dir-Technology Svcs				
	Dir-Server & Storage Systems	Dir-Technology Svcs				
	Dir-Enterprise Service Mgmt					
	Supv-App Quality Assurance					
	Mgr-Apps Quality Assurance					
	Mgr-Asset Security					
	Mgr-Config/Change Mgmt					
	Mgr-Database Tech	Mgr-Technology Svcs				
	Mgr-IT Performance Eng					
	Mgr-Product Engineering					
	Mgr-Storage & Backup					
	Sr Migr-Database Tech					
	Sr Migr-Technical Ops					
	Sr Migr-Web Strategy					
\$76,200	\$99,100	\$121,900	Supv-App Quality Assurance	Lead Analyst-Technology Svcs	Mgr-Patch Mgmt	Lead Engineer-Technology Svcs
\$70,000	\$94,200	\$113,000	Change Mgmt Engineer	Sr Analyst-Technology Svcs	Sr Application Engineer	Sr Engineer-Technology Svcs
			Sr App QA Analyst		Sr QA Engineer	
			Sr QA Engineer		Sr SharePoint Administrator	
			Sr Security Analyst			
			Sr Sharepoint Admin			
\$61,900	\$80,500	\$99,000	Analyst-App QA	Analyst-Technology Svcs	Application Engineer	Engineer-Technology Svcs
			Program Mgmt Spec		IT Ops Specialist	
					Patch Mgmt Engineer	
					Perf Mont&Rptg Eng	
					QA Engineer	
					Sr IT Ops Specialist	
\$46,200	\$60,100	\$73,900	Assoc Analyst-Apps QA	Assoc Analyst-Technology Svcs		Assoc Engineer-Technology Svcs

Source: Foote Partners LLC

**FIGURE 7** Identifying Pay Gaps by Role: Software Engineers

Where is the gap widest between local market salary and current midpoint (or average of incumbent salaries) and what are the options to narrow the gap?

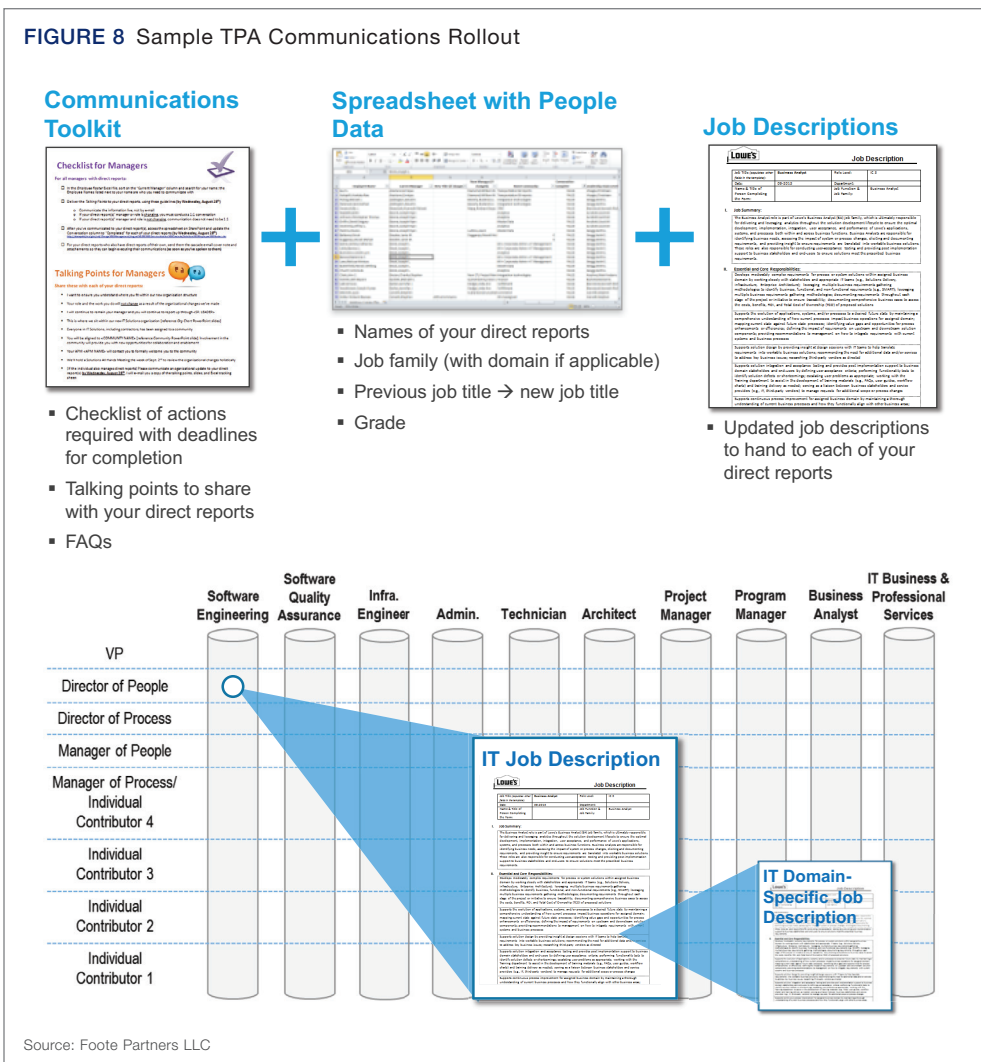


Source: Foote Partners LLC

## COMMUNICATING IT ALL TO THE RANK-AND-FILE

After the first four steps of the technology people architecture process are complete, Step 5 communicates the results to the tech workforce. Normally, managers communicate to each tech professional reporting to them, confirming their assigned job family, domain (if applicable), job description, grade and job title (if it has changed). In most cases, the objective of TPA efforts are role clarity, not a reorganization. This also needs to be clearly communicated to allay any fears.

It is also important to communicate the change process for job descriptions that grew out of the careful job design process decided by the TPA panels in constructing the job matrices. There's typically a library of standard job description templates. Within a template, a hiring manager can tailor only the preferred qualifications, not the minimum qualifications, for skills, knowledge and experience that define the job and its position in the role architecture and job matrices. Outside the formal job description, there also needs to be the flexibility to vary wording used



in recruitment advertising to match the technologies, tools and platforms specific to each job. (Figure 8 provides an example of a TPA documentation rollout.)

It's both normal and smart for employers at this TPA stage to incorporate a recalibration period that lasts a few months. With so much information being shared with rank-and-file tech professionals, this period provides valuable time for them to digest the changes and ensure they are comfortable with how their job fits in their assigned job family. Even more important, training and development opportunities can get lost in the rollout. During the recalibration phase, workers can have one-on-one and group meetings with their managers to discuss performance, as well as the new training resources available in the TPA to help them get to their next promotion in the job hierarchy.

## **CONCLUSIONS**

The so-called “First Law of Holes” is perhaps the metaphor that best describes the situation HR departments and tech managers face today in managing their technology workforce: If you find yourself in a hole, stop digging.

It's undeniable that systems, programs and practices for hiring, managing and retaining this segment of labor force have been dramatically underperforming for years. Also undeniable is the reality that countless work-around solutions that have offered short-term solutions are now being crushed under the weight of technology advancements accelerating in both variety and pace. With numerous emerging, game-changing technologies altering the landscape of not just businesses, but the private lives of billions of people, organizations cannot continue to dig deeper holes and expect to survive.

For many employers, this can only be achieved with a dramatic transformation of the tech workforce to a more appropriately skilled group of professionals who are capable of a level of agility, flexibility and aptitude not commonly associated with their predecessors. Today, the tech workforce is spread throughout the enterprise doing multidimensional jobs that are hard to categorize, price and manage. In this environment, architecting of people management is the last and most logical frontier.

Agile compensation and tech people architecture practices focus on how key human capital management elements plug into an overall optimized operational model, tuned to new technologies, shifting business strategy and organizational imperatives, culture and performance philosophies. This is exactly what has been missing in the HR functions at many employers, resulting in constant labor gaps, skills deficits and failure to execute consistently. ■



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## ABOUT THE AUTHOR

**David Foote (dfoote@footepartners.com)** is co-founder and chief analyst at Foote Partners, headquartered in Vero Beach, Fla.. A tech labor trends benchmark research pioneer and one of the most quoted industry authorities on global technology workforce evolution, he has spent more than two decades introducing data-driven benchmark research techniques and innovating industry practices for more accurate tech compensation benchmarking and tracking/forecasting of tech skills supply and demand. Foote built his reputation at Gartner and several Silicon Valley companies prior to co-founding Foote Partners in 1997. There he leads a senior team of analysts, consultants and researchers in publishing continuously updated quantitative and empirical tech labor research supported by research partnerships with 5,470 employers in the United States, Canada and Europe. Foote received his BA from Vassar College, MBA from Cornell University, and completed post-graduate studies at Stanford University's Graduate School of Management. He has been a WorldatWork member since 1995.

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## REFERENCE

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