TDWI RESEARCH

2010 TDWI Salary, Roles, and Responsibilities Report





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The Data Warehousing Institute™ (TDWI), a division of 1105 Media, Inc., is the premier provider of in-depth, high-quality education and research in the business intelligence (BI) and data warehousing industry. TDWI is dedicated to educating business and information technology professionals about the strategies, techniques, and tools required to successfully design, build, and maintain BI and data warehousing solutions. It also fosters the advancement of BI and data warehousing research and contributes to knowledge transfer and professional development of its Members. TDWI sponsors and promotes a worldwide Membership program, quarterly educational conferences, regional educational seminars, role-based training, onsite courses, certification, solution provider partnerships, an awards program for best practices, resourceful publications, an in-depth research program, and a comprehensive Web site (www.tdwi.org).

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PURPOSE, METHODS, AND DEMOGRAPHICS

Purpose

The purpose of this report is to gain a sense of the people and teams who built and maintained business intelligence (BI) and data warehousing (DW) solutions during the 2009 calendar year. This report uses the term "BI" to refer to both business intelligence and data warehousing initiatives, and the term "BI professionals" to the individuals who deliver these initiatives. Specifically, the report looks at individual compensation, roles, responsibilities, skills, and experience among BI professionals. It also provides profiles of the 10 most common BI roles, examining age, gender, education, job satisfaction, salary and bonus, certification, background, and other characteristics.

Methods

This report is based on a Web survey of 981 qualified DW and BI professionals in the U.S. and Canada, conducted in the fall of 2009. To ensure the greatest accuracy of our compensation data, results from worldwide BI professionals are not factored in. Qualified respondents are full-time IT professionals, consultants, systems integrators, and business sponsors or users. Responses from vendor representatives in sales, marketing, and development; professors and students; and part-time employees were not counted. Multi-choice answers, decimal truncation, and rounding account for totals that do not equal 100 percent.

Demographics

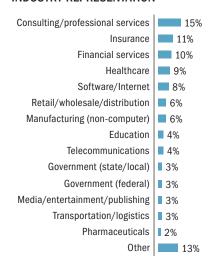
With 15 percent of the total, consulting and professional services retained its customary position atop industry representation in the TDWI salary survey. This percentage has remained steady for several years, indicating that the consulting industry plays a key role in the design, development, and implementation of BI/DW systems.

Financial services and insurance are also high on the list; these industries are major users of analytic technologies to assess risk and profitability. Other top users of BI/DW systems include organizations in healthcare, software and Internet, retail and wholesale, non-computer manufacturing, education, telecommunications, and government. Included in the "other" category (13 percent of respondents) are verticals such as hospitality and travel, advertising, real estate, construction, architecture, and engineering.

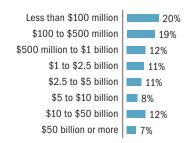
Smaller companies appear to be jumping on the BI/DW bandwagon. Nearly 20 percent of respondents work at organizations with less than \$100 million in annual revenues, up notably from recent years. These smaller organizations are taking advantage of the greater ease of implementation and usage that BI/DW technologies have gained recently, as well as the low-cost open source solutions that have become popular as budgets have shrunk and frozen during the recession of 2009.

Overall, the survey data illustrates that BI/DW penetration is strong across the revenue spectrum, from the *Fortune* 100 to small and midsize businesses.

INDUSTRY REPRESENTATION



ORGANIZATION REVENUES



WHICH BEST DESCRIBES YOUR ORGANIZATION'S BI IMPLEMENTATION?

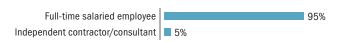
	2009	2008	2007
Beginner–We're getting serious about BI for the first time	20%	19%	15%
Intermediate—We have deployed a data warehouse and are looking to add more value	46%	52%	*
Advanced—We manage a relatively mature BI environment that delivers significant business value	34%	28%	21%

^{*} The 2007 survey used multiple definitions of "intermediate"

POSITIONS



WORK STATUS



PURCHASING AUTHORITY OF INDIVIDUALS



Demographics continued

The maturity of BI programs continues to advance. Some 34 percent of respondent organizations manage "advanced" BI environments that deliver significant business value. This figure reflects a steady progression over the past several years, up from 21 percent in 2007 and 28 percent in 2008.

Conversely, the percentage of "beginner" implementations is up as well, to 20 percent of this year's respondents. This corresponds with increased BI/DW usage at smaller organizations (as noted above) and suggests that BI is gaining popularity outside its core user base. Still, with only one-third of our respondents in an "advanced" stage, BI can be expected to continue maturing over the next decade.

Nearly 84 percent of our respondents are IT or BI professionals, while 11 percent are consultants or systems integrators, and 5 percent work on the business side. The vast majority (95 percent) are full-time salaried employees, while 5 percent make a living as freelance contractors. Nearly two-thirds have the responsibility of evaluating and recommending BI products and services.

BI maturity continues to progress, with 34 percent of organizations managing advanced BI environments.

Demographics continued

As a visit to any TDWI conference will suggest, the BI industry is dominated by men in their 30s and 40s. The gender breakdown has remained virtually unchanged in recent years, at 72 percent men and 28 percent women in 2009.

The ages 36 to 45 inclusive are the sweet spot for BI professionals, with 40 percent of our respondents in this group. Interestingly, the 2009 data shows a drop (from 29 percent to 24 percent) of BI practitioners aged 26 to 35—and an increase (from 24 percent to 28 percent) of those aged 46 to 55. This may indicate that hiring of younger individuals has slowed during the recession, while older professionals are staying put—or, BI specialists may simply be aging along with their profession. The lowest age bracket in the survey (25 or younger) again stayed down at 1%, which reminds us that most BI professionals work in another area (typically database administration or application development) before moving into BI.

In the U.S., the Midwest and Northeast show strong representations of BI/DW professionals, totaling 37 percent of our respondent population. On the other end, the Central Plains region amounts to just 3 percent of the pool. Canada is fairly well represented with 11 percent of the total, up from 9 percent two years ago.

Small BI/DW teams of five or fewer FTEs are in place at nearly half of organizations.

Lean and mean is the recipe for BI/DW success for many organizations. Nearly half (47 percent) of our respondent organizations maintain five or fewer full-time team members for BI/DW. This year's data shows a slight shift from larger teams to smaller, which may be the result of the layoffs and hiring freezes common during the current recession. Only 9 percent of organizations have BI teams with 50 or more members; given the bias of this survey toward smaller organizations (which tend to have small BI/DW teams), the number of large (50+) teams is probably more common than this survey indicates. About 37 percent outsource BI/DW functions.

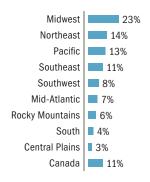
INDUSTRY PROFILE BY AGE

	25 or younger	26-35	36-45	46-55	56 or older
2009	1%	24%	40%	28%	8%
2008	1 1%	29%	39%	24%	7%
2007	2%	28%	40%	25%	5 %
2006	I 1%	27%	42%	23%	6 %

INDUSTRY PROFILE BY GENDER

	Men	Women	
2009	72%	28%	
2008	71%	29%	
2007	73%	27%	
2006	72%	28%	

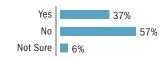
IN WHICH REGION ARE YOU LOCATED?



HOW MANY FULL-TIME STAFF MEMBERS ON YOUR TEAM ARE DEVOTED TO BI/DW TASKS?

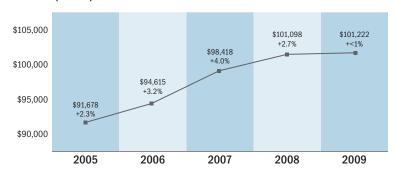
	2009	2008	2007
0-1	14%	10%	10%
2-3	17%	17%	16%
4-5	16%	15%	17%
6-10	19%	21%	20%
11-20	14%	16%	16%
21-50	11%	11%	11%
50+	9%	10%	10%

HAS YOUR COMPANY OUTSOURCED ANY BI/DW FUNCTIONS TO AN OFFSHORE OR ONSHORE SERVICE PROVIDER?

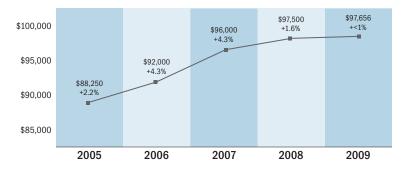


COMPENSATION

AVERAGE (MEAN) SALARIES



MEDIAN SALARIES



AVERAGE SALARIES-FULL-TIME EMPLOYEES VERSUS CONTRACTORS

	2009	2008	Respondents*
Full-time salaried employees	\$101,076	\$99,784	95%
Independent contractors	\$121,702	\$131,189	5%

^{* 2009} data

Salary Trends

The current economic recession has taken a toll on salary increases for BI/DW professionals. The average salary for 2009 is \$101,222, up a fraction of a percent from \$101,098 in 2008. This stagnation comes after a succession of steady increases that have averaged 3 percent over each of the past four years. And it comes one year after the average BI/DW salary crested above the \$100,000 mark for the first time in TDWI's annual salary survey.

One reason for the stasis in average salaries is the hit suffered by independent contractors and consultants, who comprise 5 percent of the survey population. The wages of these freelance professionals fell 7.2 percent, from \$131,189 to \$121,702. Full-time salaried employees (95 percent of the respondent pool) received an average 1.3 percent wage increase, from \$99,784 to \$101,076. While wages for independent contractors remained higher, they must also bear costs for health insurance, retirement benefits, and more.

The median salary also showed a slight incremental rise, from \$97,500 in 2008 to \$97,656 in 2009. While none of this is great news for BI/DW professionals, it is understandable in a difficult economic climate. It's also in line with the IT industry at large. For instance, the annual *Computerworld* salary survey published in November 2009 reported that salaries were up just 0.04 percent from 2008.

In the midst of recession, average salaries remained virtually unchanged at about \$101,200.

Salary Trends continued

The recession's grip on salary increases is clearly reflected in how TDWI respondents fared individually. A substantial 35 percent received no wage increase in 2009, up markedly from 8 percent the year before. And 8 percent saw their wages decrease—more than double the figures of past years.

On the other end, only 11 percent enjoyed increases of 6 percent or more—way down from 27 percent in 2008. Meanwhile, the percentage of BI/DW professionals with wage increases greater than their organization's standard fell to its lowest level in this TDWI survey series—19 percent.

Although this report's survey didn't collect data about BI professionals losing their jobs, another TDWI survey of 2009 (for the *Next Generation Data Warehouse Platform* report) revealed that 19 percent of BI professionals work on BI/DW teams where "some team members were laid off." This survey revealed related losses, such as reduced budgets (57 percent) and frozen hiring (41 percent).

Average salaries declined or remained unchanged for 43 percent of BI/DW professionals.

AVERAGE SALARY CHANGES

	2009	2008	2007	2006
Decrease	8%	3%	3%	2%
No change	35%	8%	8%	7%
1-3%	33%	38%	37%	41%
4-5%	12%	23%	22%	21%
6-10%	8%	17%	19%	20%
11-20%	3%	8%	7%	7%
21% or more	<1%	2%	4%	2%

DID YOUR 2009 BASE SALARY INCREASE BY MORE THAN THE ORGANIZATION'S STANDARD WAGE INCREASE?

	2009	2008	2007	2006
Yes	19%	36%	36%	35%
No	44%	39%	37%	39%
Stayed the same	30%	10%	12%	12%
Not sure	7%	15%	14%	14%

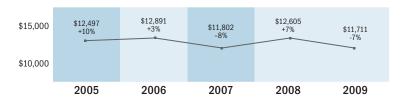
RESPONDENTS RECEIVING BONUSES

	Yes	No
2009	59%	41%
2008	71%	29%
2007	66%	34%
2006	66%	34%
2005	60%	40%

TYPES OF BONUSES



AVERAGE BONUSES



OPTIONS AND MOONLIGHTING

	2009	2008	2007	2006	2005
Receiving options	20%	20%	20%	24%	23%
Moonlighting	11%	10%	10%	9%	15%

Bonus Trends

Predictably, the percentage of BI/DW professionals receiving bonuses fell, from a record-high 71 percent in 2008 to 59 percent in 2009. In fact, the bonus percentage for 2009 was nearly the same as in 2005, when 60 percent of BI/DW professionals in TDWI's survey received extra compensation. As in past years, bonuses for individual and company performance were the most common.

The percentage of BI/DW professionals receiving bonuses fell to its lowest level in five years.

The average bonus fell more than 7 percent in 2009, from \$12,605 to \$11,711. Considering that the financial performance of many U.S. and Canadian for-profit firms slipped even further in 2009 compared to recent years, it is perhaps surprising that the drop-off was not more precipitous. This suggests that employers are striving to reward valued BI/ DW employees, which may be something of a silver lining in these challenging times.

The percentage of respondents receiving options and working at second jobs remained virtually unchanged from 2008. Those with options as part of their compensation were steady at 20 percent, down from 24 percent in 2006. The number of "moonlighters" ticked up slightly, to 11 percent-yet it remained lower than in 2005.

Salary Breakdowns

Business sponsors and BI directors remained atop the list of salary averages, each earning roughly \$17,000 more a year than the next-closest role of lead information architect. Business sponsors averaged nearly \$128,000 in salary; those that received bonuses (68 percent of this respondent slice) took home total compensation of \$151,402.

Although business sponsors and BI directors averaged more than \$127,000 a year, wages fell in 2009 for many of the top roles in the TDWI survey. Layoffs and other economic turbulence make it difficult to discern patterns in average salary fluctuation for roles such as data analyst/modeler, which saw a 10 percent increase to more than \$90,000. Anecdotal evidence seen by TDWI is that many firms have increased their analytic efforts or moved into more advanced analytics, which is one way to quickly understand change and respond to it during economic turmoil; this may have driven up demand for experienced data analysts.

The pharmaceuticals industry remained lucrative for BI/DW professionals. Though representing just 2 percent of our respondent pool, this vertical has been at or near the top of the average salary list for several years. In 2009, pharmaceuticals reported both the highest average salary (\$132,700) and the largest year-to-year increase (13 percent). Media and entertainment also appears to be a hot sector, with average salaries of more than \$115,000 and an increase of more than 12 percent.

Consulting and professional services practitioners reported a decrease of 1.3 percent in average salary, while those in financial services had a modest gain of 1.3 percent. Though both remain high on the list, they clearly have felt effects of the recession. It should be noted that some industries (government, transportation/logistics, telecommunications, pharmaceuticals, media) had statistically small sample sizes in this report's survey and as a result may be more likely to reflect fluctuations.

TOP SALARIES AND BONUSES BY KEY ROLES

Role	2009	2008	2007	Change*	Receiving Bonus**	Average Bonus**
Business sponsor	\$127,945	\$125,412	\$119,315	+2.0%	68%	\$23,457
BI director	\$127,394	\$131,288	\$125,907	-2.9%	67%	\$19,048
Lead information architect	\$110,842	\$113,563	\$107,591	-2.4%	70%	\$12,958
BI program manager	\$109,644	\$110,483	\$103,890	-<1%	57%	\$12,873
BI project manager	\$102,597	\$97,756	\$98,566	+5.0%	57%	\$8,950
Technical architect/ systems analyst	\$96,858	\$99,699	\$101,618	-2.9%	54%	\$7,863
Decision support (BI) architect/developer	\$92,109	\$90,344	\$85,768	+2.0%	53%	\$8,396
Data analyst/modeler	\$90,503	\$82,275	\$82,614	+10.0%	47%	\$10,109
Data acquisition (ETL) architect/developer	\$86,958	\$90,991	\$88,747	-4.4%	47%	\$7,906
Business requirements analyst	\$84,673	\$84,788	\$81,112	-<1%	54%	\$7,357

^{*} Y-Y 2008-09

AVERAGE SALARY BY INDUSTRY

	2009	2008	2007	Change*	Respondents**
Consulting/ professional services	\$110,237	\$111,661	\$110,170	-1.3%	15%
Insurance	\$94,346	\$89,846	\$88,402	+5.0%	11%
Financial services	\$106,499	\$105,131	\$102,392	+1.3%	10%
Healthcare	\$100,177	\$97,747	\$98,396	+2.4%	9%
Software/Internet	\$101,979	\$107,189	\$99,612	-4.9%	8%
Manufacturing (non-computer)	\$102,831	\$100,353	\$95,623	+2.5%	6%
Retail/wholesale/ distribution	\$95,340	\$92,458	\$96,730	+3.1%	6%
Telecommunications	\$92,419	\$97,881	\$92,391	+5.6%	4%
Education	\$87,582	\$85,326	\$85,140	+2.6%	4%
Media/entertainment/ publishing	\$115,513	\$102,841	\$104,885	+12.3%	3%
Government (federal)	\$103,300	\$105,345	\$108,847	-1.9%	3%
Government (state/local)	\$82,316	\$82,274	\$81,987	+<1%	3%
Transportation/logistics	\$89,352	\$87,009	\$89,420	-2.7%	3%
Pharmaceuticals	\$132,700	\$117,324	\$103,675	+13.1%	2%

^{*} Y-Y 2008-09

^{** 2009} data

^{** 2009} data. Column does not total 100% because industries with low representation were excluded.

AVERAGE SALARY BY COMPANY REVENUE

	2009	2008	2007	Respondents*
Less than \$100 million	\$102,151	\$97,702	\$102,757	20%
\$100-\$500 million	\$98,034	\$96,635	\$93,932	19%
\$500 million-\$1 billion	\$97,521	\$97,476	\$93,660	12%
\$1-\$5 billion	\$102,859	\$100,853	\$96,589	22%
\$5-\$10 billion	\$104,526	\$103,410	\$102,142	8%
\$10-\$50 billion	\$105,985	\$106,619	\$106,992	12%
\$50 billion or more	\$119,723	\$111,818	\$111,799	7%

^{* 2009} data

AVERAGE SALARY BY REGION

	2009	2008	2007	Respondents*
Pacific	\$111,434	\$110,795	\$104,980	13%
Mid-Atlantic	\$109,086	\$105,787	\$105,340	7%
Northeast	\$109,081	\$108,035	\$104,251	14%
Southwest	\$105,313	\$104,310	\$101,193	8%
Southeast	\$100,954	\$99,655	\$96,374	11%
Rocky Mountains	\$98,002	\$100,951	\$99,839	6%
Midwest	\$96,722	\$95,735	\$93,228	23%
South	\$96,655	\$98,706	\$90,760	4%
Central Plains	\$95,076	\$87,142	\$85,036	3%
Canada	\$87,094	\$89,278	\$89,188	11%

^{* 2009} data

Salary Breakdowns continued

The largest companies tend to be the most generous with compensation. Continuing a pattern from recent years, organizations with \$50 billion or more in annual revenues doled out the highest average salaries in 2009, at \$119,723. On the low end, average salaries were 19 percent less—\$97,521—at companies with revenues of \$500 million to \$1 billion. Professionals at the smallest companies (\$100 million or less in revenues) reported nearly a 5 percent pay jump, to \$102,151.

In North America, the Pacific states continued to be the most lucrative region for BI/DW employment. Average salaries in the Pacific region were reported at \$111,434 for 2009, about 15 percent higher than the lowest area in the U.S.—\$95,076 in the Central Plains states. Declines were reported in the Rocky Mountains and the South, though it should be noted that these samples sizes were relatively small. In Canada—11 percent of our respondent pool—average salaries fell from \$89,278 in 2008 to \$87,094 in 2009.

Large companies with revenues of \$50 billion or more remain the best-paying employers for BI/DW.

Salary by Gender, Age, and Experience

Salaries for female BI/DW professionals appear to be taking a hit in the recession. The average salary for women fell 1 percent, from \$94,321 in 2008 to \$93,052 in 2009. Statistically speaking, women's salaries are flat for 2009 over 2008. This lack of progress comes a year after average salaries for females jumped nearly 5 percent, higher than the increases received by men in 2008.

Overall, males continue to out-earn their female counterparts. The gender gap for 2009 is \$11,271—more than double the \$5,471 differential seen in the 2005 survey. Even so, men's salaries were up by less than 1 percent (to \$104,323), which statistically speaking is flat, the same as women's salaries for 2009.

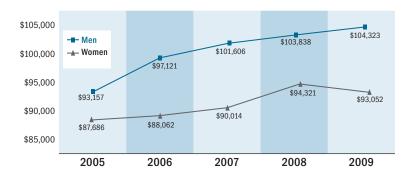
Women saw their average bonuses plummet—down a sizable 21 percent, from \$12,505 in 2008 to \$9,874 in 2009. On the bright side for women, a greater percentage of females than males received bonuses—62 percent compared to 57 percent.

Middle-aged BI/DW professionals—traditionally the highest earners in the TDWI survey series—suffered nearly a 4 percent loss in average salaries in 2009. Wages dropped to \$105,223 for this 46-to-55 demographic, likely a result of layoffs and new employment at lower wages. Ironically, this age group reported the highest earnings for 2008, though it is now second below the older range of 56-65.

Meanwhile, the income gap between junior and senior employees grew to nearly 80 percent—a person 25 or younger can expect to earn \$60,206 a year, compared to \$108,008 for someone 56 or older. Overall, the data shows that BI/DW professionals can expect their earning power to steadily increase with age.

Experience in BI/DW tends to be reflected in paychecks. Professionals with 10 or more years of BI/DW experience command average salaries approaching \$114,000—38 percent higher than those with one year under their belts. However, in line with our findings on salary by age, those with 10 or more years in the industry saw their wages decline 33 percent in 2009, from \$117,638 in 2008. Even so, in the big picture of a BI/DW career, experience and age both tend to garner higher salaries over time.

AVERAGE SALARY BY GENDER



AVERAGE BONUS AND BONUS DISTRIBUTION BY GENDER

	2009	2008	2007	2006	2005	Receiving Bonus*
Men	\$12,471	\$12,644	\$12,545	\$13,954	\$13,175	57%
Women	\$9,874	\$12,505	\$9,628	\$9,982	\$10,640	62%

^{* 2009} data

AVERAGE SALARY BY AGE

	2009	2008	2007	2006	2005	Respondents*
25 or younger	\$60,206	\$62,297	\$66,159	\$53,289	\$61,093	<1%
26-35	\$89,148	\$90,291	\$87,729	\$86,548	\$82,572	24%
36-45	\$104,548	\$104,474	\$103,420	\$96,739	\$94,283	40%
46-55	\$105,223	\$109,055	\$104,612	\$101,400	\$95,600	28%
56-65	\$108,008	\$106,856	\$100,084	\$100,344	\$98,213	8%

^{* 2009} data

AVERAGE SALARY BY BI/DW EXPERIENCE

	2009	2008	2007	2006	2005	Respondents*
1 year	\$82,170	\$80,570	\$85,538	\$82,548	\$83,443	4%
2-3 years	\$90,307	\$88,385	\$86,984	\$85,176	\$81,346	14%
4-6 years	\$92,224	\$95,172	\$91,708	\$89,960	\$87,564	25%
7-9 years	\$101,753	\$98,734	\$97,149	\$101,019	\$93,198	17%
10 or more years	\$113,784	\$117,638	\$114,056	\$105,988	\$104,735	40%

^{* 2009} data

AVERAGE SALARY BY YEARS AT CURRENT COMPANY

	2009	2008	2007	2006	2005	Respondents*
0-1 years	\$102,176	\$99,505	\$98,168	\$95,308	\$93,670	15%
2-3 years	\$102,073	\$98,338	\$97,118	\$90,814	\$90,361	24%
4-5 years	\$97,251	\$102,332	\$98,848	\$94,043	\$89,509	15%
6-10 years	\$101,092	\$98,991	\$96,614	\$93,040	\$91,925	24%
11-20 years	\$101,503	\$98,856	\$103,545	\$96,958	\$94,152	15%
20 or more years	\$104,380	\$103,451	\$103,981	\$104,430	\$94,620	7%

^{* 2009} data

AVERAGE SALARY BY CERTIFICATION

	2009	2008	2007	2006	2005	Respondents*
No certifications	\$99,396	\$98,361	\$95,741	\$93,687	\$90,769	52%
1 certification	\$98,604	\$105,141	\$100,141	\$96,320	\$91,449	19%
2 certifications	\$103,547	\$104,526	\$105,122	\$95,437	\$95,079	13%
3 certifications	\$108,445	\$103,033	\$101,523	\$98,102	\$93,615	7%
4 or more	\$109,293	\$104,777	\$97,816	\$92,702	\$90,145	9%

^{* 2009} data

AVERAGE SALARY BY PURCHASING AUTHORITY

	2009	2008	2007	2006	2005	Respondents*
Determine need	\$98,750	\$91,790	\$94,018	\$89,872	\$89,787	11%
Evaluate/ recommend	\$103,608	\$101,389	\$100,007	\$96,313	\$92,641	64%
Final purchasing authority	\$128,140	\$131,976	\$129,443	\$117,719	\$114,553	5%
No purchasing influence	\$86,796	\$85,743	\$85,278	\$83,119	\$79,078	19%

^{* 2009} data

AVERAGE SALARY BY BI/DW MATURITY

	2009	2008	2007	2006	2005
Beginner—We're getting serious about BI for the first time	\$93,861	\$95,478	\$96,576	\$89,961	\$87,061
Intermediate—We have deployed a data warehouse and are looking to add more value	\$100,198	\$99,459	*	*	*
Advanced—We manage a relatively mature BI environment that delivers significant business value	\$106,769	\$103,287	\$101,753	\$95,589	\$91,047

^{* 2005-2007} surveys used multiple definitions of "intermediate"

Salary by Gender, Age, and Experience continued

Longevity at a single employer doesn't necessarily translate into higher wages. For instance, BI/DW professionals with three years or less at a single company out-earned those with more longevity, except for individuals who had logged more than 20 years. This suggests that employers are willing to invest to bring the right talent on board, even if they don't invest in retaining established talent.

The relatively high wages for those with three years or less at the same employer might appear surprising in view of the economic climate. However, it should be remembered that in most cases, those salaries were established before the recession took hold.

Professional certifications usually pay off with higher salaries. Our 2009 survey shows a near-linear progression, from an average salary of \$99,396 for those with no certifications to a high of \$109,293 for people with four or more certifications. Securing two or three certifications is a sound career move and a likely ticket to an income boost.

Mature BI/DW environments typically mean higher salaries for those who manage them.

The compensation gap is large when measured by purchasing authority. Managers in BI/DW with purchasing authority earn an average of \$41,000 more than those lower-level individuals with no influence on purchasing—\$128,140 to \$86,796. Nearly two-thirds of our respondents are tasked with evaluating and recommending products and earn \$103,608 on average.

Mature BI/DW environments typically mean higher salaries for those who manage them. For 2009, average salaries of \$106,769 went to BI/DW professionals working with "advanced" implementations—about \$13,000 more than salaries for individuals in "beginner" environments. This gap has remained fairly consistent over the years, and indicates that organizations value advanced BI systems that improve their competitive positions.

Job Satisfaction

The poor economic climate appears to have had little effect on job satisfaction. Forty-nine percent of respondents rated their job satisfaction as "high" or "very high," down just slightly from 51 percent in 2008. Over the past five years, TDWl's salary survey has found relatively high job satisfaction and low incidence of dissatisfaction. For 2009, just 10 percent of survey respondents rated job satisfaction as "low" or "very low."

Despite the negligible average salary increase for 2009, more than half (53 percent) of BI/DW professionals feel they are fairly compensated. In fact, this figure is substantially higher than the 41 percent who in 2005 felt their wages were fair. The relative satisfaction for 2009 probably reflects widespread recognition of the economic troubles that have beset many employers.

With the many thousands of jobs lost during the recession, BI/DW professionals are understandably feeling less secure in their jobs. Twenty-five percent of our respondents report feeling "very secure" in their jobs, down markedly from 37 percent in 2007. Correspondingly, those who feel "not very secure" rose to 18 percent in 2009, up from 11 percent two years earlier.

Fewer BI/DW professionals are job-hopping in the recession. Only 10 percent of our respondents joined a new company in 2009, down from 16 percent in 2006. Unsurprisingly, layoffs were a factor for the 98 respondents who did take new jobs in 2009. Of those individuals, a whopping 26 percent cited job loss as the reason they took a new position, up substantially from 11 percent in 2007. This is a large migration of BI workers, considering that the national unemployment rate in the U.S. hovered at 10 percent during 2009. The high number of layoffs is shocking, yet the fact that most of the people found new jobs is reassuring. A better opportunity remained the key reason for new employment, cited by 41 percent of respondents.

HOW WOULD YOU RATE YOUR SATISFACTION IN YOUR CURRENT POSITION?

	2009	2008	2007	2006	2005
Very high	11%	11%	12%	10%	8%
High	38%	40%	40%	39%	35%
Moderate	42%	39%	39%	41%	45%
Low	7%	7%	8%	7%	10%
Very low	3%	2%	1%	2%	3%

ARE YOU FAIRLY COMPENSATED?

	2009	2008	2007	2006	2005
Yes	53%	53%	51%	50%	41%
No	34%	32%	34%	32%	39%
Not sure	14%	15%	16%	18%	20%

HOW SECURE DO YOU FEEL IN YOUR JOB?

	2009	2008	2007
Very secure	25%	34%	37%
Secure	57%	54%	53%
Not very secure	18%	12%	11%

DID YOU TAKE A POSITION AT A NEW COMPANY IN THE PAST 12 MONTHS?

	2009	2008	2007	2006
Yes	10%	12%	16%	16%
No	90%	88%	84%	83%

WHY DID YOU LEAVE YOUR PREVIOUS POSITION?

	2009	2008	2007
Accepted better opportunity	41%	57%	64%
Was laid off	26%	14%	11%
Job was outsourced	5%	1%	2%
Personal reasons	5%	10%	7%
To work for self	3%	2%	n/a
Other	20%	16%	15%

ARE YOU LOOKING FOR A NEW JOB OUTSIDE YOUR COMPANY?

	2009	2008	2007	2006
Yes, definitely	14%	13%	15%	14%
Somewhat, but not seriously	42%	43%	45%	42%
No	43%	44%	40%	44%

WHY DO YOU WANT TO LEAVE YOUR CURRENT POSITION?

	2009	2008
Seeking better opportunity	63%	73%
Change jobs before I'm laid off	18%	7%
Personal reasons	6%	7%
To work for self	4%	4%
Other	9%	9%

BESIDES SALARY, WHAT ARE THE TOP FIVE CONSIDERATIONS FOR A NEW JOB?

	2009	2008
Location	75%	68%
Challenging work	67%	73%
Chance to develop new skills	62%	60%
Work schedule/hours	48%	48%
Your manager	44%	45%
Company strategy	42%	42%
Opportunity for promotion	42%	43%
Commute time	35%	38%
Your colleagues	32%	29%
Executive team	22%	22%
Opportunity to <i>not</i> travel	14%	16%
Opportunity to travel	9%	8%

Job Satisfaction continued

Meanwhile, the percentage of people looking for new jobs remained relatively steady, at 14 percent in 2009. But the data suggests anxiety over potential layoffs—of the 135 people looking for a new job in 2009, 18 percent are concerned they will be laid off. That's up from 7 percent a year earlier. When looking for a new job, respondents placed location, opportunities for challenging work, and the chance to develop new skills high on the list.

Geographic location and opportunities for challenging work are top considerations when looking for a new job.

ROLES AND RESPONSIBILITIES

Primary Roles

The role of BI director tops our list as the most common primary role played by survey respondents. Nearly 12 percent identified themselves as BI directors, individuals who typically coordinate multiple BI/DW projects and serve to bridge the gap between business and IT. The emergence of the BI director management role in recent years reflects the increasing emphasis that organizations place on aligning BI resources and efforts with business objectives. Program managers, who frequently work under BI directors to coordinate execution, weighed in with more than 10 percent of our respondent pool.

Key technical roles of BI and data integration architects and developers were strongly reflected in the survey. More than 11 percent of respondents identified BI architect or developer as their primary role; 9 percent called themselves data acquisition architects or developers. This corresponds with the trend toward continuing maturation of BI/DW environments, with BI and data integration specialists executing a good deal of the nuts-and-bolts work required.

Secondary Roles

Many BI professionals are tasked with multiple secondary roles, reflecting the cross-training and skills acquisition inherent in many BI initiatives. Atop the 2009 list was data analyst or modeler, a role that can straddle both business and IT and which was claimed by 43 percent of respondents. Other leading secondary roles include subject matter expert (35 percent), technical architect or systems analyst (33 percent), and BI architect or developer (33 percent).

One-third of our respondents fulfill three secondary roles. The average for 2009 is 3.23 secondary roles, down slightly but still in line with recent years. This reminds us that BI and DW are multi-skill disciplines, where team members commonly wear multiple hats.

The remainder of this report dives into the details of the top 10 primary roles, as determined by the survey, in the order listed in the table "Primary and Secondary Roles."

PRIMARY AND SECONDARY ROLES

	Primary Role	Secondary Role
BI director	12%	15%
Decision support (BI) architect or developer	11%	33%
BI program manager	10%	19%
Data acquisition (ETL) architect or developer	9%	31%
Lead information architect	9%	27%
Technical architect or systems analyst	9%	33%
BI project manager	8%	28%
Data analyst or modeler	8%	43%
Business requirements analyst	5%	31%
Business sponsor or driver	4%	10%
Subject matter expert	4%	35%
Database administrator	3%	11%
BI support and service	2%	17%
Data quality analyst	2%	17%
Data warehouse administrator	2%	16%
Business user	1%	10%
Data administrator or metadata manager	1%	11%
Data owner/steward	1%	9%

NUMBER OF SECONDARY ROLES

	2009	2008	2007	2006
0 roles	3%	3%	3%	2%
1 role	10%	13%	12%	9%
2 roles	25%	22%	23%	25%
3 roles	33%	30%	30%	31%
4 roles	12%	13%	14%	14%
5 roles	6%	8%	7%	9%
6 roles	4%	4%	3%	3%
7+ roles	7%	8%	7%	7%
Average number of roles	3.23	3.37	3.27	3.27

BI Director

GENERAL DESCRIPTION

- Owns or directly shapes the BI strategy, architecture, and budget
- Oversees program and project managers, architects, and specialists
- · Serves as liaison between the business and the BI team
- Develops marketing and communications programs for the BI program
- · Communicates benefits of the BI environment to executives and users

KEY RESPONSIBILITIES

- · Develops the vision and business case for the BI program
- · Sells the BI program to executives and other managers
- Works with architects to create a high-level enterprise architecture to support a growing portfolio of BI applications
- Hires and oversees BI program and project managers and architects
- Interfaces with business sponsors and drivers and steering committees
- Meets business criteria for successful BI implementations

KEY SKILLS

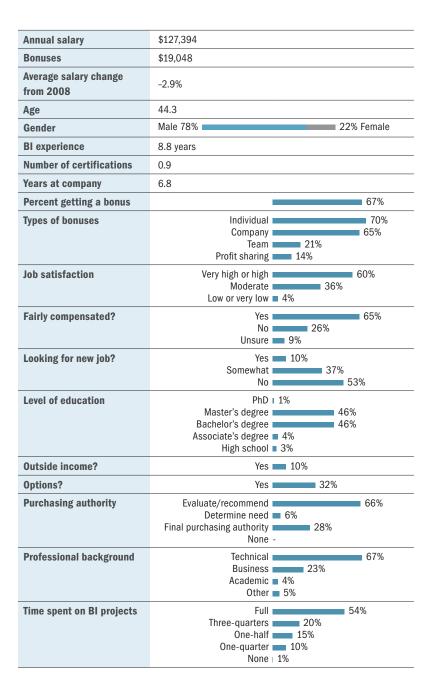
- Sales
- · Marketing
- · Communications
- · Leadership
- · Delegation
- · Knowledge and design of data warehouses
- · Flexibility, diplomacy, and problem-solving

KEY DELIVERABLES

- · BI funding
- · BI strategy
- · BI budget
- · BI architecture
- · BI team

COMMON SECONDARY ROLES

BI program manager 49%, subject matter expert 34%, BI project manager 34%, business sponsor or driver 23%



Decision Support (BI) Architect/Developer

GENERAL DESCRIPTION

- Works with end users and business analysts to ensure tight fit between BI environment and business requirements
- Designs and manages the BI tools and applications environment
- Configures BI tools, develops semantic layer and metadata, and creates reports and report definitions
- Creates and delivers end-user training and documentation and provides second-line support to power users who develop reports on behalf of their departmental colleagues

KEY RESPONSIBILITIES

- Installs, configures, deploys, and tunes BI tools and analytic servers
- Troubleshoots BI tool problems and tunes for performance
- Develops multidimensional semantic layer and BI query objects for end users
- · Creates reports and report templates
- · Helps business users select appropriate BI tools
- · Develops and manages BI training, documentation, and help desk capabilities

KEY SKILLS

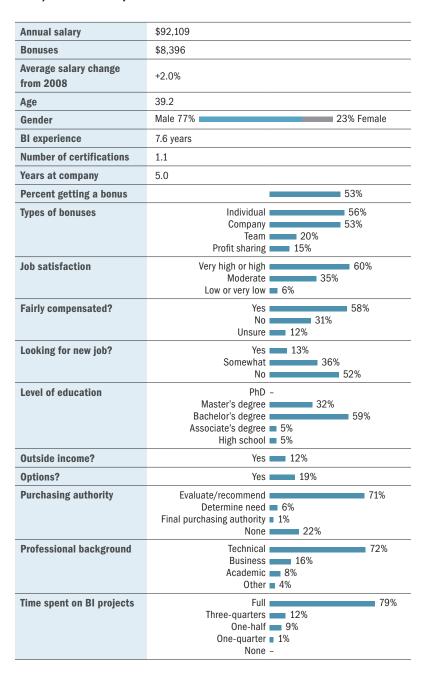
- Translation of business questions and requirements into reports, views, and BI query objects
- Knowledge of BI tool architectures, functions, and features
- Understanding of SQL and relational and multidimensional designs
- · Strong problem-solving and metadata skills
- · Understands BI tool architecture, functions, and features
- · Customizes BI tools to meet user needs

KEY DELIVERABLES

- Standardizes use of BI tools and semantic layers throughout the organization
- Provides repository of best practices on how to install, configure, and use BI tools for more productivity
- · Reports, templates, and analytical views
- · Training, documentation, and help desk support for BI

COMMON SECONDARY ROLES

Data analyst/data modeler 52%, data acquisition (ETL) architect/developer 46%, technical architect/systems analyst 36%, BI support/service 33%



BI Program Manager

GENERAL DESCRIPTION

- Oversees the management and direction of multiple data warehousing projects
- · Aligns data warehousing projects with business strategy
- Works with BI director as a liaison between business sponsors and executives
- · Works with BI director to secure and maintain funding
- · Manages BI stewards and steering committees

KEY RESPONSIBILITIES

- · Staffs project teams
- Facilitates the prioritization of projects and requirements among competing business interests
- Coordinates with various business and technical groups whose support is needed to build or deploy data warehouses
- Establishes standards for technology and business processes
- Coordinates and aligns multiple data warehousing projects
- · Measures results

KEY SKILLS

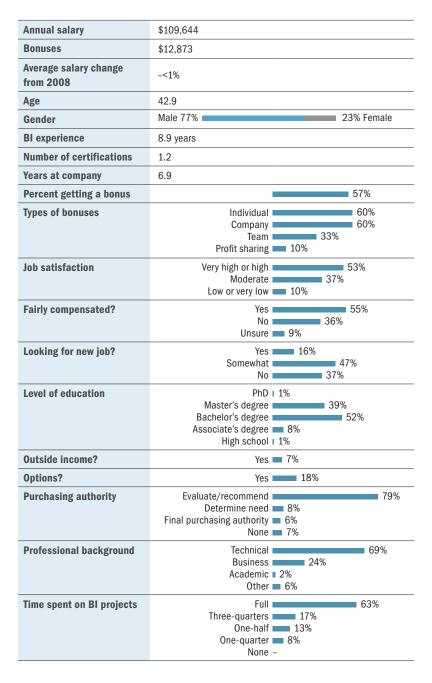
- · Knowledge of business
- · Prior data warehousing experience
- · Communications and marketing
- · Managing multiple project teams
- · Managing multiple, complex enterprise projects
- · Strategic and financial planning

KEY DELIVERABLES

- · Strategic plans
- · Steering committee priorities and plans
- · Funding requests
- · Corporate budgets
- · Return on investment reports

COMMON SECONDARY ROLES

BI project manager 49%, business requirements analyst 36%, subject matter expert 31%, lead information architect 23%



Data Acquisition (ETL) Architect/Developer

GENERAL DESCRIPTION

Responsible for the scripts required to extract, transform, clean, and move data and metadata so they can be loaded into a data warehouse, data mart, or operational data store

KEY RESPONSIBILITIES

- Work with business requirements analyst to identify and understand source data systems
- · Map source system data to data warehouse models
- · Develop and test ETL processes
- Define and capture metadata and rules associated with ETL processes
- Adapt ETL processes to accommodate changes in source systems and new business user requirements

KEY SKILLS

- Understanding of source and target data structures, ETL processes, and products
- Knowledge of 3GL/4GL programming languages and ETL products
- · Strong problem-solving and metadata skills

KEY DELIVERABLES

- · Completes mapping and transformation programs
- · Schedules extraction and load processes
- Documentation and maintenance of ETL metadata in metadata repository
- · Database loadable files

COMMON SECONDARY ROLES

Data analyst/data modeler 44%, technical architect/ systems analyst 40%, decision support (BI tools) architect/ developer 34%, data warehouse administrator 28%

Annual salary	\$86,958
Bonuses	\$7,906
Average salary change from 2008	-4.4%
Age	38.5
Gender	Male 81% 19% Female
BI experience	6.8 years
Number of certifications	1.3
Years at company	5.2
Percent getting a bonus	47%
Types of bonuses	Individual 32% Company Team 9% Profit sharing 20%
Job satisfaction	Very high or high 37% Moderate 48% Low or very low 15%
Fairly compensated?	Yes 42% No 40% Unsure 18%
Looking for new job?	Yes 15% Somewhat 55% No 30%
Level of education	PhD I 1% Master's degree 32% Bachelor's degree 57% Associate's degree 9% High school I 1%
Outside income?	Yes ■ 6%
Options?	Yes 16%
Purchasing authority	Evaluate/recommend 43% Determine need 18% Final purchasing authority - None 39%
Professional background	Technical 80% Business 4% Academic 10% Other 6%
Time spent on BI projects	Full 77% Three-quarters 10% One-half 8% One-quarter 5% None -

Lead Information Architect

GENERAL DESCRIPTION

- Coordinates the work of technical, data, ETL, and BI architects
- Oversees the design of the data and technical architecture for the data warehouse
- Oversees the development of logical and physical data models, ETL scripts, metadata definitions and models, queries and reports, schedules, work processes, and maintenance procedures
- · Ensures proper backup and recovery processes
- Supervises selection of hardware, storage, and software products

KEY RESPONSIBILITIES

- Creates a robust, sustainable architecture that supports requirements and provides for expansion given budgetary constraints and availability of data and skilled resources
- Evaluates and selects various data warehousing tools and components
- Coordinates multiple architects responsible for development, integration, administration, and evolution of the data warehouse

KEY SKILLS

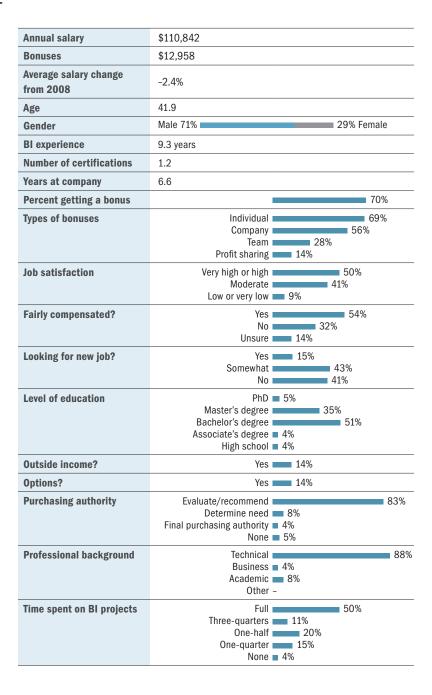
- · Prior experience building data warehouses
- Data modeling, database administration, and performance tuning
- · SQL, ETL, OLAP
- · Operating platforms
- · Metadata management
- · Use-case analysis
- · Conceptual and analytic skills
- · Knowledge of business domain
- · Ability to balance theory and practical reality

KEY DELIVERABLES

- · Architecture and strategy documentation
- · Use-case analysis report
- · Capacity planning analysis
- · Job development guidelines
- · Administrative management plan

COMMON SECONDARY ROLES

Data analyst/data modeler 64%, data acquisition (ETL) architect/developer 46%, technical architect/ systems analyst 44%, decision support (BI) architect/developer 35%



Technical Architect/Systems Analyst

GENERAL DESCRIPTION

- Defines and documents the technical architecture of the data warehouse, including the physical components and their functionality
- Evaluates, selects, tests, and optimizes hardware and software products

KEY RESPONSIBILITIES

- · Assesses current technical architecture
- · Estimates system capacity to meet near- and long-term processing requirements
- Writes specifications for client machines, application servers, database servers, and networks

KEY SKILLS

- · Technical design
- Understanding of capabilities of vendor infrastructure products, including SMP (symmetric multiprocessing) and MPP (massively parallel processing) systems
- Knowledge of data warehousing architectural approaches
- · Conceptual and analytical skills

KEY DELIVERABLES

- · Capacity planning estimates
- · Technical architecture documents
- · Hardware and software product recommendations
- · Cost estimates for technical components
- · Regular performance and capacity planning audits

COMMON SECONDARY ROLES

Data analyst/data modeler 44%, decision support (BI) architect/developer 40%, subject matter expert 40%, data acquisition (ETL) architect/developer 39%

Annual salary	\$96,858
Bonuses	\$7,863
Average salary change from 2008	-2.9%
Age	42.8
Gender	Male 82% 18% Female
BI experience	7.2 years
Number of certifications	1.4
Years at company	7.9
Percent getting a bonus	54%
Types of bonuses	Individual 70% Company 47% Team 26% Profit sharing 13%
Job satisfaction	Very high or high 44% Moderate 51% Low or very low ■ 6%
Fairly compensated?	Yes 56% No 28% Unsure 16%
Looking for new job?	Yes 11% Somewhat 40% No 48%
Level of education	PhD 22% Master's degree 26% Bachelor's degree 9% Associate's degree 9% High school 7%
Outside income?	Yes 13%
Options?	Yes 15%
Purchasing authority	Evaluate/recommend 74% Determine need 13% Final purchasing authority – None 14%
Professional background	Technical 84% Business 6% Academic 6% Other 5%
Time spent on BI projects	Full 39% Three-quarters 11% One-half 14% One-quarter 25% None 10%

BI Project Manager

GENERAL DESCRIPTION

- · Manages a single data warehousing project
- · Develops budgets and plans
- · Secures resources and personnel
- · Manages a team of developers and contractors
- · Prioritizes requirements, schedules tasks, communicates progress

KEY RESPONSIBILITIES

- · Develops plans and schedules
- · Scopes project; manages scope changes
- · Prioritizes requirements; manages expectations
- · Establishes budgets
- · Hires and manages personnel
- · Communicates progress
- · Coordinates training
- · Measures ROI

KEY SKILLS

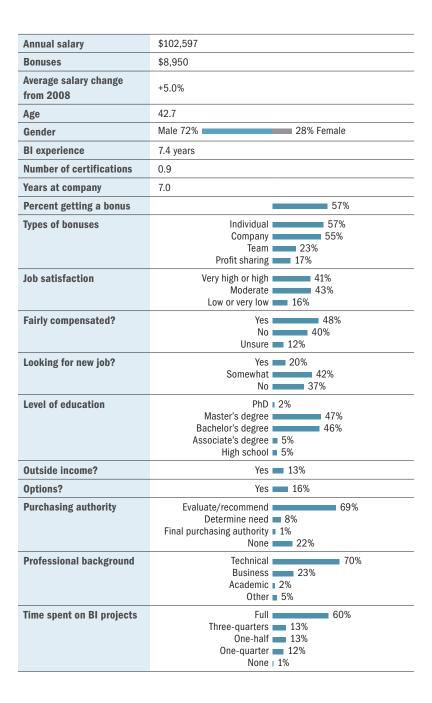
- · Project management
- · Communication
- · Leadership
- · Decision making
- · Delegation
- · Knowledge and design of data warehouses
- · Flexibility, diplomacy, and problem-solving

KEY DELIVERABLES

- · Project and resource plans
- · Funding requests
- · Success metrics
- · Training plans
- · Documentation scoping
- · Status reports
- · Acceptance criteria

COMMON SECONDARY ROLES

Business requirements analyst 51%, subject matter expert 36%, data analyst/data modeler 33%, BI support and service 25%



Data Analyst/Modeler

GENERAL DESCRIPTION

Develops, manages, and updates data models, including physical and logical models of the data warehouse, data mart, and staging area, and sometimes the operational data store and source systems

KEY RESPONSIBILITIES

- Interviews business users to obtain data requirements for new analytic applications
- Designs conceptual and logical models for the data warehouse or data mart
- Communicates physical database designs to database administrator
- Evolves models to meet new and changing business requirements
- Develops process for capturing and maintaining metadata from all data warehousing components

KEY SKILLS

- · Strong conceptual, communications, and technical skills
- Ability to translate business needs into technical solutions
- Strong relational and dimensional data modeling and database design skills

KEY DELIVERABLES

- · Source system recommendations
- Model management standards
- · Logical and physical data models
- · Meta model for metadata repository

COMMON SECONDARY ROLES

Subject matter expert 35%, data quality analyst 30%, business requirements analyst 27%, lead information architect 26%

Annual salary	\$90,503
Bonuses	\$10,109
Average salary change from 2008	+10.0%
Age	44.3
Gender	Male 58% 42% Female
BI experience	6.7 years
Number of certifications	0.9
Years at company	5.9
Percent getting a bonus	47%
Types of bonuses	Individual 66% Company 53% Team 25% Profit sharing 33%
Job satisfaction	Very high or high 44% Moderate 48% Low or very low 8%
Fairly compensated?	Yes 44% No 42% Unsure 14%
Looking for new job?	Yes 16% Somewhat 47% No 38%
Level of education	PhD I 1% Master's degree Bachelor's degree Associate's degree 11% High school 6%
Outside income?	Yes 12%
Options?	Yes 31%
Purchasing authority	Evaluate/recommend 48% Determine need 12% Final purchasing authority - None 40%
Professional background	Technical 25% Business 25% Academic 6% Other 8%
Time spent on BI projects	Full 45% Three-quarters 14% One-half 16% One-quarter 17% None 8%

Business Requirements Analyst

GENERAL DESCRIPTION

- Serves as liaison between end users and data warehousing project team
- · Coordinates business requirements for data

KEY RESPONSIBILITIES

- Interviews end users to determine requirements for data, reports, analyses, metadata, training, service levels, data quality, and performance
- Works with architects to translate requirements into technical specifications
- · Helps identify and assess potential data sources
- · Recommends appropriate scope of requirements
- Validates that data warehouse meets requirements and service-level agreements
- · Coordinates prototype reviews

KEY SKILLS

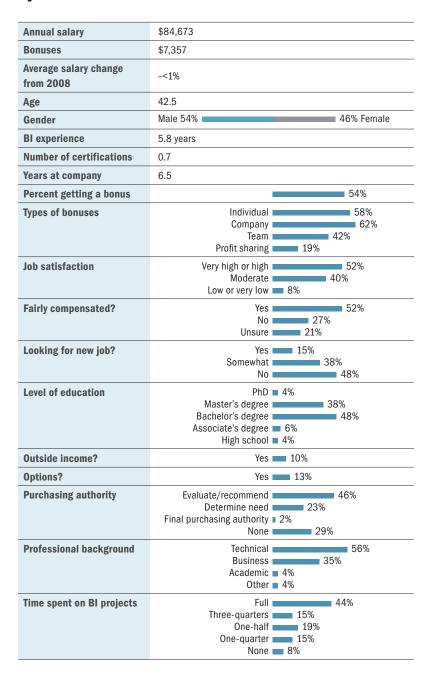
- Experience using data warehouse or analytical tools for business purposes
- · Strong interpersonal and communications skills
- Ability to translate business requirements into technical requirements
- · Knowledge of key data warehousing processes
- · Respected within the business community

KEY DELIVERABLES

- · Business requirements documentation
- · Business priorities
- · Prototype feedback

COMMON SECONDARY ROLES

Data analyst or modeler 54%, subject matter expert 38%, data quality analyst 31%, BI project manager 17%



Business Sponsor

GENERAL DESCRIPTION

- Works closely (and often overlaps) with a BI director or equivalent person
- Sets BI business strategy and budget, contributes to technical details associated with these
- Serves as liaison between business and BI team, giving shameless priority to the former
- · Usually has a full-time business management position, and sponsors BI part time

KEY RESPONSIBILITIES

- · Contributes substantially to general IT/business alignment
- Keeps BI (and maybe other IT areas) focused on business requirements and goals
- · Develops business requirements
- · Provides budget or assists in acquiring necessary funding
- · Establishes business ownership of BI systems and data
- Serves on data- or BI-oriented committees, often for stewardship and governance
- Participates in (and often controls) tool and platform acquisition decisions

KEY SKILLS

- · Domain expertise in one or more business areas
- Knowledge of how BI and its data impact specific business processes
- Ability to map business pains and opportunities to possible IT solutions
- Effective cross-functional communication with a wide range of business, IT, and hybrid personnel
- Understanding of what to look for in vendor products and services for BI

KEY DELIVERABLES

- BI requirements—both strategic and tactical—from a business viewpoint
- · BI funding
- Plans for new or revised BI work, based on business direction

COMMON SECONDARY ROLES

Business user 48%, subject matter expert 48%, business requirements analyst 25%, BI program manager 25%

Annual salary	\$127,945
Bonuses	\$23,457
Average salary change from 2008	+2.0%
Age	41.6
Gender	Male 75% 25% Female
BI experience	7.5 years
Number of certifications	0.7
Years at company	7.8
Percent getting a bonus	68%
Types of bonuses	Individual 67% Company 67% Profit sharing 19% Retention 19%
Job satisfaction	Very high or high 50% Moderate 43% Low or very low 7%
Fairly compensated?	Yes 48% No 38% Unsure 15%
Looking for new job?	Yes 13% Somewhat 50% No 38%
Level of education	PhD 8% Master's degree Bachelor's degree 33% Associate's degree 5% High school 10%
Outside income?	Yes 18%
Options?	Yes 23%
Purchasing authority	Evaluate/recommend Determine need Final purchasing authority None 55% 55% 55% 55%
Professional background	Technical 35% Business 45% Academic 10% Other 10%
Time spent on BI projects	Full 35% Three-quarters 18% One-half 20% One-quarter 20% None 8%

TDWI RESEARCH

TDWI Research provides research and advice for BI professionals worldwide. TDWI Research focuses exclusively on BI and data warehousing issues and teams up with industry practitioners to deliver both broad and deep understanding of the business and technical issues surrounding the deployment of BI and data warehousing solutions. TDWI Research offers reports, commentary, and inquiry services via a worldwide Membership program and provides custom research, benchmarking, and strategic planning services to user and vendor organizations.



1201 Monster Road SW Suite 250 Renton, WA 98057

T 425.277.9126

F 425.687.2842

E info@tdwi.org

www.tdwi.org