White Paper

The Real-World Business Value of Oracle Autonomous Data Warehouse

Sponsored by: Oracle

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EXECUTIVE SUMMARY

To address the mounting complexity and almost paralyzing amount of effort required to mount and maintain an enterprise data warehouse, Oracle is offering to its customers a machine-learning powered, self-managing data warehouse system called Oracle Autonomous Data Warehouse (ADW), which runs in Oracle Cloud Infrastructure (OCI). IDC investigated the benefits realized by a global list of Oracle ADW customers by conducting a business value study to determine both cost savings and business benefits realized by the use of Oracle ADW. This white paper details the results of that study.

IDC interviewed organizations in multiple countries about the benefits derived from using Oracle ADW in a variety of industries. Based on its findings, IDC estimates that the Oracle cloud data warehouse platform will generate annual benefits worth an average of $2.04 million per organization ($39,527 per 100 users) by:

- Enabling more efficient and productive data analytics, application development, and IT staff
- Increasing the productivity of database administrators
- Empowering organizations with greater agility, easier scalability, and more robust stability to better support business units and increase revenue
- Optimizing the use of resources to reduce the cost of operations and the IT infrastructure
- Minimizing unplanned downtime to increase user productivity
- Improving the productivity of business users and analytics teams
- Increasing revenue from improved business operations

Business Value Highlights

- 417% five-year ROI
- 63% reduced total cost of operations
- Five months to payback
- 68% more efficient database administrators
- 84% more efficient IT infrastructure management
- 45% reduction in IT infrastructure costs
- 94% reduction in unplanned downtime
- 27% more productive data analytics teams
- 33% more productive application developers

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SITUATION OVERVIEW

An enterprise data warehouse is a database that contains data collected from a range of application databases across the enterprise. The database is normalized and designed to perform just about any kind of query or reporting required by the business at any level. Such a database is always complex to design but is also very difficult to tune once it's up and running. This is because user demands keep changing, and so constant adjustments must be made to the way the data is physically organized and tables are indexed, in order to deliver acceptable performance to the users.

This problem has become much more difficult in recent years due to the explosion of required business data, increases in the range of data types, demands for self-service departmental data warehouse deployments, and the rising number of concurrent users of the data warehouse. Tuning and troubleshooting the data warehouse is often a full-time job for several database administrators (DBAs). Changes to the database schema to accommodate new data may require reorganizing the database and adjusting the indexing scheme, which means that such changes can take weeks to implement.

Oracle ADW virtually eliminates this effort. It uses advanced algorithms and machine learning to adjust the data organization and indexing on a continual basis while the database continues to run, delivering better performance than a hand-tuned database can deliver. Because it runs as a cloud service, all operational aspects are handled by Oracle staff. Because the infrastructure, based on Oracle Exadata, is purpose-built for Oracle Database management, tasks that are normally highly disruptive from an operational perspective, such as patches and upgrades, are carried out without any interruption in database service. The continual application of security patches is particularly important because it ensures that the database is protected from all known threats. By contrast, databases managed in the enterprise datacenter may go months without having those patches applied, leaving them vulnerable to attack. IDC conducted this business value study to test these assertions, and to determine the true value of Oracle ADW to user organizations.

THE BUSINESS VALUE OF ORACLE AUTONOMOUS DATA WAREHOUSE

Study Demographics

To determine the value and benefit of deploying Oracle ADW, IDC conducted interviews with seven organizations across the globe that are in industries experienced with using the Oracle platform. IDC asked a variety of quantitative and qualitative questions about the impact of Oracle ADW on their operations, the amount of investment involved, and the various benefits realized.

Table 1 shows the demographics and profiles of the study participants. The interviewed organizations had a base of 5,156 employees, all of whom were IT users. This workforce was supported by an average IT staff of 57 engaged in managing 131 business applications used by employees and 680,000 external customers. (Note: all these numbers are averages.)

The interviewed companies are based in the United States, Germany, China, the Czech Republic, Norway, Kenya, and El Salvador and represent a range of vertical industries, including retail, telecommunications, energy, manufacturing, professional services, and real estate.

TABLE 1

Firmographics of Interviewed Organizations

Firmographics	Average	Median	Range
Number of employees	5,156	2,400	38 to 15,500
Number of IT staff	57	28	18 to 200
Number of IT users	5,156	2,400	38 to 15,500
Number of external customers/users	680K	40K	2 to 2M
Number of business applications	131	50	4 to 500
Revenue per year	$1.4B	$1.2B	$57.1M to $3.3B
Countries	China, Czech Republic, El Salvador, Germany, Kenya, Norway, United States		
Industries	Energy (2), Manufacturing, Professional Services, Real Estate, Retail, Telecommunication		

n = 7, Source: IDC In-depth Interviews, December 2020

Choice and Use of Oracle ADW

In discussing their rationale for choosing the Oracle ADW platform, the interviewed organizations highlighted the ability to easily scale capacity as needed and to leverage analytics for a better digital experience as major factors in their choice. The ease of running Oracle ADW and the strength of other Oracle solutions were also important considerations. Here is what some of the respondents said:

- **Easier to run and better for long-term needs:** "We are a small country and company. We have limited resources in terms of IT expertise. It is a challenge to get the best people for the technology that we use – a lot of our country's best-trained people work remotely for companies in other countries. Oracle ADW does not require a lot of skills to run it compared to on-premise databases. With ADW, we can use the people and knowledge that we have. Also, there was a longer term planning reason. We are investing in a production database in the next two years for 100 TBs of storage that you can scale up easily – we can get the capacity resources only when you need them. Besides the scalability, we wanted the reliability of the solution to be better than on-premise. We also noticed there are better services available on the cloud compared to on-premise."
- **Wanted to improve their analytics and digital experience:** "Three or four years ago, we wanted to provide a better digital experience. We saw a convergence of doing everything on mobile phones. For us, the decision was more than just shifting applications onto a new platform. We wanted to capitalize on the analytics because we did not have a good solution. We have eight

different business units so sharing data and performing analytics was a challenge. The data analytics part was critical for our business."

- **Oracle's other strong product offering:** "[When I joined the company] I determined the IT spend was too high for the size of the company. We looked for solutions and in 2015/2016 that led us to the cloud. [Our long-time use] of Oracle on the CRM (customer relationship management) side as well as the database led us to evaluate and choose ADW for our enterprise data warehouse."
- **Restructure their analytics setup to be more consistent:** "We had strategic projects that required all the company's information to be together to allow information analysis and create the analytical sets. Part of the biggest challenge was the consolidation to create the golden record because the information of the products and clients was not standardized in all the countries; for example, the same product had a different identifier by country."

Table 2 gives a breakdown of the interviewed organizations and their use of Oracle ADW. On average, the organizations operated in five countries with eight branches, running nine business applications on 40 servers with 14 databases and an associated capacity of 19 TB.

TABLE 2

Organization Use of Oracle ADW

Oracle ADW Environment	Average	Median
Number of servers	40	3
Number of geographical locations (countries)	5	1
Number of sites/branches	8	6
Number of applications	9	7
Number of databases	14	11
Number of TB	19	6

n = 7, Source: IDC In-depth Interviews, December 2020

Business Value and Quantified Benefits

In its interviews, IDC explored how the Oracle ADW platform helped the organizations increase revenue from improved business operations and reduce costs by making its data and analytics teams and IT infrastructure management staff more efficient and productive. Participants highlighted the value of the platform's automated features, which free up IT infrastructure management staff to spend less time keeping the lights on and more time on strategic projects linked directly to business value. Automation also allowed the organizations to deploy new databases more efficiently and enabled database administrators to focus on data organization improvements and enhancements to move data

closer to the business. Study participants cited the platform's many cost-saving features, including auto-scaling, which allows databases to grow or shrink instantly on-line with the user only paying for what was needed. A flexible licensing model and self-repairing capability added further cost savings. Interviewed participants spoke of these and other benefits of the Oracle ADW platform.

- **Fast and reliable performance:** "The feedback we get is that running queries is very fast. Oracle tunes it on Exadata, and machine learning allows for more tuning to be done in the background. There are no issues with downtime as it is always available. ADW is very much appreciated by the business side."
- **Time freed up to focus on strategic projects:** "Installation and configuration has been simplified. The role of the DBA has been fundamentally changed. ADW runs, it is stable. Automation runs in the background… and it frees the DBAs up to focus more on design improvements and enhancements. It allows planning to be less reactive and more thoughtful."
- **Flexibility to support environments**: "With the cloud infrastructure [behind ADW], we are able to reduce operations, especially when we need to scale resources. This reduced our staffing needs. DBAs are now able to concentrate more on design and development issues."
- **Cost-effective capacity:** "There is a maximum benefit from the flexibility to reduce or add capacity. This has a significant financial benefit. Additionally, my finance guys would say the reduction in the license cost is the most noticeable. The ADW licensing model is more flexible."
- **Improved analytics for the business**: "The biggest benefit is the lower costs, but more importantly the speed that we can provide meaningful analytics for the business side. We have been able to provide a better data structure for the business."
- **Ease-of-management:** "Maintenance is very easy. You do not really need to think of maintenance, no patching or upgrading. It is done in 10 minutes instead of six to eight hours, plus you would have to plan and organize with the business to do the upgrades. ADW also has ease-of-use because it is always available. There's also a lot less time managing. We don't have to worry about not getting business for doing this and that. It just runs."

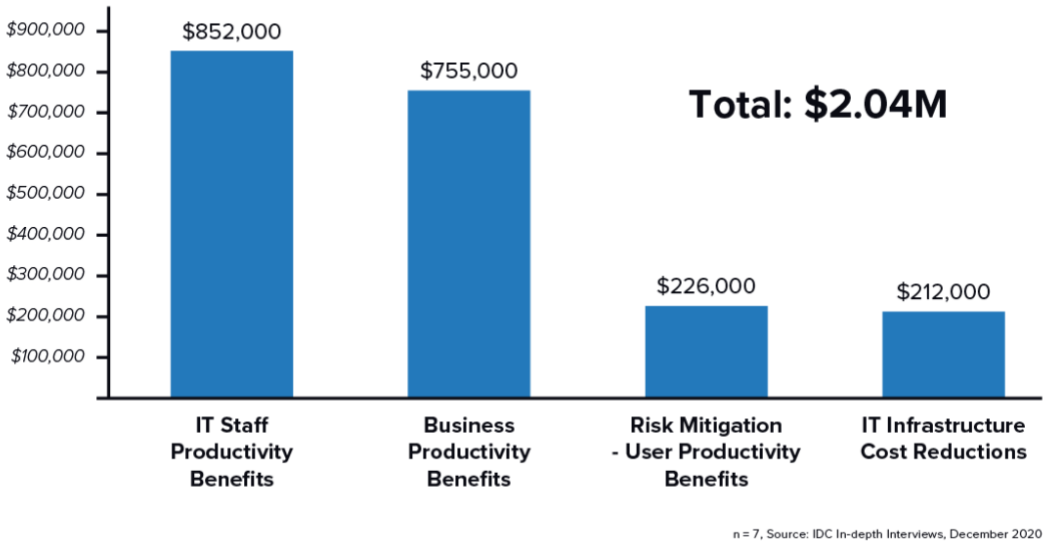
From its interviews with Oracle ADW customers, IDC calculates that they will realize an average annual value of $2.04 million ($39,527 per 100 users) from the following benefits (see Figure 1 below):

- **IT staff productivity benefits:** Study participants benefited from Oracle ADW's automated features, which minimized the day-to-day operations for various data and IT teams. As a result, IDC projects that they will realize productivity gains worth an annual average of $852,000 per organization ($16,524 per 100 users).
- **Business productivity benefits:** Study participants can better support their business operations with greater agility, along with easier and more efficient scalability with Oracle ADW. IDC puts the value of the resulting higher revenue at an annual average of $755,000 per organization ($14,643 per 100 users).
- **Risk mitigation – user productivity benefits:** Study participants reduced lost employee productivity and revenue caused by unplanned outages thanks to the platform's self-repairing capabilities and other automated features. IDC calculates that the companies will realize average annual benefits worth $226,000 per organization ($4,379 per 100 users) in higher user productivity and revenue.
- **IT infrastructure cost reductions:** Study participants reduced lost employee productivity and revenue caused by unplanned outages thanks to Oracle's management of the cloud infrastructure as well as the platform's self-repairing capabilities and other automated features.

IDC calculates that the companies will realize average annual benefits worth $2.04 million per organization in higher user productivity and revenue.

FIGURE 1

Annual Average Benefits per Organization



n = 7, Source: IDC In-depth Interviews, December 2020

Performance and Operational Impact

In its interviews, IDC asked how the Oracle ADW platform's automated features, increased speed, and nearly unlimited capacity had benefited the participants' businesses and operational processes. Participants commented on how the automated features had freed up IT staff to work on strategic projects and enabled database administrators to spend more time responding to the needs of business users. They also cited how the platform's auto-scaling features helped them meet changing business needs efficiently and effectively. Other participants spoke about these benefits:

- **Simpler management of infrastructure:** "Stability is the one thing for us. We don't have to spend time on maintaining our environment for operations. With automation and orchestration, IT can spend time on other value-added projects."
- **More efficient database management means business users are better supported:** "Our DBAs are able to work more closely on business matters, such as responding to the business units. For us as an organization, there is just so little time that we need to devote to maintenance and support. Even for cloning a database you do not need a DBA – someone on the business side, after some training from me, can just point and click on the database. That is the kind of operation I was referring to when I noted the 90% improvement. We have moved the data closer to the business."
- **Better database agility:** "Last year using classic Oracle databases, we had to stand up databases, and implement API gateways to access the database programmatically. It took about a week for a developer doing admin work just trying to stand all that up, plus a week of

testing. Using ADW with SODA APIs built into it took four hours. It went from two weeks to four hours for that development. That kind of speaks for itself."

- **Change IT model:** "We were previously using a very heavy waterfall model, but now we're more DevOps-orientated. In a traditional Chinese business, we used to do more about maintenance, now it is about empowerment."

To explore the impact of Oracle ADW on the participants' staff efficiencies, IDC asked a series of questions about how their database administrators and IT infrastructure management teams spent their time before and after the deployment. IDC also inquired about the savings in IT infrastructure costs made possible by the cloud-based Oracle data warehouse platform.

IDC found that Oracle ADW made the companies' database administrators (DBAs) much more productive because the platform automates several of their tasks. This allows DBAs to work on more strategic projects, as one interviewee told IDC: "In the IT group the role of the DBA has changed. The DBA is now the data scientist." With Oracle ADW the organizations were able to reduce the staff time spent on DBA-related tasks by an average of 68%, as shown in Table 3.

TABLE 3

Database Administrator Impact

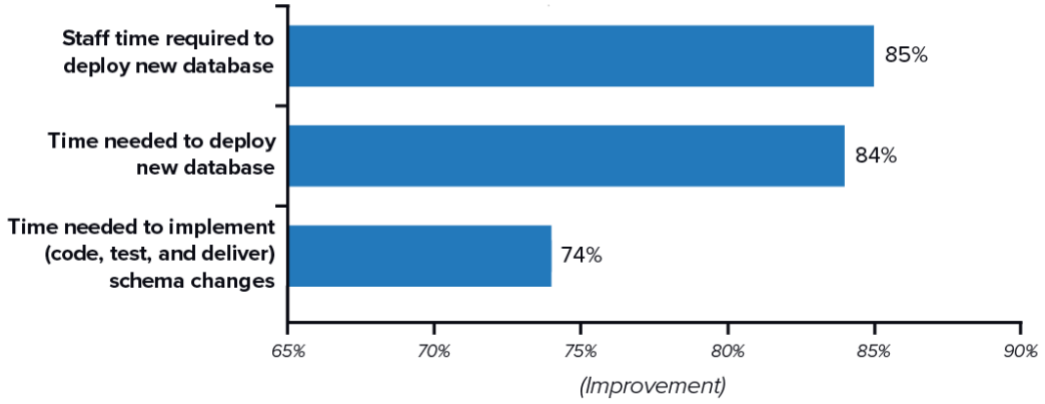
	Before Oracle ADW	With Oracle ADW	Difference	% Benefit
Database Administrator, FTE equivalent per organization per year	2.1	0.7	1.4	68%
Value of staff time, $ per organization per year	$107.5K	$67.1K	$40.4K	68%

n = 7, Source: IDC In-depth Interviews, December 2020

IDC also found that the Oracle ADW platform enabled the companies to deploy new databases more quickly and efficiently, benefiting their business units in many significant ways. As shown in Figure 2, the time needed to deploy a new database with Oracle ADW dropped by an average of 84% and the staff time required fell by 85%. In addition, the time needed to code, test, and deliver schema changes was reduced by an average of 74%.

FIGURE 2

Database Agility Impact



n = 7, Source: IDC In-depth Interviews, December 2020

Due to the automated features of the cloud-based platform, the interviewed organizations have been able to reduce the staff time needed to manage their IT infrastructure significantly. As shown in Table 4, the organizations saw an average 84% reduction in the time spent managing their IT infrastructure. This productivity improvement saved an average of $628,000 per year.

TABLE 4

IT Infrastructure Staff Impact

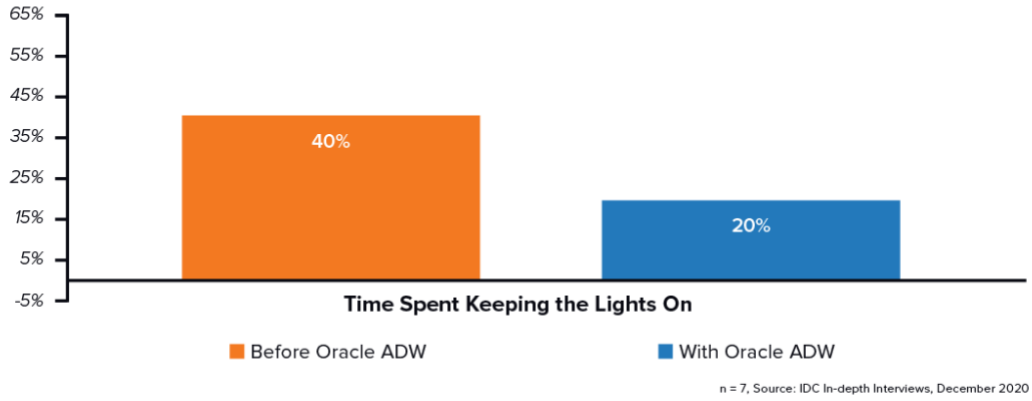
	Before Oracle ADW	With Oracle ADW	Difference	% Benefit
Staff time to manage infrastructure, FTEs per organization	7.5	1.2	6.3	84%
Value of staff time, $ per organization per year	$752K	$124K	$628K	84%

n = 7, Source: IDC In-depth Interviews, December 2020

In particular, the IT infrastructure management teams now spend significantly less time keeping the lights on, freeing them to work on more productive business priorities. As shown in Figure 3, the average time per organization spent keeping the lights on has been sliced in half from 40% to 20%.

FIGURE 3

IT Infrastructure Team Activity Impact

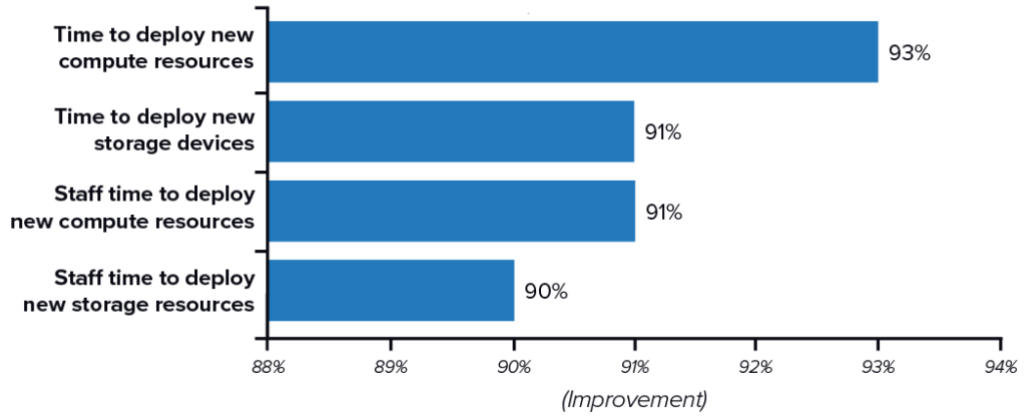


n = 7, Source: IDC In-depth Interviews, December 2020

The Oracle ADW platform has also increased the agility of the organizations' IT teams in deploying new compute and storage resources. On average, the time required to deploy new compute resources has been cut by 93% and to deploy new storage by 91% (see Figure 4). In addition, the average staff time needed to deploy new compute resources has been reduced by 91% and to deploy new storage resources by 90%.

FIGURE 4

IT Agility Impact



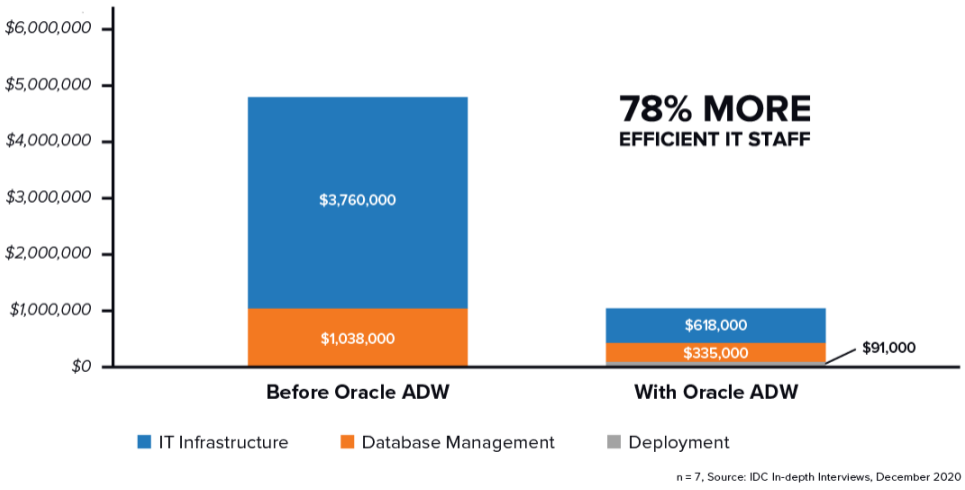
n = 7, Source: IDC In-depth Interviews, December 2020

IDC evaluated the cumulative staff time impacts experienced by study participants after deployment of Oracle ADW. IDC calculated that over a five-year period as shown in Figure 5, the IT staff involved in managing processes related to databases and other IT infrastructure would require 78% less time to complete these tasks and projects. Staff no longer are involved in IT infrastructure provisioning and

maintenance, for example, but remain responsible for tasks such as monitoring infrastructure thresholds and decision making related to current and future requirements.

FIGURE 5

Total IT Staff Time Impact, 5 Years

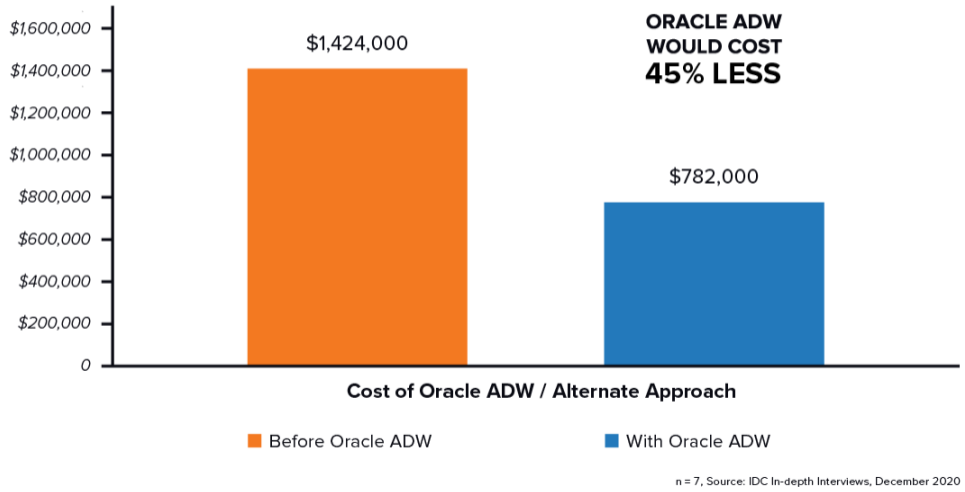


n = 7, Source: IDC In-depth Interviews, December 2020

Some of the participants mentioned that Oracle ADW's flexible licensing model had reduced their licensing costs substantially. IDC determined that the licensing model allowed the companies to cut their licensing costs by an average of 45%, which amounted to an average saving of $642,000 over five years (see Figure 6).

FIGURE 6

Software Licensing Cost Savings, 5 Years



n = 7, Source: IDC In-depth Interviews, December 2020

Business Benefits of Oracle ADW

In discussing the business and operational impact of Oracle ADW, the participants underscored that it enabled business users and empowered the analytics teams to run timely and high-quality queries and create real-time reports. Others commented on the value of more efficient and speedier database operations and the impact on user productivity of reduced unplanned downtime. In addition, participants noted how their application developers had benefited from the improved analytics and the platform's increased speed and capacity. They also spoke of the following benefits:

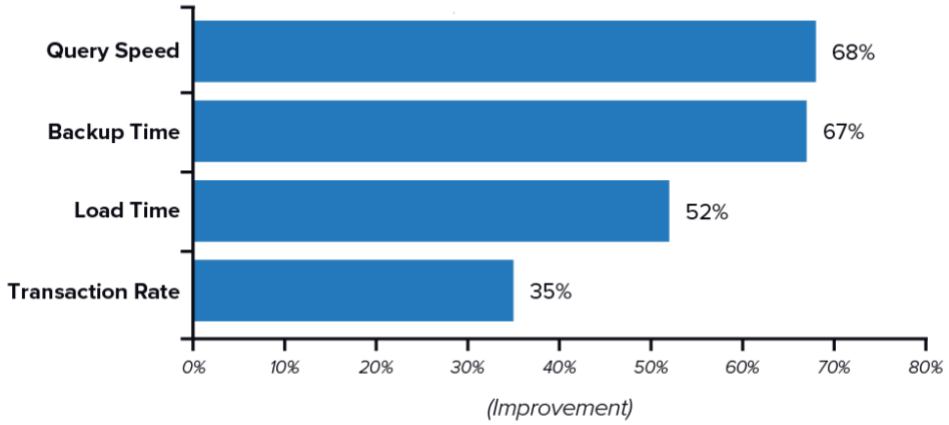
- **Business users don't need IT as much to do their work:** "We are a production company. We cannot run the business without IT. Technology like ADW enables business users to do a lot without the IT department. We are always occupied with other work, and they no longer have to wait for us."
- **Meets business needs faster:** "We use it with Oracle Analytics Cloud. A user in sales, for example, whether they are in the cloud or on-premise still needs to make and send invoices; however, the process for the analytics and the reporting system has changed very much for that user because of the integration between ADW and Analytics Cloud's Business Intelligence (BI). The advantages of using the BI include predicting events. When will the next error or failure of some machine occur? Based on statistical data, we can now predict this. The most important things are real-time reports; fraud detection in finance; defects in production based on statistical data, and trends in sales, marketing, and supply chain."
- **Faster analytics frees up developers:** "Database access and spin up benefits our developers. For example, we are doing a Proof of Concept (POC) for a potential customer. Had I used the older databases it probably would have taken a week just for the database work to prepare the POC. With ADW it was up and staged in four hours. That is a huge decrease. In terms of resources, I didn't have to spend my developer time. The operations team could do it. The developers could just focus on the development of the POC."
- **Improved queries setup for the analytics teams:** "The ability to run queries, the quality of the queries, and the timeliness have all made an enormous difference, particularly for the business analysts."
- **More empowered analytics teams**: "The process for developing standard reporting is much more efficient, as it does not require technical developer support to build. Our BI Manager designs the report upfront in a format that makes it simple for the end user to simply change dates to receive updated reports. We are also transforming the level of analysis we perform with the additional time created plus identifying insights to help our business leaders become more informed on data results."

To investigate more fully the business benefits of Oracle ADW, IDC asked questions about the platform's impact on the total cost of operations and the performance of the companies' data analytics teams and application developers. In addition, IDC inquired about the reduced downtime made possible by the self-repairing Oracle platform and its effect on user productivity.

In discussing the impact of Oracle ADW on their operational performance, the participants cited the increased speed of conducting database operations and creating the reports they need. On average, the companies boosted query speed by 68% (see Figure 7). Backup time has been cut by 67% and load time by 52%. In addition, the transaction rate is 35% higher.

FIGURE 7

Key Performance Impact Metrics



n = 7, Source: IDC In-depth Interviews, December 2020

With the Oracle ADW infrastructure, organizations have been able to reduce the unplanned downtime users experienced in accessing their databases and applications. As shown in Table 5, the average frequency of outages has dropped by 75%. The average time to resolve problems has also been reduced by 75%, cutting the hours lost per user by 94%. The average annual savings from the increased user productivity amounted to $242,000 per year.

TABLE 5

Unplanned Downtime, User Productivity Impact

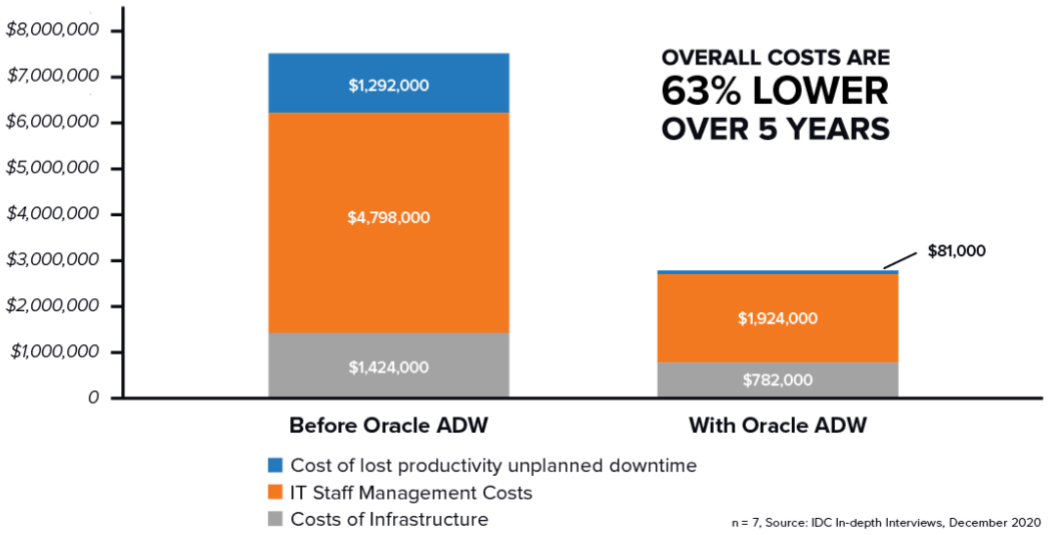
	Before Oracle ADW	With Oracle ADW	Difference	% Difference
Frequency per year	15.9	4	11.9	75%
Time to resolve (hours)	6.1	1.5	4.6	75%
FTE impact, lost productivity due to unplanned outages	3.7	0.2	3.5	94%
Hours lost per user	1.3	0.1	1.2	94%
Value of lost productivity per year	$258.0K	$16.2K	$241.8K	94%

n = 7, Source: IDC In-depth Interviews, December 2020

By reducing management and licensing costs and user productivity lost to downtime, Oracle ADW has enabled the interviewed organizations to lower their Total Cost of Operations by an average of 63%. Over five years, the average cumulative savings totaled $4.72 million (see Figure 8).

FIGURE 8

Total Cost of Operations



The organizations' analytics teams have also benefited from improved access provided by Oracle ADW to the data that they need and the ability to generate the reports required by their business users.

Table 6, illustrates that organizations had an average of 2.8 Full-Time Equivalents (FTEs) working in data and analytics before implementing Oracle ADW. After deploying Oracle ADW, the efficiency gains meant this same staff were able to do the work of 3.4 FTEs, a 20% efficiency gain. Data scientists, business intelligence staff, analytics engineers, and business analysts have all become more productive by amounts ranging from 20% to 35%. The annual value in analytics staff time averaged
$810,000 per year.

TABLE 6

Data and Analytics Team Impact

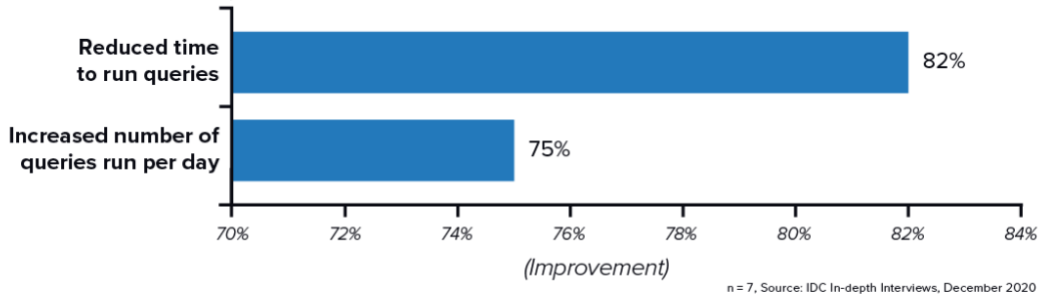
	Before Oracle ADW	With Oracle ADW *(equivalent FTEs)*	Difference	% Benefit
Data Scientist, FTE Impact	2.8	3.4	0.6	20%
Business Intelligence, FTE Impact	5.0	6.5	1.5	30%
Analytics Engineers, FTE Impact	9.5	12.8	3.3	35%
Business Analysts, FTE Impact	13.0	15.8	2.8	21%
Total Analytics Staff FTE Impact	30.3	38.4	8.1	27%
Value of staff time, $ per organization per year	$3.03M	$3.84M	$810.0K	27%

n = 7, Source: IDC In-depth Interviews, December 2020

With Oracle ADW, the organizations' analytics teams were able to run more and higher-quality queries in a more efficient manner (see Figure 9). On average, the teams were able to run 75% more queries per day while reducing the time needed to run the queries by 82%. This increase in query activity implies that organizations were extracting far greater value from their information management systems.

FIGURE 9

Analytics Agility Impact



n = 7, Source: IDC In-depth Interviews, December 2020

Application developers also benefited from the improved analytics and Oracle ADW's increased speed and capacity. Table 7 illustrates that organizations had an average of 4.4 Full-Time Equivalents (FTEs) working in application development before implementing Oracle ADW. After deploying Oracle ADW, the efficiency gains meant this same staff were able to do the work of 5.8 FTEs, a 33% efficiency gain producing $145,000 in annual value.

TABLE 7

Application Development Productivity Impact

	Before Oracle ADW	With Oracle ADW *(equivalent FTEs)*	Difference	% Benefit
FTEs per year per organization	4.4	5.8	1.4	33%
Salary cost per year per organization (based on FTEs)	$438K	$582K	$145K	33%

n = 7, Source: IDC In-depth Interviews, December 2020

ROI Summary

IDC's analysis of the financial benefits and investment costs related to study participants' use of Oracle ADW is summarized in Table 8. IDC calculates that, on a per organization basis, organizations will achieve total discounted five-year benefits of:

- $7.42 million ($536.9K per database) in employee productivity gains, increased IT staff efficiencies, higher revenue, lower licensing costs, and more productive data and analytics teams and application developers.

- Over five years, the total discounted investment costs are projected at $1.44 million per organization ($103.8K per database).
- Based on these projections, IDC calculates that these Oracle ADW customers will achieve an average five-year return on investment (ROI) of 417% with breakeven on their investment occurring in an average of five months.

TABLE 8

Five-Year ROI Analysis

	Per Organization	Per Database
Benefit (discounted)	$7.42M	$536.9K
Investment (discounted)	$1.44M	$103.8K
Net Present Value	$5.99M	$433.9K
ROI (NPV/Investment)	417%	417%
Payback (Months)	5 months	5 months
Discount Factor	12%	12%

n = 7, Source: IDC In-depth Interviews, December 2020

CHALLENGES/OPPORTUNITIES

Oracle can expect challengers to Oracle ADW. Already, several database cloud services are developing self-managing capabilities. Oracle must continue to innovate, offering more ways to improve the user experience and enable greater development agility in order to maintain its substantial lead. At the same time, Oracle ADW represents a way forward for enterprises that cannot afford a large and technically proficient DBA team to manage its data warehouses. This means new opportunities for Oracle, and new options for small and emerging companies.

CONCLUSION

It is clear from this study that Oracle ADW has delivered significant benefits to these global customers. Not only can they manage data warehouses with less effort and better overall performance, but they are delivering more agility to developers, more useful data in a timely manner to users, and higher value work for DBAs and other data professionals. The bottom line for the enterprise is that more useful work is being done at a lower unit cost, staff time is freed up and often spent on higher value activities, resulting in greater insights delivered on a more timely basis to key business stakeholders.

In order to determine the benefit of Oracle ADW for your organization, you should undertake the following steps:

- Determine how many data warehouses you currently manage, how much staff they require, and their total cost in terms of licensing, infrastructure, and operations.
- Find out how long it takes for user requests for changes to the data warehouse, including schema changes and query improvements, to be completed.
- Try to discover whether business users are getting real-time data for decision making, what reports they wish they had, and how many analytics projects are put off or canceled because there isn't time or resources for them.
- Review the productivity and savings benefits described in this study to see to what extent they address the issues listed above. Try to calculate what your own benefits might be.
- If you find those benefits to be compelling, then you should definitely consider adopting Oracle ADW.

APPENDIX - METHODOLOGY

IDC used the following three-step method for conducting the ROI and Business Value analysis informing this study's results and conclusions:

1. **Gathered quantitative benefit information** during the interviews, using a before-and-after assessment for interviewed organizations of using Oracle ADW and a comparison of anticipated time and costs required for migrating compared with another public cloud alternative. In this study, the benefits of using Oracle ADW included cost savings, IT staff time savings and efficiencies, and higher user productivity and revenue.
2. **Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of deploying and using Oracle ADW, and can include additional costs related to migrations, planning, consulting, and staff or user training.
3. **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Oracle ADW over five years. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from current users of Oracle ADW. Based on interviews with 10 organizations, IDC performed a three-step process to calculate the ROI and payback period:

- Measure the benefits from use of Oracle ADW solutions in terms of IT staff efficiencies and productivity gains, reductions in IT costs, and higher user productivity and revenue.
- Ascertain the investment made in deploying Oracle ADW and associated migration, training, and support costs.
- Project the costs and savings over a five-year period and calculate the ROI and payback for use of Oracle ADW.

IDC bases the payback period and ROI calculations on assumptions that are summarized as follows:

- Time values are multiplied by burdened salary (salary plus 28% for benefits and overhead) to quantify efficiency and productivity savings. IDC assumes a fully burdened salary of $100,000 per year for IT staff, including developers, and $70,000 for other employees, with an assumption of 1,880 hours worked per year.
- Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.
- The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.
- Lost productivity is a product of downtime multiplied by burdened salary.
- The net present value of the three-year benefits is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each company what fraction of downtime hours to use in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.
- Further, because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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