

The impact of Internet of Things on Accounting Cycle

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Abstract

How IoT Will Influence Accounting and Billing Systems It be believed that IoT can remodel the accounting and billing industry. Since it connects all devices on a global scale, the data harvested by each connected device can be translated into stellar strategies. IoT can be used with suitable accounting software to automate the process of accounting and billing to improve its overall productivity. Thus, IoT has the potential to enhance the accounting system in many ways.

These are many online accounting packages and tools that focus on small and medium businesses, and now it's no longer just clouds with Internet things taking over.

- Banks and salaries provided data directly into the system,
- Sales representatives create invoices directly from their iPhones
- Invoices are entered directly from iPhones by people who buy goods
- Like Xero, the calculations are surprisingly accurate without any input from the accountant
- SMEs are now asking for advice that not only sets the time of commitment but also helps them shape their business for the future.
- Accountants and service providers in all professions need to find new ways to be part of the new service-driven world.

Internet of Things, known as Internet of Things (IoT), is a network of physical devices, vehicles, home appliances and other components embedded with electronic devices, computers, sensors, engines and communication that enable these devices to communicate and share data that is uniquely defined by a computer capable of on the interaction within the current infrastructure of the Internet.

Key Words: Accounting Cycles, Internet of Things (IO T), Financial Reporting

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Introduction:

The aim of this paper is to show an impact IoT on accounting cycle. Proposed model is based on relevant business practices and technology solutions, connecting the manufacturers and retailers activating potential shoppers throughout the purchase cycle, combining the user interface and internal business processes.²

The pace of change is astonishing, yet at its core IoT is quite simple, it's the idea that all of our devices and things being connected. As a profession and industry, the Accounting world and our clients are still coming to terms with how to work with the myriad of SME focused online accounting packages and now it's not even just about cloud anymore as the IoT takes over.³

Driving all of this, now more than ever, we have an ability to truly seeing our client's though data connectivity. We're seeing the introduction of free, tie-in accounting services from our local retail banks; low monthly fee offerings from global accounting platforms; and the development of cloud ecosystem providers for accounting, payroll, human resources, and order and inventory management processes. All of which are packets of data that once pooled together empower an accountant to identify a correct treatment, process, income stream, or piece of advice that matters most to their client's business.

As the hyper-connected world of technology comes of age, another new frontier is emerging: the internet of things (IoT). The internet is arguably the most transformational technological development of the last century. The vast amount of personal and business data on the internet, like images, videos, games, inventory, transaction histories, has been created by people and is mostly about people. But now, the internet is set to evolve in yet another world-changing form. The "new internet" that's on the horizon will not just connect people, it will connect things.

This marriage of minds and machines is poised to change our lives just as drastically as the internet already has. For over a decade, we have already been connecting smart devices to the internet for person-to-person and person-to-

² - BassirouDièneaJoel J.P.C. Rodriguesbcd. "Data management techniques for Internet of Things"
Mechanical Systems and Signal Processing, Volume 138, April 2020.

³ - Daniel wyner published in the 2015 CPA *Australia In Practice Magazine*

thing interactions, tasks like syncing emails and downloading maps. As technology continues to improve at an unprecedented rate, thing-to-thing interactions have become a reality. The things or devices we connect to the internet are now able to share their data with other internet-connected devices.⁴

Purpose:

IoT connects devices to each other devices, which leads to cost, time, and process optimization. Using IoT, the businesses can have better information about their workforce.

They can easily find out what their employees are doing and where they are, so they can assess the downtime, most productive time, most productive employees, and even decipher the area/employee that needs replacement.

It facilitates the businesses to leverage the power of information to carry out performance appraisal of every employee. In this way, IoT empowers the organization and allows it to optimize all its processes.

Provide Suggestions for the development of the accounting system and presentation of financial statements, what are the advantages and benefits of this new system for accountants?

1. No audits-ever
2. Optimizes costs—and time
3. Track assets and inventory
4. Optimize performance—and satisfaction
5. Provide more accurate quotes

Overview:

Computer size is dropping and the number of sensors is dramatically increasing; the digital world is indeed becoming more aware of and more connected to the physical world while the job market for technical

⁴ - Zuqiang Zhu, “Research on future accounting information system in the Internet of Things era”, Published in: 2012 *IEEE International Conference on Computer Science and Automation Engineering*. 22-24 June 2012. Beijing, China, IEEE: 10.1109/ICSESS.2012.6269573.

professionals who can leverage these connections to drive business value is also growing exponentially.⁵

By 2020, it is predicted that there will be over 50 billion devices connected to the internet. Over 100 times as many as existed just 10 years ago – that’s nearly 7 devices for every person on the planet. These devices will span industrial, commercial and consumer markets and, via Ambient Computing will be able to intelligently communicate with each other and intelligently respond to human interaction and business needs in a remarkable variety of ways. The Internet of Things (IoT), Big Data and the Cloud create a new very fertile ecosystem that has and will make our lives more effective and enjoyable and provide vast new opportunities for business to improve their operational efficiencies and provide opportunities for growth.⁶

lecture review:

- 1- Those in the emerging digital world have recently witnessed the proliferation and impact of IoT-enabled devices. The IoT has provided new opportunities in the technology arena while bringing several challenges to an increased level of concern. This research has both practical and theoretical impetus since IoT is still in its infancy, and yet it is considered by many as the most important technology initiative of today.⁷
- 2- IoT different from traditional IT networks. These differences are important to be highlighted as they influence the development of requisite security and privacy solutions for IoT systems. The significant difference between conventional networks and IoT is the level of resources available at the end devices.⁸

⁵ - Deniz Appelbaum Alexander Kogan Miklos Vasarhelyi Zhaokai Yan, “Impact of business analytics and enterprise systems on managerial accounting”. *International Journal of Accounting Information Systems* Volume 25, May 2017, Pages 29-44.

⁶ - Jodie Molla, Ogan Yigitbasioglu, “The role of internet-related technologies in shaping the work of accountants: New directions for accounting research”. *The British Accounting Review* Volume 51, Issue 6, November 2019.

⁷ - Jeretta Horn Nord, “The Internet of Things: Review and theoretical framework”, *Expert Systems with Applications*. Volume 133, 1 November 2019, Pages 97-108.

⁸ - Imran Makhdoom, “Blockchain's adoption in IoT: The challenges, and a way forward”, *Journal of Network and Computer Applications* Volume 125, 1 January 2019, Pages 251-279.

- 3- The IoT has brought about a new paradigm in which a global network of machines and devices capable of interacting with each other is driving digital innovation in enterprises.⁹
- 4- Internet of Things (IoT) is a term that has been introduced in recent years, and it defines objects being able to connect and transfer data through the internet. Although some IoT-related products are currently available in the market, there are still some IoT problems that need to be overcome, such as the security issues and lack of confidence and understanding of IoT.¹⁰
- 5- Applying the wireless sensor network of the Industrial Internet of Things and the radio frequency identification technology to the production workshop of the discrete manufacturing industry, the real-time status of the shop floor can be automatically collected, providing a powerful decision-making basis for the upper-level planning management department.¹¹
- 6- The Internet of Things (IoT) global arena is massive and growing exponentially. Those in the emerging digital world have recently witnessed the proliferation and impact of IoT-enabled devices. The IoT has provided new opportunities in the technology arena while bringing several challenges to an increased level of concern.¹²
- 7- The Internet of Things needs for computing power and storage are expected to remain on the rise in the next decade. Consequently, the amount of data generated by devices at the edge of the network will also grow.¹³

⁹ - In Lee, "The Internet of Things for enterprises: An ecosystem, architecture, and IoT service business model", ***Internet of Things*** Volume 7, September 2019.

¹⁰ - Pham Thi Minh, "Fuzzy AHP analysis of Internet of Things (IoT) in enterprises", ***Technological Forecasting and Social Change***. Volume 136, November 2018, Pages 1-13

¹¹ - Wei Chen, "Intelligent manufacturing production line data monitoring system for industrial internet of things", ***Computer Communications***. Volume 151, 1 February 2020, Pages 31-41.

¹² - Jeretta Horn Nord, "The Internet of Things: Review and theoretical framework", ***Expert Systems with Applications***. Volume 133, 1 November 2019, Pages 97-108.

¹³ - Luiz Bittencourt, "The Internet of Things, Fog and Cloud continuum: Integration and challenges", ***Internet of Things***, Volumes 3–4, October 2018, Pages 134-155.

Accounting Cycle:

The accounting cycle is the process of recording your business's financial activities. The accounting cycle looks back in time at the end of a designated period. The cycle includes several steps, starting when a transaction occurs. The cycle ends when you record the transaction as part of your financial statements.

The accounting cycle makes accounting easier, breaking your bookkeeping down into smaller tasks. It helps you see what you need to accomplish next.

You can improve consistency and accuracy by following the accounting cycle. Start and end dates allow you to manage time and set goals. You can compare one cycle to another, and reconcile bank statements.

If you use accounting software, you can program dates for your accounting cycle. The software will generate reports based on the dates you select.

Accounting cycle steps



1. Analyze and measure transactions.

Obviously in this phase, your business collects their transactions for analysis, measurement, and recording. But here's the first hang-up: what do you have to record?

As a general rule of thumb, a business should minimally record:

- All cash sales.
- All purchases (no matter how small).
- Anything that's measurable, relevant, or reliable.

- All events:

External transactions: are between the entity and its environment, such as exchanges with another company or a change in the cost of goods your business purchases.

Internal transactions: are exchanges that occur within the organization.

In short, a company records as many transactions as possible that affect its financial position.

If you're looking for more accounting help, try a FREE 30-minute session with one of our accountants.

2. Record transactions in the journal.

This is also known as journalizing. A journal chronologically lists transactions and other events in terms of debits and credits to accounts. Each journal entry consists of four parts:

1. The accounts and amounts to be debited.
2. The accounts and amounts to be credited.
3. The date of transaction.
4. A transaction explanation.

3. Post information from the journal to the ledger.

This is the act of transferring information from the journal to the ledger. Posting is needed in order to have a complete record of all accounting transactions in the general ledger, which is used to create a company's financial statements.

4. Prepare an unadjusted trial balance.

The unadjusted trial balance is a list of the accounts and their balances at a given time, before any adjusting entries are made to create financial statements. The accounts are listed in the order which they appear in the ledger, with debit balances listed in the left column and credit balances in the right column. The totals of these two columns must match.

5. Preparing adjusting entries.

Adjusting entries are journal entries recorded at the end of an accounting period that alter the final balances of various general ledger accounts. These

adjustments are made in order to more closely align the reported results and the actual financial position of a business. Adjusting entries follow the principles of revenue recognition and matching.

6. Prepare an adjusted trial balance.

After journalizing and posting all adjusting entries, many businesses prepare another trial balance from their ledger and accounts. This is called the adjusted trial balance. It shows the balance of all accounts, including those adjusted, at the end of the accounting period. Therefore, the end result of this adjusted trial balance demonstrates the effects of all financial events that occurred during that particular reporting period.

7. Prepare financial statements.

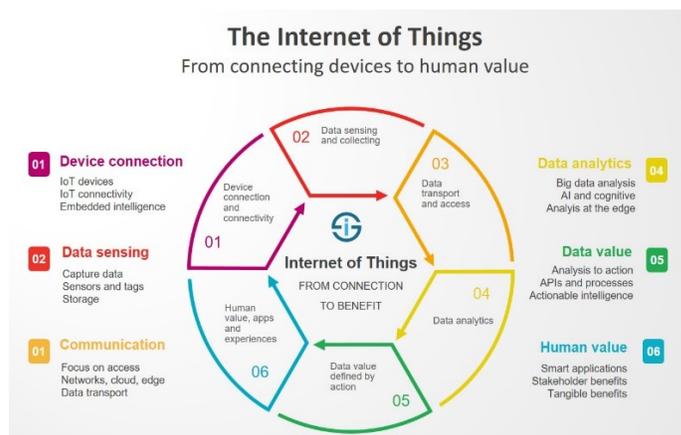
Financial statements can be prepared directly from the adjusted trial balance. A financial statement is an organization's financial results, condition, and cash flow.

8. Prepare closing entries.

In the closing phase, temporary balances are reduced to zero in order to prepare the accounts for the next period's transactions. This process empties the entity's temporary accounts and deposits anything remaining into a permanent account.

9. Prepare a post-closing trial balance.

The post-closing balance consists only of assets, liabilities, and owners' equity, also known as real or permanent accounts. This balance provides evidence that the company has properly journalized and accurately posted the closing entries.



Inventory Cycle

Now that your company has performed a complete accounting cycle, so what is the optimal internal accounting control based on IOT,¹⁴ it's ready for the next reporting period. For any organization, inventory tracking is a tedious and intimidating process. Tracking everything from a single piece shipped to the customers across the globe to the goods coming in can create chaotic situations. However, businesses can leverage the power of IoT to enhance the process of inventory tracking.¹⁵

The products can be integrated with the RFID chip that facilitates tracking. It gives data related to the exact location of the product, its name, its usability, current status (whether in use or not in use), and the name of the person who has/owns it. Not just tracking, but IoT helps in overall inventory management.

Businesses can deploy this technology to update and maintain its stocks in real-time. Smart shelving can be created to allow businesses to find the details of inventory at any time. This information can then be employed by businesses to make decisions whether they need to order a particular product or not along with the quantity required. This prevents unnecessary wastage and it even avoids the situation of depleted stocks.

What is Internet of Things (IoT)

The Internet of Things (IoT) is the term for network consisting of all types of physical devices with access to the Internet, which includes everything from mobile phones, coffee makers, washing machines to cars and buildings. So pretty much everything you can think of.

In short, the Internet of Things (IoT) expands the connection possibility to the Internet for all types of devices, so it is not only desktop computers and smartphones which are connected, but billions of devices of all types. Some estimates that over 100 billion units by 2020 will be connected to the Internet. The Internet of Things (IoT) will open up many new possibilities, a world where devices talk to each other through a two-way connection. By collecting, analyzing and processing data from sensors things, companies will now be

¹⁴ - YHn Hui, Xue Ying: "Optimization of the internal accounting control based on the internet of Things", *the 2014 International Conference 2015. London, ISBN: 978-1-1-138-02728-2.*

¹⁵ -Wen Ding, "Study of Smart Warehouse Management System Based on the IOT", *Intelligence Computation and Evolutionary Computation* pp 203-207. (AISC, volume 180)

able to offer their customers new services. A product is therefore not out of a company's hands after it has been purchased by the customer. In the future, manufacturers will be able to monitor each product and therefore be better able to advise customers and offer additional services. By utilizing the new technology successfully gives businesses additional sales arguments.

IO T and Accounting Cycle:

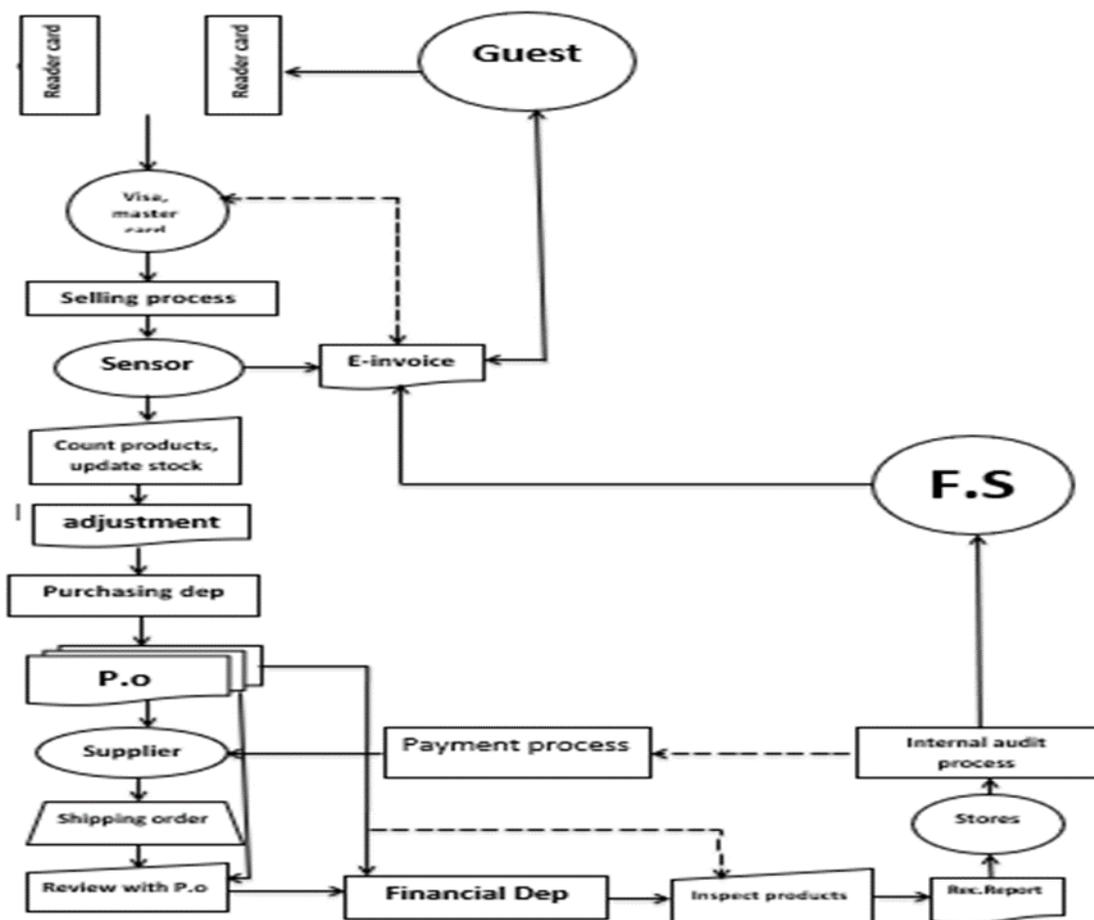
The last years technological evolution resulted in essential changes in the way accounting processes are done. The extension of organizations' activity at a global level and the large business systems contributed significantly to the change in the way operations take place within the companies and in the relations with partners. All these aspects, together with the accounting standardization and harmonization processes, lead to the emergence and extension of the use of a new concept: Digital accounting which it regards the representation, manipulation and transmission of the accounting information in electronic format across all accounting cycles, as well as their communication to partners interested in it. Digital accounting is based on the existence of a coherent information system and the use of Internet for the transmission of information generated by the system both within the company and outside it by using the Internet of Things concept (IoT). IoT is technology shows anything that can be connected to a network qualifies to become a smart object. Exciting use cases and Products can be generated by interconnecting these smart objects with the internet.

The pace of change is astonishing, yet at its core IoT is quite simple, it's the idea that all of our devices and things being connected. As a profession and industry, the Accounting world and our clients are still coming to terms with how to work with the myriad of SME focused online accounting packages and now it's not even just about cloud anymore as the IoT takes over.

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together empower an accountant to identify a correct treatment, process, income stream, or piece of advice that matters most to their client’s business.

For many SMEs with the advent of cloud accounting, they can see a clear return on paying for advice that doesn’t just mark compliance time but helps them shape their business for the future. With the influx of cloud-based accounting platforms – whether they primarily are used for bookkeeping or more strategic financial purposes, there is now no reason why SMEs should not be operating with an appropriate level of proactive, sophisticated advice – the same cost and tax-optimization intelligence that’s been giving their larger counterparts an unfair advantage for too long. The following illustration to be explain what is the possessing for all transaction in accounting cycle, start from collecting data to prepare Financial Statement and accounting process, just to customer enters the store and across the gate so Take a tour inside the store to shop.



Finding:

The aim of the study is that the Internet of Things contributes to the development of preparing and presenting financial statements in addition to collection, payment and internal control processes, this is evident from the flow chart shown for the accounting cycle.

Conclusion:

The study examined the Accounting Cycle in commercial enterprises and how the Internet of Things contributed to the development of preparing financial statements and improving the system of internal control.

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