**UNIT-III**

**Cloud Computing For Everyone**

**Cloud Computing for the Family**

Now that you know a little bit about how cloud computing works, let’s look at how you can make cloud computing work for you. By that I mean real-world examples of how typical users can take advantage of the collaborative features inherent in web-based applications We’ll start our real-world tour of cloud computing by examining how an average family can use web-based applications for various purposes. As you’ll see, computing in the cloud can help a family communicate and collaborate—and bring family members closer together.

**Centralizing Email Communications**

We’ll start our tour of cloud computing for families by examining how a typical family can use cloud-based tools to help improve communications between family members. That’s right, computing in the

cloud can help families improve their communications skills! The key here is to enable anywhere/anytime

access to email. Precloud computing, your email access was via a single computer, which also stored all your email messages. For this purpose, you probably used a program like Microsoft Outlook or Outlook Express, installed on your home computer. If you wanted to check your home email from work, it took a

bit of juggling and perhaps the use of your ISP’s email access web page. That web page was never in sync with the messages on your home PC, of course, which is just the start of the problems with trying to communicate in this fashion. A better approach is to use a web-based email service, such as Google’s Gmail (mail.google.com), Microsoft’s Windows Live Hotmail (mail.live.com), or Yahoo! Mail (mail.yahoo.com). These services place your email inbox in the cloud; you can access it from any computer connected to the Internet. The messages you receive are stored on the web, as are the messages you send, so nothing depends on a single PC. The joy of using web-based email is that it doesn’t matter what PC you use, your messages are always where they should be and they’re always in sync. It’s easy to check your home email from work, or from anywhere you happen to be—in a coffeehouse, at a hotel, or even in an airport terminal. Use your work PC, your home PC, your notebook PC, or a friend’s PC, it doesn’t matter; your messages are in the cloud, not on any of those PCs. Which means, of course, that you can now stay in contact with all your family members wherever you might happen to be. It’s easy for your spouse to send you a message even if she isn’t sure where you’ll be.

You can check your web based email whether you’re in the office or on the road. Just make sure you’re connected to the Internet, and then open your web browser and log in to the Gmail or Windows Live Hotmail or Yahoo! Mail website. Go to your inbox and you’ll find your spouse’s message; reply as necessary and await your spouse’s

response. Even if you change locations or computers, your spouse’s message remains in your inbox, and your reply remains in your sent messages folder.

**Collaborating on Schedules**

Of course, a lot of family communication concerns schedules. Are we free on Friday night? When is Junior’s next soccer game? When is Amber’s dentist appointment? When is the dishwasher repair guy coming? Are we free to attend the youngest boy’s choir concert at school? When are we all free to take

our summer vacation? The bigger your family, the busier things get—and the more difficult it is to

keep everybody’s activities straight. Although you could try to keep a paper based schedule or calendar, it’s tough to keep such a thing completely up-todate— and, of course, you can’t consult it when you’re not at home. A better solution is to use a web-based calendar, such as Google Calendar (calendar.google.com) or Yahoo! Calendar (calendar.yahoo.com). Not only is such a calendar accessible to anyone, anywhere, any time over the web, it can also be configured so that everyone in your family can add their own events. When your spouse adds her Thursday evening book group meeting to the calendar,

that scheduled event automatically appears on your version of the calendar, as well as what all the other members of your family see. All you have to do is create a public calendar and authorize access for all the

members of your family. Then, when they log in to the calendar site, they see all currently scheduled events and can add new events of their own. And, when you go to add an event, you’ll quickly see whether that day and time are free or busy. At that point, it’s your call whether you add a conflicting appointment or reschedule the event you wanted to add. Another great thing about web-based calendars

is that you can access your schedule from anywhere. At the office and want to know whether you can work late on Thursday night? Just log in to your web based calendar and see whether that time is free. On the road and want to see when the next PTA meeting is? Just log in to the Internet and use your web browser to see what the calendar says. And any changes you make, from wherever you are, are registered

in the cloud; your other family members immediately see the latest version of the calendar.

**Collaborating on Grocery Lists**

Here’s one you might not have thought of. If you’re part of a busy family where both spouses work, you might not be able to manually coordinate your grocery lists. Your spouse might need shampoo, but if she didn’t tell you before you left for work, you can stop at the grocery and get everything but what your spouse needs. Likewise if you have a craving for cookies and cream ice cream; if your spouse doesn’t know this, your craving will go unfulfilled the next time she stops at the supermarket.

The solution here is to use a web-based word processing program to manage your joint grocery lists. Use a program like Google Docs (docs.google.com) to create a document, and then authorize access for both you and your spouse. Enter the items you need onto the list, one line at a time, and have your

spouse do the same. Keep the list going for the week or so it takes you to get to the grocery, opening

your web browser and adding new items as they occur to you, whenever and wherever they occur to you (as long as you have web access, of course). At the end of the week, when you’re ready to go to the supermarket, connect to the Internet and print out a copy of your grocery list on your home or office

printer. It’s that simple. Of course, you don’t have to limit access to your grocery list to just you and

your spouse. Many families also authorize their children to access their online lists, thus making everyone in the family happy—and inflating your grocery bill with all sorts of unhealthful snack foods. (But at least everyone will be happy!).

**Collaborating on To-Do Lists**

A grocery list is just one type of to-do list. If you have a lot of household chores and repairs, it’s likely that you have a larger to-do list for your household. And, if your household is like mine, that list growsevery day! You and your spouse can collaborate on your to-do list by using a web-based word

processing application, as we just discussed, or you can use a dedicated webbased planning program. These applications, such as Zoho Planner (planner.zoho.com) let you create multiple to-do lists on the web, which you and your spouse can both add to from any computer, at any time. You can even set email reminders to refresh your memory when a task is due. Add your tasks one at a time, and then mark

them off as they’re completed. If these applications are too advanced for your needs, consider using a simpler web-based to-do list application. These applications, such as Remember the Milk (www.rememberthemilk.com) and Ta-da List (www.tadalist.com), operate more like a simple notepad-based list. Some even let you add tasks via email or access the list when you’re on the go with your mobile phone.

**Collaborating on Household Budgets**

If you’re like me, you don’t like surprises—especially financial ones. I like to keep a rather tight cash flow budget for my family, so that I know what’s coming in and what’s going out on a weekly basis. Problems occur when my wife has a big expense that I didn’t know about—and didn’t budget for.

You can minimize these types of unwelcome surprises by collaborating with your spouse on your household budget. This is easy enough to do when you use a web-based spreadsheet program, such as Google Spreadsheets (part of the Google Docs suite, at docs.google.com), to create your budget; you and

your spouse can then enter budget items separately, when it’s convenient for both of you. Remember an upcoming expenditure while you’re sitting in a meeting at work? Just go online and add the expense to your web-based budget. Find out about a necessary repair when you’re watching TV? Just walk over to your home PC, log in to the web-based spreadsheet, and enter that expense. Budgets get a lot easier when you can update them any time and anywhere— and when both spouses can do so. Of course, budget collaboration can also be interactive. Perhaps you see a new flat-screen TV in your future, and enter that item into your web-based budget. Your spouse might disagree about the item’s importance or cost. She can just as easily go online and lower the budget for that item—or delete it completely! So just because you can put together a budget online doesn’t mean you still don’t have to talk about it. Remember that collaboration sometimes involves compromise.

**Collaborating on Contact Lists**

You have your friends, your spouse has her friends, and both of you have business contacts and acquaintances that you need to keep track of—even if you only reach out to them once a year or so. If your family is like mine, this describes the list we use for our annual holiday cards, which for us

approaches a hundred names long. Managing your family’s contact list isn’t always easy. Yes, you have your most-contacted contacts stored in Microsoft Outlook or some similar program, but that list of names exists only on one computer. Your contacts are on your PC, your spouse’s contacts are on her PC, and your lists of work contacts are probably on your work computers. How do you merge and manage all these names—in time to address and mail your cards before the holidays? A good solution for managing contacts from multiple family members is to use a web-based program for contact management. There are few different ways to approach this. First, you can use your web-based email program (Gmail, Yahoo! Mail, and so on) as a contact management program. All of these programs let you create and store complete information about your contacts—email address, postal address, phone number, and so forth. The only problem with using this approach, however, is that both you and your spouse have to use the same email program and the same email address. So, it might not work for you. A more robust and individualized solution is to use a dedicated web-based contact management program. Some of these programs, such as MyEvents (www.myevents.com) are targeted at home users and ideal for holiday card

lists; other programs, such as Highrise (www.highrisehq.com) will manage your holiday card list and do a lot more. These latter programs include the robust customer resource management (CRM) features needed for business and sales force management. Whichever type of program you decide to use (or, perhaps, you just use a web based spreadsheet program, with one row per contact), you need to authorize

access for both you and your spouse. This way you can both import your existing Outlook or Windows Address Book contacts, as well as add new names when and where they come up. Maybe you meet somebody new when you’re on a business trip, or your spouse runs into an old friend at the local coffee house. All either of you need to do is log onto your web-based application from wherever you are and add the new person’s name and contact info. Then, when it comes holiday time, one of you accesses the main list and prints it out or uses it to print mailing labels. Voilà! Your holiday list is finished.

**Collaborating on School Projects**

You and your spouse aren’t the only family members who can benefit from the collaborative nature of web-based applications. Consider your school-aged children, and all the school projects they have to do. Many of these projects are group projects, and there’s no easier way to collaborate on a group project

than to use web-based applications. Let’s say that little Timmy is assigned to a group of students that has to put together a presentation on Mark Twain. These days, most grade school students know how to use Microsoft PowerPoint, so something similar is required for the final presentation. Instead of driving your kids around to each others’ houses, they can collaborate over the web from their own homes, saving you

time and gasoline. There are several decent web-based presentation programs, but one of the most popular (probably because it’s free) is Google Presentations, part of the Google Docs suite of programs (docs.google.com). It’s easy for each member of the team to add to the presentation as they see fit. When one member adds a new slide, other team members see that slide immediately on their own computer

screens. To facilitate communication during the span of the project, your kids can use a web-based email program, such as Gmail, to send messages back and forth from their own computers. Even better, sign them up to an instant messaging service, such as AOL Instant Messenger (www.aim.com) or Yahoo! Messenger (messenger.yahoo.com), so that they can text each other in real time. If the project is particularly complicated, it might help for the kids to coordinate their schedules for all the pieces and parts. Basic project management can be accomplished in a web-based calendar program, such as Google

Calendar (calendar.google.com), or in a simple planner program, such asZoho Planner planner.zoho.com). For more complicated projects with a lot of individual tasks, consider using a dedicated project management application, such as Base camp (www.basecamphq.com). Whatever application they use, the kids should break their project down into all its component parts, and assign each part to an individual— along with a due date. Of course, most projects require a written component in addition to the live presentation. For this, sign the kids up to web-based word processing program. If

they’re already using Google Presentations, they might as well use Google Docs for this purpose. Again, each of the students can write their own sections online and have the master document updated automatically and immediately.

 Just make sure one of the kids remembers to print out the report whenit’s done! When it comes time to give the presentation, the students have a few options. If they have a live Internet connection in the classroom, they might as well use Google Presentations to display the final presentation. If not, they can save the Google presentation in PPT format, and use the classroom’s copy of

Power Point to give the live show.

**Sharing Family Photos**

Here’s one thing most families have lots of: photographs. In today’s digital world, the photographs are likely digital ones, capable of being shared via email or uploaded to the web. When you have photos you want to share with a lot of family and friends, the best course of action is to use a web-based photo sharing service. There are lots of these sites available, from noncommercial sites like Flickr

(www.flickr.com) to sites that like to sell you prints and other products, such as Shutterfly (www.shutterfly.com). Any of these sites let you create your own online photo albums and then upload your digital photos to these albums. You then send the album’s URL to your friends and family, and they can view all your photos online—either one at a time or in an online photo slideshow. Many of these sites go the next step and let visitors order prints of the photos you upload. (That’s how they make money, after all; the photo hosting is typically free.) When your Aunt Edna sees a photo she likes, it’s a simple matterto check that photo, click the “order prints” button, provide her credit card number, and have prints made and delivered to her door. Of course, not every photo you take is a winner. Many digital photos can benefit greatly from simple photo editing. Although some photo sharing sites offer modest photo editing capabilities, you’re probably better off using a dedicated web-based photo editing application, such as Adobe’s Photoshop Express (www.photoshop.com/express/). These programs not only offer easy-to-use

photo editing tools, but also help you manage the photos stored on your own PC. And, because they’re based in the cloud, you can access these programs (typically for free) from any PC anywhere you have an Internet connection.

**Cloud Computing for the Community**

Cloud computing isn’t just for home users. It has tremendous benefits for the entire community, from

neighborhood groups to sports teams to school organizations. Any time any group of people in the community need to communicate and collaborate, web-based applications are the way to go.

This chapter, therefore, takes a look at a few typical community uses of cloud computing. After examining the webbased approach, it’s hard to imagine going back to the old way of doing things.

**Communicating Across theCommunity**

Alliteration aside, one of the key components of any community collaboration is communication. This isn’t as easy as it sounds, because many community activities are undertaken by people in their spare time—outside of normal work and home activities. Therefore, they might be communicating during office hours on their work computer, after hours on their home computer, or during any spare moment wherever they may happen to be. That makes using traditional desktop email, such as Microsoft Outlook or Windows Mail, problematic. The better solution when communication on community issues is to use a

web-based email program, such as Gmail (mail.google.com), Microsoft Windows Live Hotmail (mail.live.com), or Yahoo! Mail (mail.yahoo.com). These programs can be accessed from any computer connected to the Internet. You use your web browser to send and view email messages hosted on the

web. You can send and receive messages at work, at home, or from wherever you happen to be. Everything you send and receive is stored in the cloud, accessible from anywhere at any time.

Some community activists go so far as to create a unique web-based email account just for their community communications. This way they don’t confuse personal emails from those involving their community activities.

**Collaborating on Schedules**

When it comes to coordinating multiple individuals or families in a community activity, you have your work cut out for you. Whether it’s a youth sports team, community organization, school event, or some community event, trying to line up who’s free and who’s not on a given evening takes a lot of effort—unless, that is, you’re using web-based scheduling tools.

**Sports Team Schedules**

Here’s one of the most common community activities: youth sports. Maybe your son is on an intramural football team, or your daughter is into youth soccer.

 Whatever the age, whatever the sport,there’s a lot of activities that need to be scheduled—practices, home games, away games, team meetings, you name it. Multiply the number of players (and coaches) on each team times the number of events, and you see the complexity; it gets even worse if you’re trying to manage events for an entire league. How best, then, to juggle all the schedules of so many people and events? The best way is to use a web-based calendar tool, such as Google Calendar (calendar.google.com), Yahoo! Calendar (calendar.yahoo.com), or Calendar Hub (www.calendarhub.com). Just create a public calendar and provide the URL to all the team members. After you add all your team activities to the calendar, team members simply have to log in to see what’s coming up this week and next. Also good are dedicated sports team website builders. These sites offer tools designed specifically for sports teams, including home pages complete with schedule, roster, player profiles, box scores, and the like. Most of these services even design your site using your team colors and logo.

There are several of these web-based applications, including eteemz (www.eteemz.com), League Athletics (www.leagueathletics.com), LeagueLineup ([www.leaguelineup.com](http://www.leaguelineup.com)), and TeamSnap (www.teamsnap.com). Figure 5.1 shows a typical LeagueAthletics site, for the Lakeville (Minnesota) Baseball Association.



**FIGURE**

*The Lakeville Baseball Association uses League Athletics to manage its activities on the web.*

**School Schedules**

Web-based calendars are also ideal for keeping track of various school schedules. Whether it’s homework assignments for a particular class or a school wide events schedule, it’s easy for a teacher or school to post that schedule on a web-based calendar. Make the calendar public (but make sure only authorized

personnel can post new events), and then provide the calendar’s URL to all students and parents. Assuming that all families have Internet access (it helps to check this first), there should be no excuse for missed homework or absence from key events.

**Community Group Schedules**

Any community group can benefit from organizing their activities via a web based calendar. Want to schedule practices for a community theater production? Announce meetings for your local school board? Organize bingo nights for your church? Any and all of these group activities can easily be managed

online, in the cloud, using a web-based calendar.

**Event Schedules and Management**

You can also use web-based calendars to post dates and schedules for specific public events, such as school plays, or for all events in a given community. Although any web-based calendar program can do this job, as well, some event-specific applications are worth noting. For example, Zvents (zvents.com) is a web search engine for local events. Upload your event schedule into the Zvents database, and then anyone in your area can find out what’s happening in the coming days and weeks. Figure shows a typical Zvents community home page. Users can also search for events by type, location, and date. Also interesting is the suite of event management software from ServiceU (www. serviceu.com). Included in this suite is the

EventU application, which offers event, resource, and facility scheduling for organizations small or large.



Searching for local events online with Zvents.

**Collaborating on Group Projects and Events**

Community groups often have a lot on their plates. Someone has to schedule the next fundraiser, someone else needs to print up flyers, someone else is in charge of recruiting new members…there’s just a lot of stuff to do! How does your community group manage all these activities? In the new world of cloud computing, the best way is with a web-based application— which anyone in the group can access.

**Collaborating on To-Do Lists**

Let’s start with simple task management, in the form of the old-fashioned todo list. These are web-based lists that multiple group members can access from any web browser. Tasks are entered (complete with due date) and checked off when completed.

Some of the more popular online to-do list

applications include Bla-Bla List

(www.blablalist.com), Remember the Milk

(www.rememberthemilk.com), Ta-da List

(www.tadalist.com), Tudu List

(www.tudulist.com), and Voo2Do

(www.voo2do.com).

All of these applications are simple enough for even the most techno-phobic group members to use. Some even let you add new tasks via email or access your lists via mobile phone.

**Collaborating on Task Management**

For managing more complex tasks, a simple to-do list application might not cut the mustard. Instead, consider using a web-based task management application that lets you manage the multiple pieces and parts of large projects. Basic task management can be accomplished with applications such as HiTask (www.hitask.com) and Zoho Planner (planner.zoho.com). For the most complicated projects, consider using a dedicated project management application, such as Basecamp (www.basecamphq.com) or Goplan

(www.goplan.com). Whichever option you choose, you must break your project down into all its component tasks, set a due date for each, and then assign each task to a specific group member. Group members can then access the application online from their own computers and update the project with

their own individual progress.

**Collaborating on Event Management**

When you’re putting on a big event such as a concert or conference, you have a whole new set of challenges to face. Not only do you have to manage the tasks involved with putting together the event, you also have to handle attendee registration, event marketing, ticket sales, and the like. It’s a massive

effort—made somewhat easier by web-based event management tools. With web-based event management applications, the cloud hosts everything you need to schedule and market your events, as well as handle registration, payment, and other important tasks. For example, you can create an online event calendar so that attendees can learn about and sign up for future events via the web; offer web-based event registration and payment; manage requests for hotel rooms, airline flights, and car rentals; and check in attendees live onsite via a notebook PC with Internet connection. Most of these apps also offer detailed task and budget management functions. These are very robust applications, capable of handling every last detail over the web. Some of the most popular of these apps include Cvent

(www.cvent.com), RegOnline (www.regonline.com), and ViewCentral (www.rmkr.com/viewcentral). Unlike some other web-based apps, these aren’t free; you have to pay for the power you need to manage the details of your particular event.

**Collaborating on Event Marketing**

We briefly mentioned event marketing in the previous section. That’s because most event management applications also handle basic event marketing. But when it comes to promoting your community events, you want to go beyond the basics to more creative forms of marketing. For example, you may

want to create a brochure or flyer to announce your event. Fine and dandy, but everybody in the group (including all the community bigwigs) wants input on the final piece. This may have been difficult in precloud days, but now you can use a web-based application such as Google Docs (docs.google.com) to create your piece and make it available online for everyone to see and comment on. (Just remember to dole out read-only authorization to these interested parties; you don’t want everybody in the group going

online and making changes to what you’ve just created!) Naturally, you can also use web-based local search sites, such as Zvents (www.zvents.com), to post announcements of your community events. You

may even want to use cloud-based social media sites, such as Facebook and MySpace, to promote your event online. And, after the event, you can post pictures of the event on community photo-sharing sites, such as Flickr (www.flickr.com). It’s all possible because of the cloud!

**Collaborating on Budgets**

Every event, small or large, comes with its own set of costs. And with community events, those costs are often managed by a group of people, each responsible for a specific operation or group of operations. For simple events, you can collaborate on your budget using web-based spreadsheet programs, such as Google Spreadsheets (part of the Google Docs suite, at docs.google.com). Just create a private spreadsheet, authorize access for each member responsible for the budget, and then start adding data online. When everyone has finished entering numbers for their line items, the group member

responsible for the entire budget can log on and do her thing. For larger or more complex events, you may want to use the budget function available in most event management programs. You may also want to consider some of the accounting applications in the Salesforce.com AppExchange (www.salesforce.com/appexchange/). Some of these web-based apps are relatively low-priced, which is an attractive asset for most cash-strapped community

groups.

**Cloud Computing for the Corporation**

Businesses have been some of the earlier adopters of cloud computing. Companies large and small recognize the cost savings and productivity enhancements of using web-based tools to manage projects, collaborate on documents and presentations, manage enterprise wide contacts and schedules, and the like. Cloud computing lets companies do more with limited budgets. In addition, web-based applications have proven a boon for telecommuters and road warriors. Instead of being tied to documents and applications hosted on their office desktops, workers can now access what they need from any location— in the office, at home, or on the road. With all that in mind, let’s look at some of the many ways that companies and their employees can use cloud computing.

**Managing Schedules**

If you work in a large company, you know what a hassle it is to schedule even simple meetings. One person is free on Tuesday at 9:00, but another is out of the office, and yet other attendee is already booked for that time slot. Plus, you’re not even sure which meeting room is free at that time. You end up

sending a flurry of emails back and forth, trying to find the one spot in everybody’s schedules that is free. There has to be a better way. That better way is web-based scheduling. Everyone places his or her schedule in the cloud, which then enables the meeting’s organizer to easily see who’s available when. The cloud-based app finds the best time for all involved and schedules the meeting. No more emails, no more phone calls; it all happens automatically, in the cloud. Here’s how it works. Let’s suppose you need to schedule a meeting sometime next week with a dozen different attendees. You punch in the details of the

meeting and the desired attendees, and the scheduling app finds the first available timeslot when all attendees are free. Alternatively, the app might have to pick a timeslot when the maximum number of people can attend. This kind of “best case scenario” scheduling might be the only way to get your

meeting on the calendar in a reasonable period of time. Web-based scheduling programs let you schedule both in-person meetings and teleconferences with attendees from multiple locations. You’re not limited to

just those people located in your office; you can work with the schedules of people around the country and even in different firms. Of course, much of this can be accomplished with simple web-based calendar

programs, such as Google Calendar (calendar.google.com) and Yahoo! Calendar (calendar.yahoo.com).

To take advantage of the more advanced automatic scheduling features, however, you need to use an industrial strength scheduling application, such as AppointmentQuest (www.appointmentquest.com), hitAppoint (www.hitappoint.com), and Schedulebook (www.schedulebook.com). Naturally, these

enterprise-level apps cost more to use than the free web-based calendars; expect to pay anywhere from $20 to $200 subscription fees per month.

**Managing Contact Lists**

Salespeople have to deal with lots and lots of contacts. Not only is their address book full, they need to know when to contact certain clients, when follow-up calls are necessary, what the boss needs them to do today, and the like. This is difficult to do from a simple desktop contact management program, such as Microsoft Outlook, which merely acts as a storehouse for names and contact info. It’s also difficult to do when you’re on the road and need access to all your contacts. The solution, of course, is a web-based contact management or customer resource management (CRM) application. These programs are tailored to the needs of a busy salesperson and come complete with features such as activity scheduling, appointment reminders, email templates, and the like. Among the most popular of these applications are BigContacts (www.bigcontacts.com), Highrise (www.highrisehq.com), and the marketleading

Salesforce.com (www.salesforce.com). Many of these apps include additional functions of use to large sales departments, including expense account management, sales activity reports, and various team management features. Using a web-based contact or CRM application can be as simple or as complex

as you make it. You might need nothing more than access to a large list of contacts from any location; that’s the simple usage. On the other hand, you might want to customize the program so that you’re automatically flagged each day with a list of accounts to contact (and for what purposes). Some

communication can even be automated, via the use of scheduled emails. Imagine the typical day on the road for a traveling salesperson. You wake up in your hotel room, turn on your notebook computer, and log in to the hotel’s free wireless Internet connection. Using your web browser, you access the CRM

application’s website and look at today’s list of tasks. You click a button to launch a list of scheduled emails to be sent to selected clients, and then scroll through the list of phone calls you need to make today. If you need more information about a particular client, just click that contact’s link. Everything

you’ve entered about that client is stored online and instantly accessible. You can even click a link to view driving directions and a map to the first client you need to visit. And, to see how you’re doing against this month’s quota, you end the session by creating a detailed sales tracking report. Naturally, the more detailed your needs, the more features of the application you’ll use. The key is that everything is stored and managed in the cloud so that you—and your sales manager—can access important contact information from anywhere at any time; all you need is an Internet connection.

**Managing Projects**

Most companies at one point or another have at least one big project going on—the type of project that involves multiple employees from multiple departments and perhaps multiple locations. Projects of this type have tons of individual pieces and parts, each of which dependent on the completion of a previous task. Keeping track of all the individual tasks—who’s doing what and when—can take a gargantuan effort. That effort is made easier with the use of a web-based project management application. Project members can log in from any location to access the project’s master file; they can add or delete tasks, mark tasks as complete, enter detailed billing information for individual tasks, and so forth. And because

the project is hosted in the cloud, every team member sees the same Gantt or PERT chart and the same list of tasks, instantly updated when any other member makes an edit. Many project management applications include additional functions useful in the management of group projects. These features may include group to-do lists, web-based file sharing, message boards, time and cost tracking, and so

on. And the most robust of these apps lets you manage multiple projects simultaneously; users can schedule their time across multiple projects and make sure they’re not doing two things at once.

As you might expect, these are not simple applications; they can’t be, given the enormity of many enterprise-level projects. Therefore, they’re expensive to license and often difficult to learn how to

use. The most popular of these apps include AceProject ([www.aceproject.com](http://www.aceproject.com)), Basecamp ([www.basecamphq.com](http://www.basecamphq.com)), onProject (www.onproject.com), and Project Insight ([www.projectinsight.com](http://www.projectinsight.com)).

**Collaborating on Reports**

When you work for a larger enterprise, chances are you get to write a lot of reports—and these days, the reports you write are often in collaboration with one or more other employees. For example, you may need to put together a monthly progress report that includes input from the company’s marketing, sales, and finance departments. Or perhaps you’re preparing a business plan that includes sections from all the company’s departments, or a company overview that includes bits and pieces from each and every office location. In short, you need some way to collaborate with other staffers when writing the report.

Fortunately, online collaboration is one of the chief benefits of cloud computing. Instead of emailing Microsoft Word documents across the company, opt instead for a web-based word processing program, such as Google Docs (docs.google.com) or Zoho Writer (writer.zoho.com). With one of these pplications, everyone contributing to the report can access the same master document,

online and in real time.

 When someone from one department adds his section to the document, all the other staffers immediately see the update. The best web-based word processors work in conjunction with full-fledged webbased office suites. Google Docs, for example, encompasses word processing, spreadsheet, and presentation functions. Zoho’s suite of apps includes similar word processing, spreadsheet, and presentation functions—as well as a neat little project management module. Collaborating on a web-based document is surprisingly easy. Most projects start with the team leader creating a new document online and giving it a bit of form—some sort of content and style template. The leader then assigns sections of the report to appropriate individuals, and provides the document URL to each individual. These contributors then work on their own sections of the report, logging in to the master document via their web browsers. When all the individual sections are complete, the project leader then looks at the document as a whole, editing for consistency and making sure that all appropriate data is included. Most online word processing applications let you embed photos and other graphics; you may also be able to include spreadsheet files as part of the master document. The result is a quality document that reflects the true collaborative nature of the project.

**Collaborating on Marketing Materials**

Marketing is another area that benefits from cloud-enabled collaboration. Putting together a catalog requires data from several different departments. For example, effective direct mail campaign benefits from marketing, sales, and fulfillment input. Online PR needs participation from marketing, product,

and technical staff. When it comes to creating marketing materials, perhaps the best approach is

to use a combination of web-based applications. Naturally, web-based email facilitates communication between departments; you can also benefit from web-based project management apps, to help keep all the pieces and parts in line. The marketing materials themselves can be created using web-based word

processing applications. This puts the draft materials on the web, for everyone on the team (including appropriate senior management) to see, comment on, and even contribute to. After everyone’s had his or her say, you can finalize the document and send it to your printer or website.

**Collaborating on Expense Reports**

If you spend your company’s money, you have to account for it. That’s the theory behind the reality of expense reports, the bane of all free-spending employees. It’s not too difficult to create an expense report using your favorite spreadsheet software, but that isn’t always the best way to go. The paper or electronic

report must then wend its way through your company’s various levels of approval: your boss, your boss’ boss, the accounting department, the HR department, and who knows how many more people before the accounting folks finally cut you a check. A better solution for many companies is to put the expense

reporting function on the web. Employees from any location can access the website to enter their expenses; it can even be accessed while employees are still traveling, with no need to wait for reimbursement until they get home. Then the web-based expense report gets electronically circulated to everyone who needs to approve it or, more likely, a link to the web-based report is emailed instead. Finally, after the last approval is entered (electronically, of course), the accounting department is notified and a check is cut. No costly paper trail is generated, no documents spend days waiting in someone’s inbox, and the entire process is expedited—which means employees get reimbursed faster. Another benefit of web-based expense management is that you can quickly and easily ensure that all employees follow your company’s rules and regulations. Just add your own rulebase into the app’s management console, and employees will have to follow your company’s policies when entering their expenses. Some of the most popular enterprise-level web-based expense reporting applications include Concur (www.concur.com), ExpensAble (www.expensable.com), ExpensePoint (www.expensepoint.com), and TimeConsultant www.timeconsultant.com). Many web-based office management and workforce management applications also include expense reporting modules.

**Collaborating on Budgets**

While we’re on the topic of money, there’s no bigger project at many companies than creating next year’s budget. Every department is involved, with managers required to submit complete department budgets (the creation of which involves several departmental employees) that are then rolled up by the finance department into a complete company budget. That budget is seldom approved as is, of course, which means adjustments are then rolled back down the line; the departments make the required changes and resubmit their budgets, which are then rolled back up again to the final company budget. It’s a long and involved process. Traditionally, each department works on its own budget spreadsheet, which is then emailed to the finance department for consolidation with those of other departments. Although that’s more efficient than moving sheets of greenbar paper around the office, it’s not as efficient as it could be.

Cloud computing offers a better approach. Instead of working on separate spreadsheets that are later consolidated, you can use a web-based application to create a single budget document for all departments on the web. Each department head enters his own budget data. The rolled-up budget is then created in real-time. When the big bosses need to slash certain expenditures, those changes are immediately reflected in the sections or pages for each individual department.

 This type of online budgeting can be accomplished with a simple web-based spreadsheet, such as Google Spreadsheets (spreadsheets.google.com) or with a dedicated enterprise-level budgeting application, such as Host Budget (www.hostanalytics.com/budgeting-planning-software.html). In addition, many office management and project management applications include budgeting modules, so that may be an option for your particular firm.

**Collaborating on Financial Statements**

Assembling a monthly or year-end profit-and-loss statement or income statement is like a budget, but from the other side—that is, it requires input from all departments, but it measures what actually happened rather than making a projection. Given the fast-paced nature of financial reporting these days, the accounting department needs final figures from all relevant department as soon as possible after month-end or year-end close. Instead of waiting for each department to mail or email its results, the entire process is accelerated when each department enters its data directly into a master spreadsheet. Because this spreadsheet is housed on the web, even departments in remote locations can have their data recognized as soon as they enter it. Although you could use a web-based spreadsheet program, such as Google Spreadsheets, for this task, a better approach might be to invest in a web-based accounting program. For example, Host Consolidator ([www.hostanalytics.com/](http://www.hostanalytics.com/) consolidation-reporting.html) bills itself as a web-based financial consolidation, analysis, and reporting application. Authorized individuals can enter appropriate data from any location, using any web browser. Once month-end or yearend data has been entered, the application automatically generates a variety of financial reports, including balance sheet, income statement, cash flow statement, and the like.

**Collaborating on Presentations**

Every company today sees more than its fair share of PowerPoint presentations. Want to introduce a new product to the sales force? Want to discuss HR hiring trends? Want to present last month’s financials to senior management? Then you need to put together a snazzy presentation—and show it from your laptop.

The problem with producing a large presentation is that you often need input from more than one person, department, or office. If you’re presenting company financials, for example, you need to get those from each individual department. If you’re presenting to your sales force, you might need to assemble product information from multiple divisions. If you’re giving an HR presentation, you may require input from the managers of all of your company’s physical locations. As with most collaborations of this type, a collaborative presentation is problematic.

Let’s face it, it’s just plain difficult to get everyone involved to submit work on time—and in the proper format. Anyone in charge of such a project has probably already gone bald from tearing his hair out. Fortunately, cloud computing makes collaborating on presentations a whole lot easier. By creating a single presentation document, you don’t have to worry about consolidating information from multiple documents. And because that document is located in the cloud, any contributor can edit directly into the master document from any web browser; the project leader controls the look and feel of the presentation by applying a universal style or theme. The most-used web-based presentation program today is Google Presentations, part of the Google Docs suite (docs.google.com). This application includes a lot of PowerPoint-like features, and can even import and export files in PowerPoint’s format. Other online presentation programs include Preezo (www.preezo.com) and Zoho Show (show.zoho.com).

**Presenting on the Road**

Here’s an added benefit in presenting from the cloud: You can give your presentation anywhere without taking it with you. That’s right, you don’t have to bother loading a huge PowerPoint file onto your notebook PC’s hard disk. Instead, when you get to your destination, connect your notebook to the

Internet, open your web-based presentation, and give that presentation in real time to your local audience. In fact, you don’t even have to take your notebook with you. You can use any computer at the host location to access and launch your presentation. Even better, many web-based presentation programs let you give your presentation without even being there! That’s right, you can give a remote presentation—

at multiple locations at the same time—by having all participants log in to the same web-based spreadsheet. Make sure they have read-only access, dial everyone into a conference call (so that you can provide the audio walkthrough), and then go into presentation mode. All attendees at all locations

will see the same presentation, and you don’t even have to buy a plane ticket. Some of these applications include additional features that add functionality to remote presentations. For example, Zoho Show includes integration with Zoho Chat, which lets you have real-time text-based interaction with interested

participants. It’s like adding a chat room to your presentation; participants ask you questions and you respond, in real time, during the course of the presentation. Then you have web-based applications such as Cisco’s WebEx ([www.webex.com](http://www.webex.com)) and Microsoft Office Live Meeting (office.microsoft.com/en-us/livemeeting/). These are hosted applications that let you stage live meetings and presentations—

called *web conferences*—over the Internet. All group members log onto a designated website and then view the presenter’s presentation or participate in real-time audio and video discussions. Granted, a web conference of this sort may be expensive overkill, but it’s a very effective way to get the job done—

especially if you want live feedback on what you’re presenting.

**Accessing Documents on the Road**

While we’re talking about using web-based applications on the road, remember that any application or document housed in the cloud is accessible from wherever you may be. All you need is a computer (and it doesn’t even have to be your computer) and Internet access. Log in to the appropriate site, enter your username and password, and then open whatever document you need. It’s the same document you worked on back in the office, so you don’t have to worry about remembering to synchronize files between computers. Make your changes on the road and you’ll see them when you get back to the office. You

can even print your documents remotely, if your computer is connected to a printer or you have access to a hotel or conference hall business center. This is one of the great things about cloud computing; it doesn’t matter where you are. You can be in the office, at a trade show, or visiting a client in another city, and you always have access to the same applications and documents. You don’t have to worry about taking the right copy of a document with you, or making sure you have a compatible version of the software program loaded on your notebook PC. You always use the same apps, and you always access the same docs. As long as you have a computer and Internet access, it’s just like you were in the office.