Your IT Career–Kick It Up a Notch!

By John Kanagaraj

In today's fast-paced IT world, knowledge and application of new technologies and techniques can make or break a knowledge-worker's effectiveness. This is especially true for Oracle professionals who develop, implement, and maintain applications that are an integral part of an organization's operations. It is thus essential that these professionals continuously seek, acquire, test, and implement new technologies and techniques. Most of the time, the change is so rapid that it seems as if you are on a treadmill that is increasing in speed, and you need to run faster and faster to stay in the same place. Stopping or even pausing will throw you off the treadmill! In this article, we will see how to keep running while still maintaining your sanity. Based on true experiences from the author's two-decade long IT career, this article will explain the points using a little bit of humor and a lot of common sense.

First Things First

Whether you are a just-one-year-in-IT beginner or a thirty-plus-years-in-IT "dinosaur" who actually knows what the Hollerith code is, by now you should know that a career in IT is a demanding one-demanding your time, energy, and skills. In spite of this, you may already have decided that a career in IT is still worth pursuing. A forward-moving vehicle's destination is set by the driver, as the driver is consciously making the decision to steer in that direction. In the same way, it is important for you to make the decision to not only stay your path but move forward consistently in a particular direction. Regardless of where you are in that path, we hope this article will help you in making that journey a better one.

Editor's note: For those curious about the Hollerith code, read bttp://c2.com/cgi/wiki?HollerithPunchCard.

Since IOUG and *SELECT Journal* focus on the Oracle database, its tools and technologies, and associated processes, we also need to state that this article is geared specific to Oracle DBAs, Developers and Architects. We are also dealing with "technologists" more than "managers" in this article, although some of the skills we describe will stand you in good stead when you move up the ladder from a technologist to a manager.

If you are relatively new to the world of Oracle, this article provides some advice that will help advance your career. If you are an experienced pro, we hope it will help crystallize what you know and maybe teach you a few new things.

"What I have already learnt is but a handful; what I haven't yet learnt is as large as the world itself" – wise old Indian sage

Not only do we have to be sure that we want to pursue this career, we also need to be teachable, wherever we are in this journey. The first step in doing this is to realize that there are many, many aspects of Oracle technologies that we do not know about, regardless of our current experience and knowledge, and that learning as a process never ends.

There is also no precise formula or proven, consistently followed methodologies for advancing your IT career, so you may not fully agree with the ideas put forth in this article.

While referring to the third person in this article, we will use the word *she* as it also encompasses *he*–using the former word requires one additional keystroke of the author for every usage, but that is a small price to pay for universal inclusion!

Quick Overview of Required Skills

It is clear that an Oracle professional needs to possess a number of skills. These skills can be classified as "hard skills" that deal with technology and knowledge and "soft skills" that deal with people and processes. The skill levels required will also vary depending on the level of the position and the technologies being used in that particular job. Whatever the demands may be, there are certain baseline skills that are absolutely required.

Junior DBA/Developer. A junior Oracle DBA needs to know the basics of installation; backup and recovery; security; and maintenance. Knowledge of Oracle architecture, simple troubleshooting, scripting and SQL/PLSQL would be a great help. A junior Oracle developer needs to know SQL/PLSQL, Oracle objects and their characteristics as well as their language of choice and how it interacts with Oracle. Simply put, a DBA has to know how to run a database while a developer has to know how to run a program within a database. Both need to be skilled at using the "tool of choice" for accessing the database or developing applications-be it a third-party tool such as TOAD or PL/SQL Developer or the Java IDE.

As for soft skills, both need to have the ability to work in a team, follow instructions, and most of all, be keen to learn as they have a long and exciting journey ahead of them. We will address the learning part later in this article. We would generally consider a person with one or two years' experience to be at this level, and it is sometimes exciting to be in such a position as everything is new and holds promise. Be aware though that in a well structured and established environment, the junior DBA may be relegated to executing mundane, resource-intensive tasks such as space maintenance, patch rollout, and cloning activities. While it serves to offload these tasks from a more senior person, the danger is that the junior DBA does not get a chance to learn and try out new skills. If you are in this position, you should negotiate to be allowed to spend some agreed percentage of your time on more "interesting" work, or be prepared to learn as much as possible on your own before moving out!

Mid-level DBA/Developer. This level stretches the most from one end of the spectrum to the other. At this level, the DBA should have good knowledge of troubleshooting, operating systems, scripting, and SQL/PLSQL, and should be able to document procedures and direct others. While not required to be a world-class tuning expert, this DBA must be able to recognize and correct performance-related issues with some assistance. The mid-level DBA should have the capability to recover from various types of media and other failures and in fact should be prepared to handle disasters. Some knowledge of the Application layers (mid-tiers and related technologies) and other Application-related skills will be advantageous. The mid-level developer should already be an expert in SQL/PLSQL and Oracle object usage as well as the language of choice.

Both the mid-level DBA/Developer should possess the ability to interact with Oracle Support and conduct interviews. She should also be able to advise others on development-related issues and have some knowledge of the business and how it runs. The ability to direct and oversee the works of junior folks, as well as perform quality assurance work is a plus and sets the background for advancement. She should also be unafraid of reading copious amounts of documentation, Oracle-related literature, and books.

One of the dangers of being a mid-level DBA is that this DBA can turn into a "DBBS"–a database babysitter. A mid-level DBA (and Developer for that matter) can perform two hundred *different* tasks and face two hundred *different* challenges, or she could have performed the *same* task or face the *same* challenge two hundred different times. Both could have occurred over the same length of time, but the former would help in the evolution of a truly skilled and versatile DBA while the latter would help make a "DBBS." If you are at this level, watch out for this phenomenon. The solution is to find and pursue opportunities for improving and extending the service that you provide to your customers, and not to remain complacent.

Senior DBA/Developer/Architect. A senior DBA/developer is at the peak (or close to the peak) of her skills. In addition to being able to perform the tasks detailed for a mid-level DBA or developer at a very high skill level, this senior person serves as the go-to person for all aspects of more than just Oracle. Identifying and fixing performance issues is just part of everyday work for this DBA/developer. She architects solutions rather than databases, and is able to deal with the intricacies of the database and related applications. She has in-depth knowledge of platforms, techniques, information systems, and IT infrastructure, which help her chart out how the Oracle Service that the DBA/Developer group provides will function one or two years down the line, and implements plans to get there. She writes technical articles and presents at seminars, maybe even writes a book, helps organize user groups, and serves as a voice in the Oracle community. In short, she is a leader, mentor, visionary, trail-blazer, architect, and super-DBA/developer all rolled into one!

An Oracle Architect is usually a senior DBA/developer architect with all these skills. The only difference is that an architect is removed from the day-to-day production, support and development issues that may still dog the senior DBA/developer.

The soft skills required for this job include negotiating and presentation skills, forethought, and team-building in addition to the others listed before. One of the dangers of being in this position is that one might become unteachable. A senior DBA/developer should always be willing to learn, even from the junior-most person!

So How Do We Get There?

Regardless of where you are in this journey, one common thread that runs through all levels is that we have to be in a constant mode of learning. While the most obvious challenge to learning is the lack of time due to pressures at work, family, and other activities, this is one aspect which has to be tackled at the individual's level. As we mentioned before, if you are committed enough to advancing your career, you will be able to find time-starting with giving up your favorite TV show! Some might find that allocating a fixed period of time for learning works for them, while others may prefer to read in-depth when faced with a specific situation.

Go to (Oracle) School!

The easiest method of learning is to attend Instructor Led Training (ILT) conducted by either Oracle Corporation or other specialized organizations. While they cost more than any of the other methods, one is mostly guaranteed undivided attention during the course and a chance to actually try out the technology being taught during the exercises. Our advice with respect to ILTs is this: Pick and choose your courses, and go to them at the *right* time! For example, if you are an Oracle DBA having to deal with installing and maintaining Oracle's E-Business Suite (also known as Oracle Applications 11*i*), then you should go to a course that teaches installing the E-Business suite either immediately before or after your first installation of this very complex product. You might want to then follow this up with a course on maintaining the E-Business suite in a few months, and definitely before production implementation.

Tight budgets and travel restrictions have cut this type of training down, but the US$2,500 or so spent on a five-day course will pay itself back in costly consultation fees that your organization might otherwise have to pay later. If you are planning to become an Oracle Certified Professional, then you will have to take at least one ILT specifically from Oracle University. Browse at http://education.oracle.com for details. Note however that Oracle Corporation is not your only choice for general ILTs as a number of other consulting organizations conduct such training both off- and onsite. If you have a large team and want all of them trained, it might be cheaper to consider such onsite training.

A slightly unstructured but concentrated method of learning is attending seminars and user conferences. The Independent Oracle Users Group (IOUG) conducts half- and one-day University Seminars packed with presentations by recognized experts at their annual education event. The IOUG and the OAUG are going to host COLLABORATE 06 together starting in 2006 along with the Quest International Users Group. While there is a cost to attend, you do have the privilege of accessing top-class content and the ability to interact with both experts and your peers. A number of other geographical (regional) user groups also conduct shorter seminar and "training days" which are less costly in terms of both fees and travel requirements. Go to www.ioug.org to read more. While you are there, follow the Regional User Group links to get to one that is nearest to you. Memberships in these groups will also provide you with access to technical repositories that contain a wealth of information. One of the prime advantages of these groups is that they are peer-based and form a powerful voice for and on behalf of the users.

Do-it-yourself!

The second, cheapest (literally free if you use Oracle-supplied manuals), and self-paced method is media-based learning. At one end of the scale is Computer Based Training (CBT) in the form of installable lessons or self-paced study in the form of online courses. While not as expensive as the ILTs, CBTs can still be expensive. Our advice: Hit your manager with ILT fees and then offer the CBTs as a lower priced alternative! Many online courses, such as those provided Oracle University (http://ilearning.oracle.com), offer a variety of self-paced courses for a flat fee that covers a set time of unlimited access. OAUG offers free webinars and online training to members. Most CBTs provide immediate feedback in the form of tests and quizzes.

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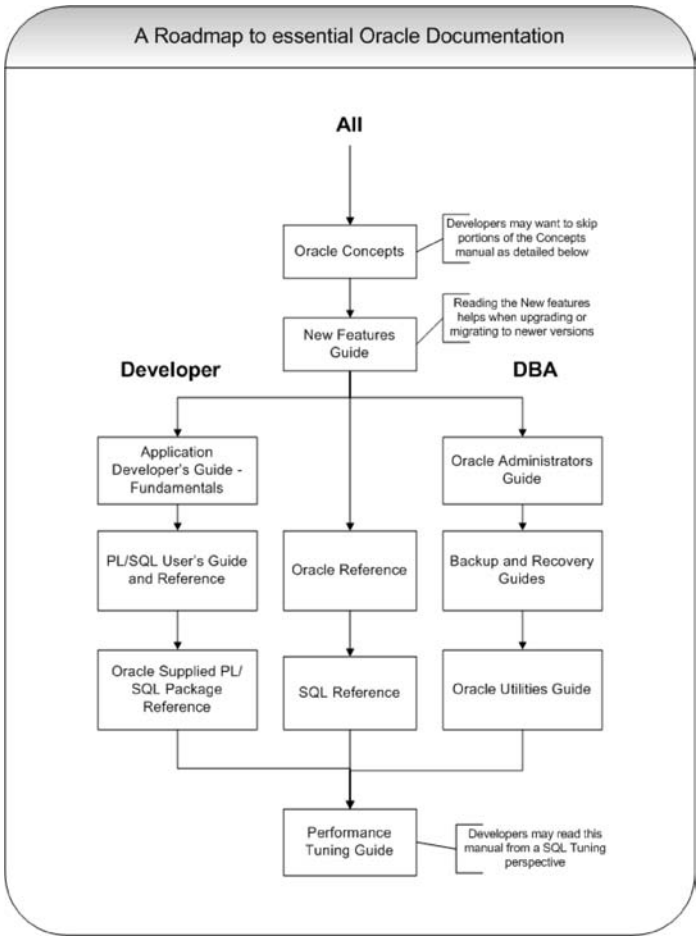
On the other end of the scale is the written word, in the form of books and manuals. There are a large number of books on every aspect of Oracle and related technologies. Many online stores allow you not only to list and order such books but also provide reader and editorial reviews and in some cases allow you to browse and search inside certain books. In most cases, a sample chapter is provided for you to download, read for free and help decide whether that book is worth purchasing. *Oracle* magazine also reviews some of the selected books, and IOUG might do that in the future. While not as costly as CBTs, a good book can usually be obtained in the US$30 to US$50 range. Used or nearly new books can also be purchased from some sites for a lower price. One of the main advantages of using a book is that a good one will usually cover the essentials all in one tome, and additionally provide insights and tips that are either not well documented or not documented at all! These books often shine their light on Oracle from a different, practical, real-world perspective. Standing on the shoulders of these giants will help you to reach farther! We would suggest buying and reading books that deal with specific topics of interest as you become more mature and experienced. Be aware though that some books, especially those dealing with complex and newly released versions, are a "cut-and-paste-format" of the manuals.

Oracle manuals are available-free-for anyone to read at http://tahiti.oracle.com. The biggest problem is the number, size and organization of Oracle manuals. Written to be read as a whole, they do not make for easy reading! You might have to jump from one manual to another as they cross-refer each other a lot. There was a time in the late 1990s when this author was living on a remote island and had to literally read the Oracle 7 Concepts guide and the Administrators manual from cover-to-cover before taking the OCP exams, as manuals were the only source of information available. Today, there are more than 160 manuals in the complete Oracle Database 10*g* documentation set. With page counts from 300 to 600 in each manual, they are like Mount Everest to a beginner. Ultimately, manuals are the most authoritative in terms of content, but they are not always infallible and not always complete.

Oracle also maintains two other excellent sources of enlightenment for all things Oracle-Oracle Technology Network (OTN) and Oracle MetaLink. Essentially unstructured, you will need to register in order to use OTN at http://otn.oracle.com. This is currently free, and there is a wealth of information, including the online manuals, downloads, discussion forums, etc. Oracle MetaLink (http://metalink.oracle.com) on the other hand, is a subscription-only, Web-based service that is accessible when you have a Customer Support Identifier (CSI). Your organization's MetaLink Administrator will have to register your account for you to be able to use this web site. Oracle Corporation provides a lot more on Metalink as compared to OTN–it is a portal for you to obtain Oracle News and Technical notes, determine availability, log and follow up on Technical Assistance Requests (TARs), download patches, view bugs and a whole lot more. MetaLink usually posts corrections or additions to manuals in an unstructured form as ML Notes.

Whatever your method of choice, this "do-it-yourself" education has to be ongoing. As we said before, the manuals are the most authoritative source of information, and at many points of time in your career as a DBA or developer, you *will* need to read the manuals. The choice and number of manuals, however, is bewildering, so we will provide an essential, starter-type reading roadmap for both developers and DBAs below in Figure 1. Finally, there is the Internet and the easily accessible set of search engines. A large number of sites carry FAQs (frequently asked questions) and archives of previous discussions that might have already answered your question or provided the right solution. Surely, many others may have faced and surmounted the same issues that you currently have! More about this in the next section.



Ask Others!

We all ask our peers and friends for information and assistance many times or are forced to read Oracle manuals or MetaLink notes. However, you may be aware that Oracle Corporation is not the only source of information about all things Oracle-there is a lot of information available on the Internet. Many Web sites publish Oracle-related technical articles for free or for a small fee. Many Oracle discussion forums make their content available via the Internet. You will be able to read them without having to subscribe to these forums. Search engines are now able to search out specific words and phrases from these Web sites and allow you to get to these tips and techniques. As with all information from the Internet however, you will have to apply your judgment and common sense in using this information. Some of the most popular ones are listed below - this is by no means the complete list!

- Oracle-l Listserv. This is simply the best of the best. Frequented by some of the top experts in the industry, this long-standing (1998 onward!) listserv is e-mail based. Visit www.freelists.org/webpage/oracle-l to read the rules and subscribe. Searchable archives of previous discussions are available for a period.
- AskTom. This is a Web-based forum (asktom.oracle.com) run by the legendary Tom Kyte, a VP at Oracle Corporation. Built using HTML DB, this site is searchable and is widely read. You will find many "newbie" type questions already answered and gentle pointers to the documentation where appropriate.

- OAUG-DBA Listserv. This e-mail list caters specifically to Oracle Applications DBAs and is hosted by OAUG. Go to www.oaug.org/oaugResources.shtml for details.
- ODTUG (Oracle Development Tools Group) Lists. Specifically meant for Oracle developers, this site contains a wealth of lists on various topics. Go to www.odtug.com/subscribe.htm for details.
- CDOS (Comp.Databases.Oracle.Server) Network News Protocol (NNTP). This is a publicly accessible NNTP News group. A Web-based version is available at http://groups.google.com/group/comp.databases.oracle.server?lnk=gschg. For details about how to use this, read www.dbaoracle.net/readme-cdos.htm.

Although "ask others for help" sounds simple, there are a few things that you need to know and do before you ask. Broadly speaking, they are:

- *Before* you even get ready to ask a question, be sure that you have done your homework. In other words, you should have done *some* research on your own by reading the (possibly relevant) manuals, searched the FAQs (Frequently Asked Questions) from Web sites, and have tried all that you know. Remember that no one is obliged to give you an answer, and that no one will "do your job for you."
- "ASCII stupid question, get stupid ANSI." While formulating your question, keep in mind that only *you* know the relevant circumstances behind your question. For example, the answer to "How do I access an external file in Oracle?" without stating that you are using Oracle 8*i* might well invite a barrage of answers that point to using the EXTERNAL TABLE feature in Oracle 9*i*. Include as much relevant information as required (such as version, operating system platform, relevant options, or parameters used) when asking your question. Also state what you have already tried, so that you don't get trivial answers. If you or someone else has made any changes recently, include that too, even if you think it is not relevant (it could be!). If you have read a particular manual or MetaLink note applicable to this situation and do not understand what it means, state that too. All this shows that you have done your part but are stuck now.
- Choose the right forum and use the right subject line. This is very important. Some forums are welcoming of "newbie" questions while others will either ignore the question or brush it off with a brusque "RTFM" (Read the Fine Manual) answer. Some forums are dedicated to certain Oracle specific products and asking about another Oracle product is considered off topic. The subject line is also very important–it should be a one-line summary of the problem. Don't use "Urgent" and "Please help"–many posters tend to disregard messages with such subject lines. As well, don't mislead with your subject line–keep it relevant to the message.
- Understand the rules and follow them. Some lists require you to reply directly to the OP (Original Poster) who will summarize the answers and the solution, while others require you to reply to the whole list. Writing directly to a person who is helpful on the list is also not considered good form and can be treated as SPAM.
- Use proper English, not short form and SMS-speak such as "U" and "Ur" instead of "you" and "your." Grammatically correct, sensible sentences and clear questions invite answers, sometimes good ones. Use plain text, not HTML and fancy stationery and images. Make it easy for the recipient who may have a slow network connection or not too much e-mail storage quota.

Have a look at www.catb.org/~esr/faqs/smart-questions.html for a great note on how to ask questions. However, as we emphasized before, there is no substitute for reading the manuals.

And Where Is Oracle Going?

Now that we have looked at how to improve your own standing and position within the world of Oracle, we need to take a brief look at where the world of Oracle itself is going. One of the main themes of Oracle Database 10*g* is the automation of many aspects of Oracle database administration, especially in tuning and management. Indeed, when Oracle Database 10*g* was released, one of the overriding messages was that "you no longer need a DBA." As a result, there has been an enormous amount of debate on whether this is true and what the role of the DBA will be in the future. While it is true that such automation and task simplification has reduced the manual labor required of a DBA, it is also true that such features have only made the Oracle infrastructure more complicated and raised the skill level required to manage Oracle databases. This has indeed shifted the focus of the Oracle professional from working on mundane, repetitive tasks to working on broader, more involved issues such as application integration, availability management and IT architecture planning. And that needs a solid, deeper understanding of the way the Oracle database works inside and out. We laid out how to gain that sort of understanding in the various sections above.

Conclusion

In this article, we listed a common set of skill requirements for DBAs and developers and showed you how to develop your hard skills and knowledge about Oracle, so that you can run this mad race while keeping up the pace. While we did mention the soft skills required, we deliberately kept away from recommending how to obtain those skills, since they are off-topic as far as *SELECT Journal* is concerned. Both types of skills are equally important and you should not neglect one for the other. Hopefully, we have given you tips and pointers in this article that will help crystallize what you already may know and help you along your career path, regardless of where you currently are!

About the Author

John Kanagaraj is a principal consultant with DBSoft Inc., and resides in the Bay Area in sunny California. He has been working with various flavors of UNIX since 1984 and with Oracle since 1988, mostly as a developer/DBA/apps DBA and system administrator. Prior to joining DBSoft, he led small teams of DBAs and UNIX/NT SysAdmins at Shell Petroleum companies in Brunei and Oman. He started his troubleshooting career as a member (and later became head) of the Database SWAT/Benchmarking team at Wipro Infotech, India. His specialization is UNIX/Oracle performance management, backup/recovery and system availability, and he has put out many fires in these areas along the way since 1984! He recently co-authored the book *Oracle Database 10g: Insider Solutions*, published by SAMS. John is also the associate editor of *SELECT Journal* and can be reached via e-mail at **ora_apps_dba_y@yahoo.com**.