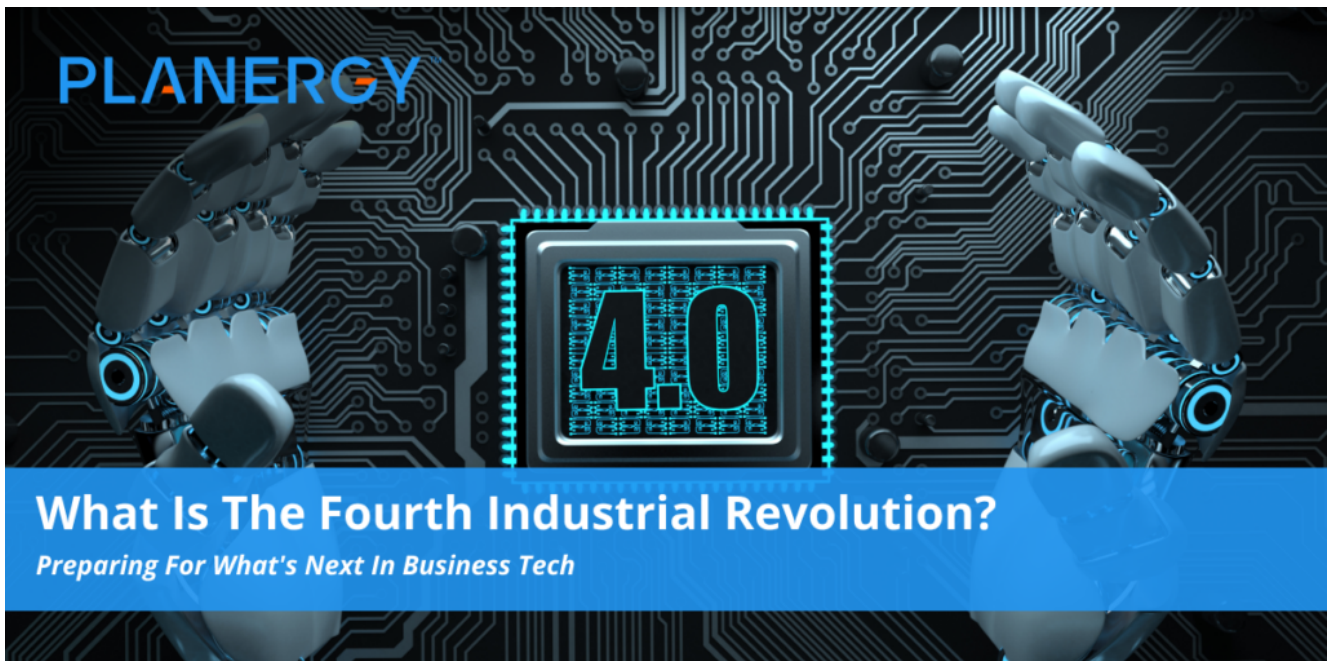


What Is The Fourth Industrial Revolution?



Before the advent of mass production, few could imagine a world where everyday goods were cheap, plentiful, and available in every market across the globe.

The same could be said for the average person working in the candlelit world before electricity and assembly lines, or the punch-card-and-paper-pushing denizens of the pre-digital era.

Technology has a way of creating shockwaves of disruptive transformation in our society, and in the early decades of the twenty-first century, we find ourselves at the edge of a fourth industrial revolution, poised to change our understanding of how we conduct our business—and our lives—forever.

New technologies, packed with both the potential for powerful positive change and a few corresponding potential perils for the underprepared, are already transforming commerce, entertainment, and existence itself.

By exploring the history of technological change, and how our societies have adapted in the wake of disruptive transformation, you can better prepare your company to thrive in the world of the fourth industrial revolution.

The Fourth Industrial Revolution: An Overview

Before you can assess the potential impact of the fourth industrial revolution (also called Industry 4.0) on your life and business, it's critical to understand how we got here.

The foundations for today's digital technologies like quantum computing and machine learning were laid in previous industrial revolutions.

The First Industrial Revolution (Late 18th Century/Early 19th Century)

The original Industrial Revolution introduced the concepts of standardization, basic process optimization, and mass production to a world where goods were usually made by hand, using methods that might vary from valley to valley or even craftsperson to craftsperson in the same village.

Animal power and steam engines created the capacity to produce at levels unimaginable using human labor alone, and mass production became the new standard operating procedure for producing everyday goods.

The Second Industrial Revolution (Late 19th Century/Early 20th Century)

Steel and electricity were the parents that gave birth to the Second Industrial Revolution.

Better materials, more effective mechanization, and greater production power from improved energy sources, combined with refinements in efficiency, were the perfect environment for technological innovations like automobiles and trains to thrive.

As markets and supply chains expanded to global proportions, meeting growing demand was made possible by the introduction of the assembly line, created and perfected by canny engineers on the payroll of automobile tycoon Henry Ford.

The Third Industrial Revolution (Mid-20th Century)

In the 1950s, analog and mechanical technologies gained extra power from the addition of computerization to the production process.

Software transformed the way in which “the business of doing business” was conducted, and laid the groundwork for future technologies that would seek to remove human error and tedium from repetitive and predictable tasks.

During the third industrial revolution, humans began to recontextualize ourselves, reserving more and more creative, administrative, and strategic tasks that required a human touch for ourselves, and shifting the “drudgery” to the tech tools we’d invented to ease the load.

The Fourth Industrial Revolution, AKA Industry 4.0 (Late 20th Century-21st Century)

They say hindsight is 20/20, and looking back, it’s easy to draw a line from mass production to enhanced energy sources to important conceptual shifts in process efficiency to see how we built the world we currently live in, even though today’s world was as unimaginable to an 18th-century craftsman as the life of a 23rd century worker is to us today.

That said, we *can* look at the digital technologies that define the Fourth Industrial Revolution and understand the potential they have to transform our lives in new and exciting ways.

If previous iterations were about transforming work through technology, Industry 4.0 is about blurring the lines between our digital and biological worlds.

Artificial intelligence (AI), especially as expressed by machine learning, can replicate and mimic human intelligence, supporting new technologies as diverse as autonomous vehicles, customer support chat bots, public-facing social media management applications, and virtual companions that grow more sophisticated and human-like as they learn.

Automation technology works hand-in-glove with AI to effectively remove humans

from the most basic tasks, increasing security, accuracy, and efficiency while freeing team members to apply their human skills, intuition, and creativity to more valuable projects and processes.

Add in powerful data security and manipulation using the blockchain, and you've got the potential for a rock-solid, customizable, and constantly-evolving information environment where every process is built on continuous improvement, every automatable task is handled by machines, and human team members enjoy greater productivity, convenience, and morale while working toward organizational goals.

The combination of the real world with the digital realm, sometimes called *cyber-physical systems*, is already in heavy use via the Internet of Things (IoT), which can produce real-time duplicates for production testing and prototyping, or allow physical manipulation of real-world objects by digital users, whether they're human or AI.

3D printing brings digital assets into the real world, simplifying production and prototyping and, in a somewhat ironic twist, bringing home production of mass-produced goods back into the limelight.

There is, after all, a certain undeniable similarity between the home potter of ages past, spinning up a vessel based on popular designs, and the person who downloads a file for a pot they fancy and prints it at home.

Virtual reality (VR) plays a similar role, allowing companies to explore new environments and work with new prototypes in cyberspace without the need for physical resources. At home, consumers can play games, experience virtual tourism, or even head into work without leaving their home office.

Connecting all of these technologies is the cloud, which has the simultaneous effects of decentralizing data storage and management while creating a single point of access for stakeholders, with greater security, versatility, and accessibility than could be imagined in the days of manual workflows and paper-based processes. In the near future, it's possible quantum computing will

At its heart, the fourth industrial revolution is a *digital* revolution; one that's:

- Cloud-based

- Mobile-friendly
- Disrupting both virtual and physical worlds
- Focused on interconnectivity, communication, and collaboration
- Driven by technologies that promote continuous improvement, systems thinking, and personalization.

The promise of the fourth industrial revolution is a world with unprecedented economic growth and quality of life for the world's people, with intelligent tools that help us make smarter decisions about everything from business growth to better self-driving cars to repairing our damaged planet.

It's not all rosy, however. Author, economist, and Executive Chairman of the World Economic Forum, Professor Klaus Schwab warned in his book *The Fourth Industrial Revolution* that the new era would also be fraught with the possibility of peril.

Without careful stewardship, increased inequality of income levels and social divides, exacerbated by “haves” and “have nots” in a world built on digital skills and toolsets, can crop up across the globe—particularly as labor is radically transformed by automation and artificial intelligence.

If previous iterations were about transforming work through technology, Industry 4.0 is about blurring the lines between our digital and biological worlds.

Preparing for the Fourth Industrial Revolution

Looking at the disruptive digital technologies transforming today's business landscape, it might seem impossible to choose just one strategy that ensures your company is ready to handle both the best and the worst of what's coming over the horizon.

That's not necessarily the case, however. Two departments present in every business—procurement and accounting—have the potential to bring digital transformation into your workflows *and* help you build a foundation for Industry 4.0 across all your business units.

Investing in a complete, cloud-based procurement solution such as PLANERGY gives you plenty of options.

You can start small, automating your most critical processes for greater efficiency and cost savings.

Or, you can embrace digital transformation more enthusiastically and streamline your entire procure-to-pay process, effectively freeing both your procurement team and your accounts payable staff from low-value, repetitive tasks while simultaneously introducing continuous improvement to crucial workflows.

Centralized data management, powerful data analytics, and improved communication and collaboration are just a few of the additional benefits that come with such an implementation.

Automating your processes reduces waste, increases efficiency and accuracy, and creates not just savings, but *value* by sparking a cultural transformation in your business.

Optimizing the P2P process creates a ripple effect; more discounts are captured; better supplier relationships are forged; rogue spend, invoice fraud, and inaccurate reports are eliminated.

Artificial intelligence, blockchain tech, and machine learning allow you to introduce smarter vendor portals, support from chat bots, and rock-solid data security into all of your spend-related processes.

And since spend touches every area of your business, the ripples spread even further as more and more stakeholders embrace these tools for their own approval workflows, report generation, financial and marketing forecasts, and product innovation initiatives.

In time, your human staff will be investing their time and talents where they're needed most, supported by technology that gets the job done and provides rich data for strategic planning and decision making.

Is Your Company Revolution-Ready?

We live in a time of great promise, where tomorrow's tech is already changing the

way we live, work, and play today.

Researching and implementing automation, artificial intelligence, and other technological innovations as part of your business strategy will give your company the power, competitive strength, and versatility it needs to take advantage of wonders yet to come.

QuickBooks Desktop for small and mid-sized businesses

QuickBooks Desktop is a flexible accounting software application designed for small to mid-sized businesses. While the desktop application cannot compete with custom-designed ERP applications, many larger businesses have continued to use QuickBooks Desktop applications for their bookkeeping and accounting needs.

QuickBooks Desktop was first introduced in 1998 and modeled after Intuit's first financial application, Quicken, which provided personal accounting capability, but no double-entry accounting. When QuickBooks Pro was initially introduced it was aimed at the non-accountant small business owner looking for a way to do accounting other than an Excel spreadsheet. In 2000, additional features were added to the application, but it still lacked the specificity that many small business owners were looking for.

That all changed in 2003 when Intuit introduced the first industry-specific editions of QuickBooks, which have grown in popularity and are now available in several editions, including the professional services version, which we'll talk about in this article.

What is QuickBooks Desktop Professional Services?

While all niche industries can make an argument for an application designed specifically for their business needs, the professional services industry offers several challenges that need to be appropriately addressed including solid time tracking capability, flexible billing rates, and the option to better track project

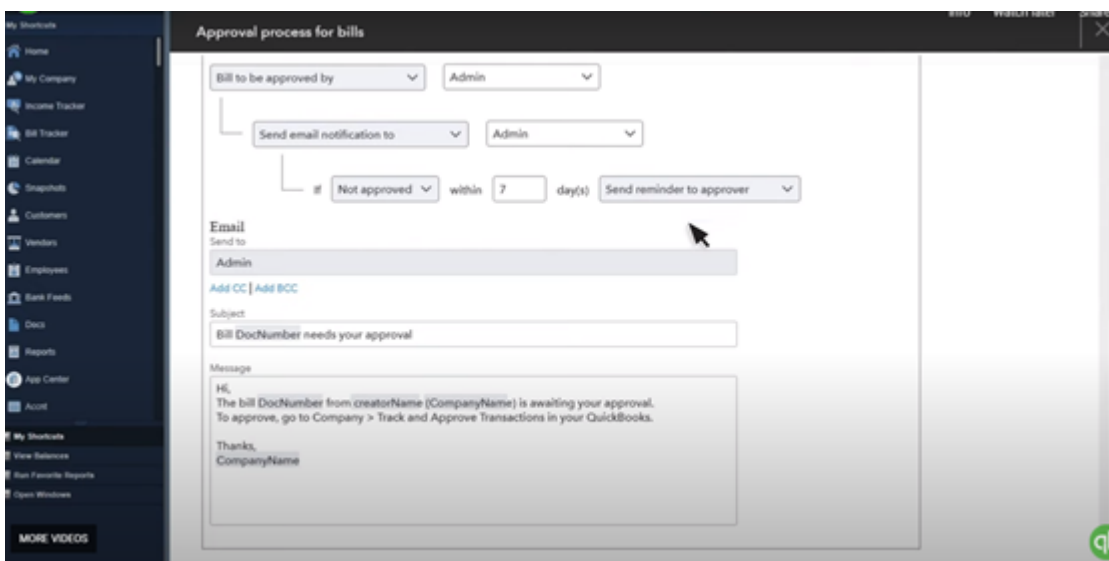
data.

QuickBooks Desktop Professional Services does that and more. Designed for those providing services rather than selling products, the Professional Services edition is available in both the Premier and Enterprise versions of QuickBooks Desktop.

In this article, we'll take a look at QuickBooks Enterprise for Professional Services, which is designed for mid-sized businesses and can support up to forty system users. However, if your business has less than five QuickBooks users, you may want to consider using QuickBooks Premier Professional Services, a better option for smaller businesses.

Today, QuickBooks Enterprise Professional Services is loaded with features, including all those found in regular QuickBooks Desktop applications, such as double-entry accounting, online banking, bill payment, and invoicing. But it also includes features and functionality designed specifically for service professionals. Here's a breakdown of some of the latest features.

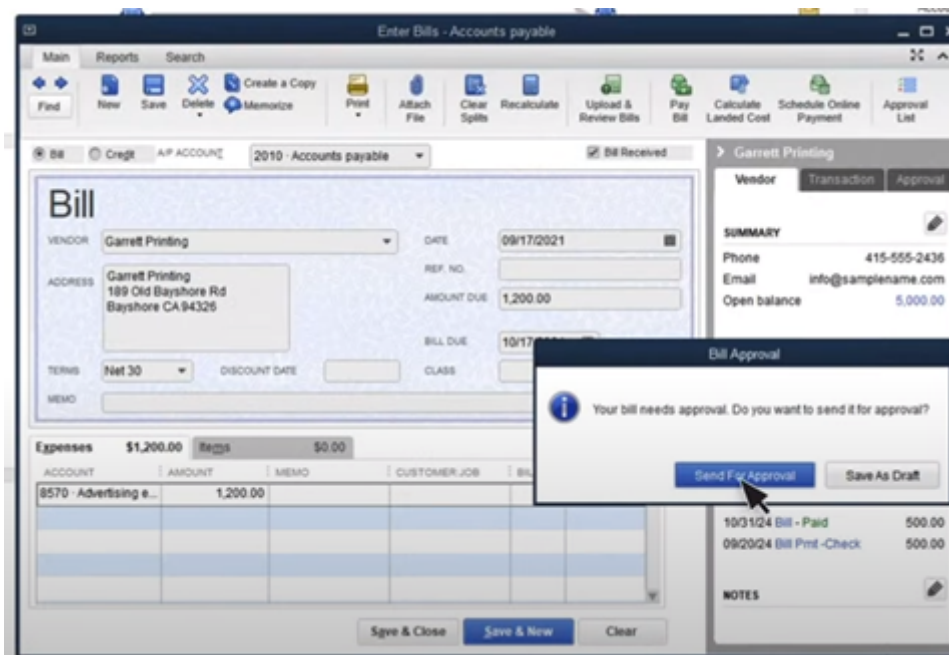
*** Bill Workflow Approvals - (Platinum version)** Bill workflow approvals is a brand new feature that allows you to better manage your cash flow by creating customizable workflow approvals. This new feature also includes reminders when approval deadlines approach.



You can set up custom workflows with the new Bill Workflow Approvals feature.

You can choose the custom workflow to suit your business, and can even customize the email message that the assigned recipient will receive. You can also

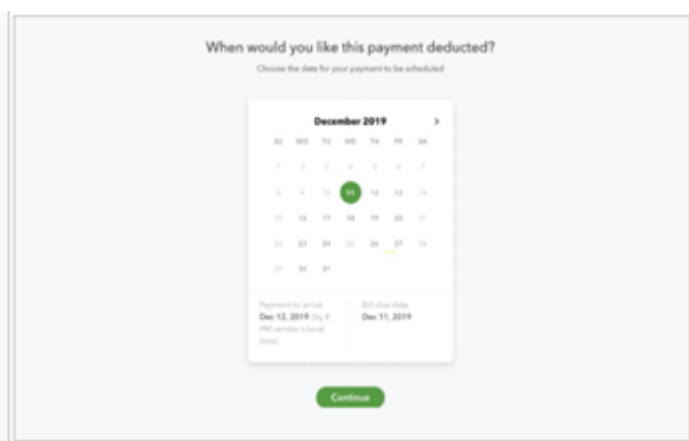
choose whether you wish to copy anyone on the email. Once a workflow process has been set up for a particular vendor, whenever you enter a bill for that vendor, you will receive a message that the bill needs approval.



The Bill Approval option appears when a custom workflow has been set up for that vendor.

This message serves as a reminder that the bill has to be submitted for approval before processing.

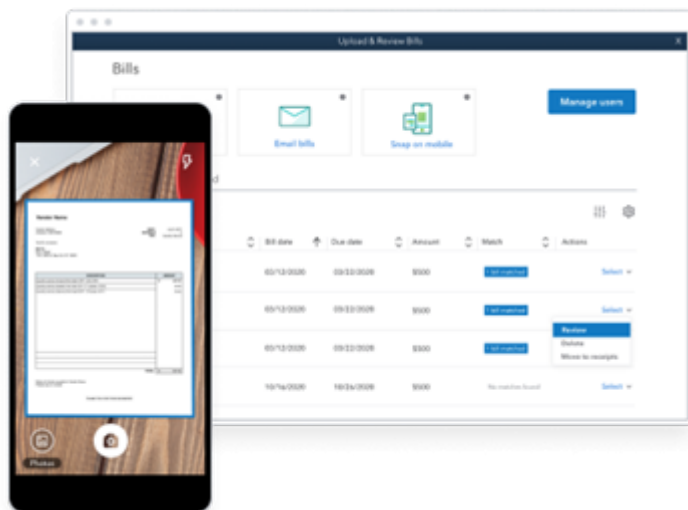
*** Scheduling and Paying Bills** - Another new feature in QuickBooks Enterprise Professional Services is the option to schedule bills for payment. A particularly useful feature for smaller businesses with limited cash flow, using the billing scheduling and payment feature allows you to review any open balances, track sales orders, and plan in advance when to pay a bill.



The Scheduling and Bill Payment feature allows you to schedule bill payments.

When scheduling a payment, you have the option to choose the form of payment you wish to use including bank transfers or a physical check.

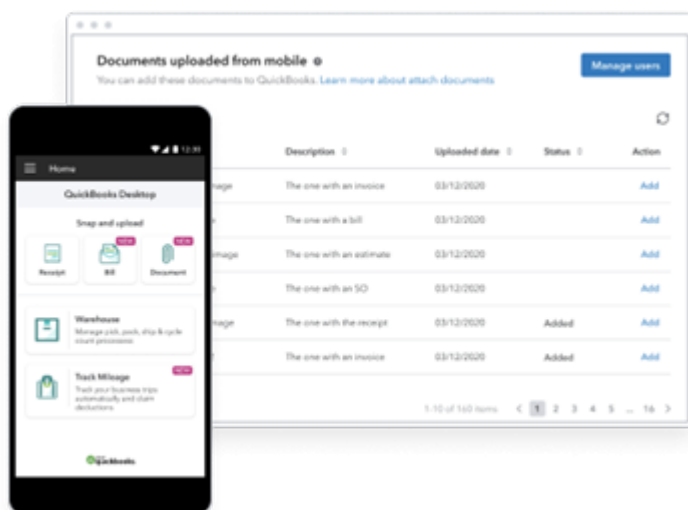
*** Upload Bills to QuickBooks** - Using the QuickBooks Desktop mobile app, you can now upload your bills directly into the application.



Using the QuickBooks Desktop Mobile App, you can easily upload bills.

All you have to do is snap a photo of the bill and click on the import feature. You'll be able to review the bill for accuracy before it posts into your account. Another benefit to using this feature is that you can have your vendors email their invoices directly to QuickBooks, where they will be available for you to review.

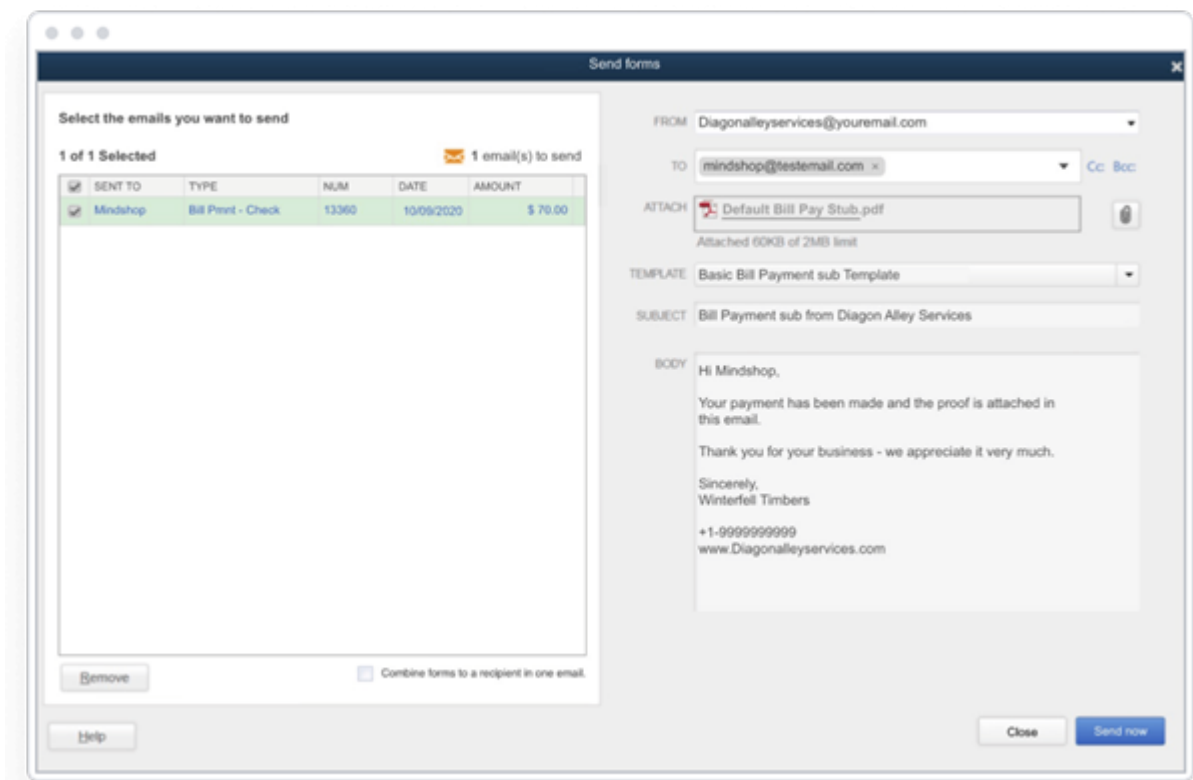
*** Attach Documents to Transactions** - Along with uploading invoices, you can also attach documents to any transaction using the mobile app.



Use the QuickBooks Desktop Mobile App to attach documents to any transaction.

Doing so eliminates the need to store multiple documents on your system. You can also upload and attach multiple documents simultaneously if desired.

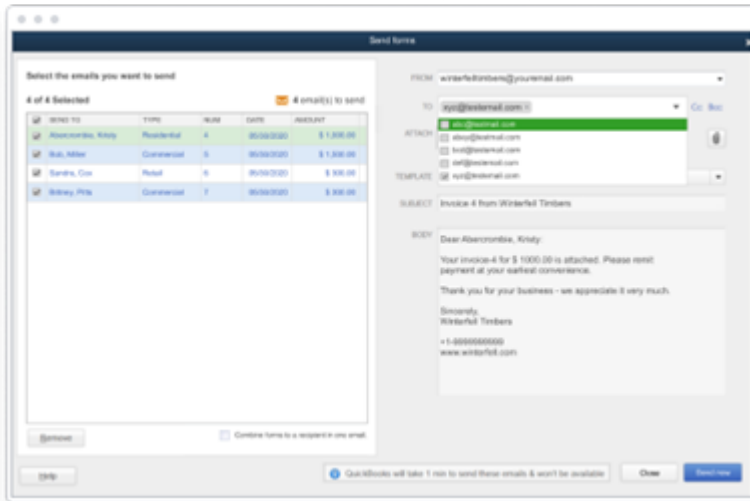
* **Customize Bill Payment Stubs** - Your vendors no longer have to wait for a paper check to receive a bill payment voucher. Using this feature, you can add your business logo and format the payment stub to suit your business.



You can now customize bill payment stubs for all of your vendors.

You can choose the vendors you wish from the dropdown list and create a custom email to send along with the bill payment stub.

* **Multiple Email Contacts** - Do you have a newsletter, targeted sale, or other information you wish to send to a select group of contacts? Using the multiple email contact feature, you can do just that.



The Email Contact List allows you to choose the recipients for a group email.

This is a great way to get custom messaging out to the appropriate recipients without having to manually enter each email address.

The professional services industry offers several challenges that need to be appropriately addressed including solid time tracking capability, flexible billing rates, and the option to better track project data.

Other features

Along with these new features, QuickBooks Enterprise Professional Services also offers numerous features designed for professional services businesses. These include:

Time Tracking with QuickBooks Time Elite (formerly TSheets Elite) – Time tracking is important for any business, but particularly so for service businesses who have to manage timesheets and bill their time accordingly. Using QuickBooks Time Elite, professional services users can track time spent on any project. But even more important, the time can then be automatically rolled up into any subsequent project reports as well as into QuickBooks Payroll, eliminating the need to enter data twice.

This allows users to track their time from any location, whether it's from their home, the office, or the client's office.

Project Costing – It can be difficult to know if a client project is profitable if all

of the project management components are not tracked properly. Not only can you easily track project cost projections in real-time using the job costing dashboard, but you can also track the actual expenses to see if you're on track for profitability or if cost adjustments are needed.

Best of all, QuickBooks Enterprise will automatically create client invoices based on data entered in the system, eliminating the need to bill clients separately.

Flexible Billing Rates - As a professional services firm, your billing rates likely change frequently, depending on the job completed, who completed it, and the level of difficulty in completing the job. That's why being able to assign different billing rates to your employees based on a variety of criteria is so important.

By setting custom billing rate levels, you can assign a rate for a particular level rather than by an employee. For example, at a CPA firm, partner billing rates would be assigned at a different level than entry-level employees.

Reporting - Good reporting options are available in all QuickBooks Desktop applications with the Enterprise edition of QuickBooks Desktop offering more than 200 reports that can be customized to suit your needs. Any customized report can be saved in the application as a template, so you can use the same reporting criteria in the future without having to set it up again.

Advanced Reporting - Advanced reporting allows Enterprise users to access raw data to create reports and graphs from scratch. In addition, the Professional Services edition of QuickBooks (and all niche editions) also offers bundled reports designed specifically for professional services businesses. These reports include:

- **Billed and Unbilled Hours** - This report can be run by person or by project, and provides management with a good view of all billable hours as well as how long an employee has spent on a particular project.
- **Costs by Project** - Costs need to be looked at throughout the life of a project. Running the Costs by Project report allows you to see exactly how much you've spent to date, allowing you to make adjustments to your forecast mid-project when needed.
- **Project Costs Detail** - Still wondering exactly why your project has gone over budget? Run the Project Costs Detail report to see exactly how funds were spent.

- **Cost to Complete** - Not sure if you have enough in the budget to complete a project? Just run the Cost to Complete report, which displays both percentage complete and cost to complete, allowing you to make any adjustments before the job runs over budget.
- **Project Status** - One of the most important reports for management, the Project Status report provides a summary view of all projects in progress along with a guide that shows you whether the project is on track for on-time completion.

Payroll Processing - All QuickBooks Enterprise editions come with QuickBooks Enhanced Payroll, which allows you to pay both employees and contractors. Enhanced Payroll also includes both printed check capability as well as free direct deposit. For those that want additional help with payroll, a subscription to Assisted Payroll will take care of all payroll taxes including filing and payment.

QuickBooks Enterprise Professional Services also includes a custom chart of accounts, can monitor project progress, track unbilled time, and electronically invoice clients. Multi-level data permissions are available, so management can establish permission levels for multiple groups of employees, ensuring confidentiality throughout the life of the project.

In addition, you can prepare custom proposals for potential business, accept mobile and credit card payments from your clients, and even integrate with Salesforce CRM for better client and sales management. For those that require integration with outside e-commerce channels, an optional e-commerce integration add-on is available that offers seamless integration with online stores and marketplaces.

Like all QuickBooks products, QuickBooks Enterprise Professional Services is designed to work on a Windows platform and is not currently available for Mac systems. Available as an annual subscription, Intuit offers three versions of Enterprise:

1. **Gold** - The Gold version of QuickBooks Enterprise includes Advanced Reporting, access to QuickBooks Priority Circle, and QuickBooks Enhanced Payroll. The Gold version supports up to 30 system users and starts at \$1,489.50 for the first year.

2. **Platinum** - The Platinum version includes all Gold level features as well as Advanced Inventory for tracking inventory items, Advanced Pricing, and Bill Workflow Approvals. The Platinum version supports up to 30 system users with a subscription starting at \$1,831.50 for the first year.
3. **Diamond** - The most advanced version of QuickBooks Enterprise, the Diamond version can support up to 40 users and includes advanced features such as QuickBooks Time Elite, and the Salesforce CRM Connector. Diamond subscribers also have access to QuickBooks Desktop Assisted Payroll. The Diamond version of QuickBooks Enterprise starts at \$3,618 the first year.

All subscription levels include customer support, online data backup storage for all QuickBooks data, product upgrades, and training tools.

Is QuickBooks Enterprise Right for Your Business?

A great option for mid-sized and growing professional services businesses that are looking for a better way to manage project costs and billing, QuickBooks Enterprise Professional Services is an all-in-one application that you will not soon outgrow.

What's your goal today?

1. Use PLANERGY to manage purchasing and accounts payable

We've helped save billions of dollars for our clients through better spend management, process automation in purchasing and finance, and reducing financial risks. To discover how we can help grow your business:

- Read our case studies, client success stories, and testimonials.
- Visit our "Solutions" page to see the areas of your business we can help improve to see if we're a good fit for each other.
- Learn about us, and our long history of helping companies just like yours.

Book a Live Demo

2. Download our guide “Preparing Your AP Department For The Future”

Download a free copy of our guide to future proofing your accounts payable department. You’ll also be subscribed to our email newsletter and notified about new articles or if have something interesting to share.

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3. Learn best practices for purchasing, finance, and more

Browse hundreds of articles, containing an amazing number of useful tools, techniques, and best practices. Many readers tell us they would have paid consultants for the advice in these articles.

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