White Paper

How the Microsoft Ecosystem and Cloud Computing Will Create 110,000 New Jobs in Canada from 2015 to 2020

Sponsored by: Microsoft Canada

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June 2016

EXECUTIVE SUMMARY

- From the end of 2015 to the end of 2020, the adoption of cloud computing will generate more than 50,000 new jobs in Canada.
- Spending on just public cloud computing in Canada will double from 2.3 billion CAD in 2016 to 5.5 billion CAD in 2020.
- Public cloud investment and additional investment in *private* cloud computing solutions will enable IT organizations to spend more time and money on innovation and new projects, which in turn will help businesses drive close to an additional 60 billion CAD in new revenues over the next five years.
- Meanwhile, overall IT spending will grow from 59 billion CAD in 2015 to 65 billion CAD in 2020, by which time IT employment in Canada will surpass 1.2 million jobs.
- The Microsoft ecosystem – those who sell, service, deploy, or otherwise work with Microsoft products – in turn supported more than 410,000 workers in 2015.
- From the end of 2015 to the end of 2020 the Microsoft ecosystem could add another 65,000 jobs to the Canadian economy.
- This is made possible by the fact that the ecosystem itself is far bigger than Microsoft, bringing in 8.36 dollars of revenue for every dollar that Microsoft does. All told, the ecosystem invested nearly 7 billion CAD in the Canadian economy in 2015.
- Based on other IT industry spending ratios, IDC estimates each dollar of Microsoft's PaaS revenues generates as much as twenty dollars of Microsoft Canada ecosystem revenues.

IN THIS WHITE PAPER

This IDC White Paper discusses the impact information technology, cloud computing, and the Microsoft Ecosystem will have on the Canadian economy between now and 2020. It builds on more than a decade of IDC analysis of the economic impact of IT on local economies and follows previous work published on the creation of jobs in Canada as a result of cloud computing.[1]

[1] http://news.microsoft.com/download/features/2012/idc_cloud_jobs_white_paper.pdf and http://www.itbusiness.ca/blog/idc-microsoft-sees-70000-canadian-jobs-in-the-clouds/20673

IT and the Canadian Economy

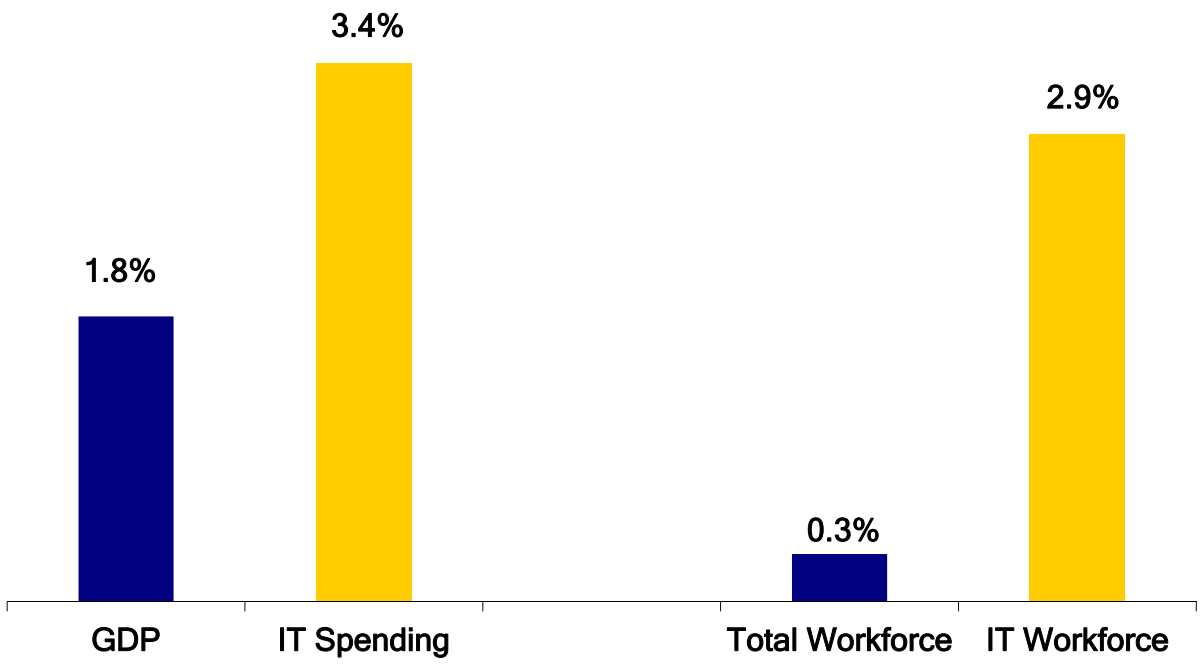
Thirty years ago, the importance of IT to local economies was hotly debated – were the promised productivity gains real, and were they worth the investment? Did IT create jobs or kill jobs?

By 15 years ago, that debate was over, as signaled by Alan Greenspan, chairman of the U.S. Federal Reserve Board at the time, when he credited IT for the productivity boom of the 1990s.[2] It is now accepted that IT is an integral part of any economy, local to global. In fact, it has become integral to daily life.

Figure 1 illustrates the economic impact of IT. IT is forecast to grow nearly twice as fast as GDP between now and the next decade, and the IT workforce to grow nearly ten times as fast as the overall workforce.

FIGURE 1

IT and the Canadian Economy — Annual Compound Growth Expected from Year End 2015 Through 2020



Source: IDC, 2016

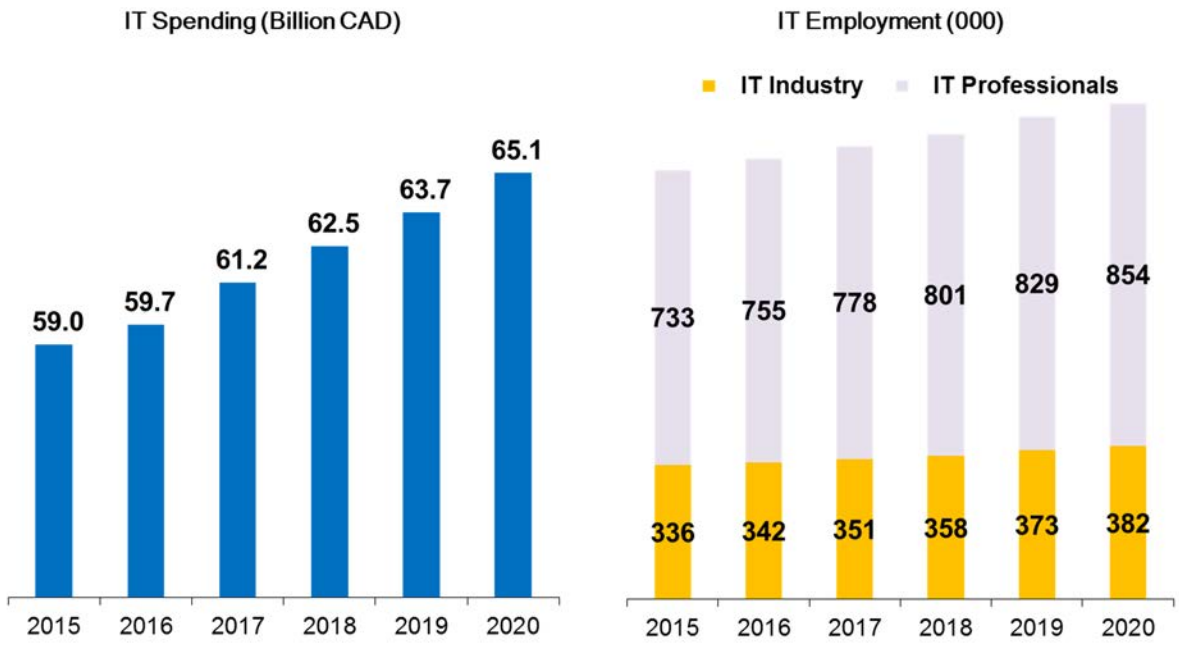
[2] "Remarks by Chairman Alan Greenspan: The Revolution in Information Technology," before the Boston College Conference on the New Economy, March 6, 2000. http://www.federalreserve.gov/boarddocs/speeches/2000/20000306.htm

In 2015 spending on IT accounted for 3% of GDP and the IT workforce of 1.1 million accounted for 6% of the total workforce. Yet, between now and 2020, IT is expected to account for as much as 50% of all new employment.

Figure 2 shows the growth in IT spending and IT employment.

FIGURE 2

IT Spending and Job Growth in Canada, 2015–2020



Source: IDC, 2016

The Impact of Cloud Computing on the Economy

The impact of IT on the economy is taken for granted now, and it's well understood that IT, by enabling innovation, creates more jobs than it kills. For instance, four of the top 10 occupations forecast by the Canadian government to have the fastest growth from 2015 to 2024 are IT-related.[3]

[3] http://occupations.esdc.gc.ca/sppc-cops/l.3bd.2t.1ilshtml@-eng.jsp?lid=64&fid=50&lang=en

The IT-impact-on-jobs debate was rekindled, however, in the early years of cloud computing. Won't IT jobs be lost as companies migrate from supporting huge in-house investments in hardware, software, and staff to external sourcing? Won't using shared resources lower manpower requirements?[4]

Not necessarily. The industry has come to believe that some jobs may shift, for example from in-house IT support to business analysis or vendor management, but the applications and solutions driven by cloud computing will drive demand for other specialties, such as data scientists to comb over Big Data repositories, programmers to create and support mobile applications, and system integrators to meld public and private cloud systems within an enterprise.[5]

In fact, in a study released in September of 2014, IDC found that 157 medium and large enterprises surveyed reported that more than 50% of their spending on cloud computing was additive to existing business and IT services budgets.[6]

Cloud Computing and the Economy — The Real Payoff

In some ways, discussion of the impact of cloud computing on IT jobs misses the point. Its impact on the economy as a whole will be much bigger.

IDC's research – and that of others – shows that cloud computing comes with unique economic leverage that means a little money spent up front leads to impressive returns down the line.

That leverage comes from the fact that so much of traditional IT – IDC estimates that 75% is the world average – is tied up with maintenance of legacy systems and routine upgrades. Cloud computing allows IT organizations to shift some of that legacy work to the cloud, freeing up budget to invest in IT innovation that supports business innovation that leads to new revenues. With IT spend generally being 1% to 4% of a company's business revenues, those business revenues, when driven by innovative IT, can be a significant multiple of IT investment.

Think of electric power. Yes, there are jobs *within* the power industry, but the wide availability of affordable electricity has created many *more* jobs.

Figure 3 shows IDC's forecast for spending on public cloud IT services from 2015 to 2020. Additional spending will occur in implementations of *private* cloud computing, where services are delivered to a single company or even within a company by its own IT department as if they were shared.

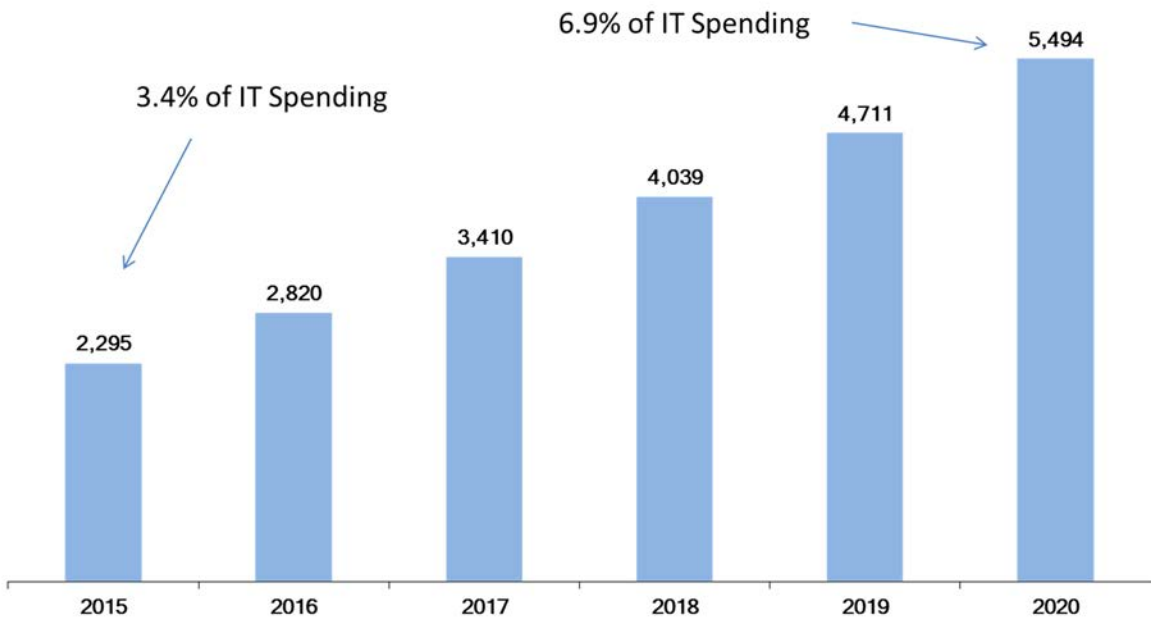
[4] See "*The Effect of Cloud Computing on IT Jobs,"* Eric Bloom, IT World, November 27, 2012, available at http://www.itworld.com/article/2716143/careers/effect-of-cloud-computing-on-future-it-jobs.html.

[5] See "*Cloud Computing Creates New Roles in IT,"* Peggy Albright, IEEE Computing Society, November 21, 2012, available at: https://www.computer.org/portal/web/computingnow/insights/content?g=53319&type=article&urlTitle=cloud-computing-creates-new-roles-in-it

[6] *Canadian End-User Views on Cloud Computing Services,* September 2014, IDC document #CA11CAS14

FIGURE 3

Spending on Public Cloud Computing in Canada, 2015–2020 (MCAD)



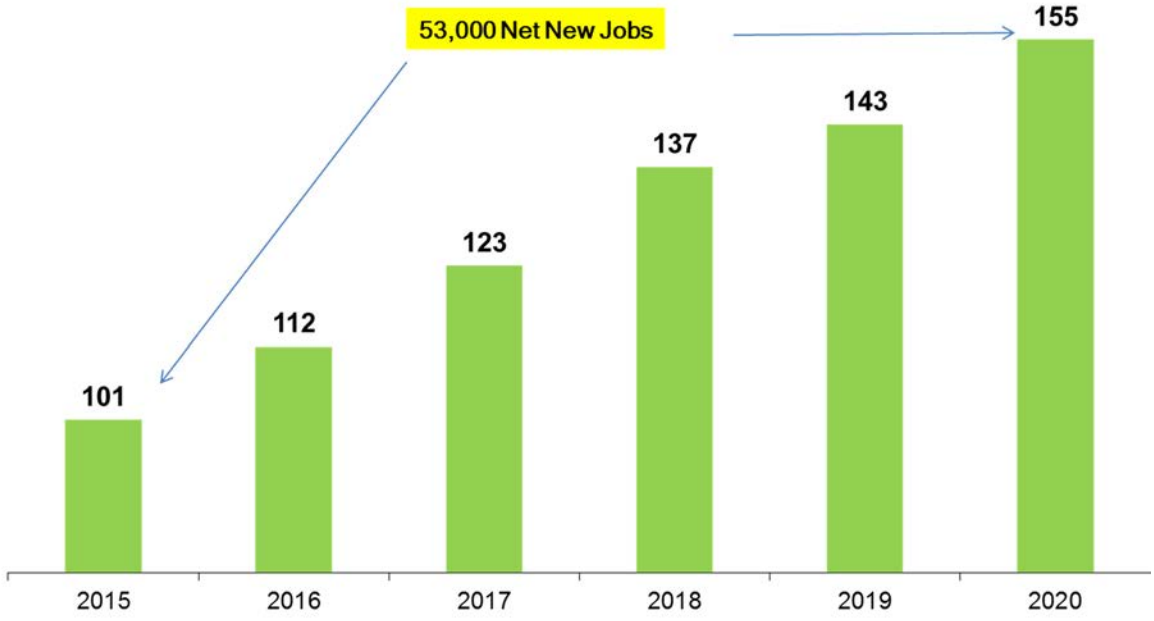
Source: IDC, 2016

As the graphic shows, only a small percent of IT spending was spent on public cloud IT services in 2015, yet the little bit of IT innovation enabled by that public *and* private cloud computing led to more than seven times that in increased business revenues. These revenues in turn supported more than 100,000 jobs in the general economy.

Between 2015 and 2018, business employment generated from cloud computing is expected to account for one in five new jobs.

FIGURE 4

Jobs Generated by Cloud Computing* 2015-2020, (000)



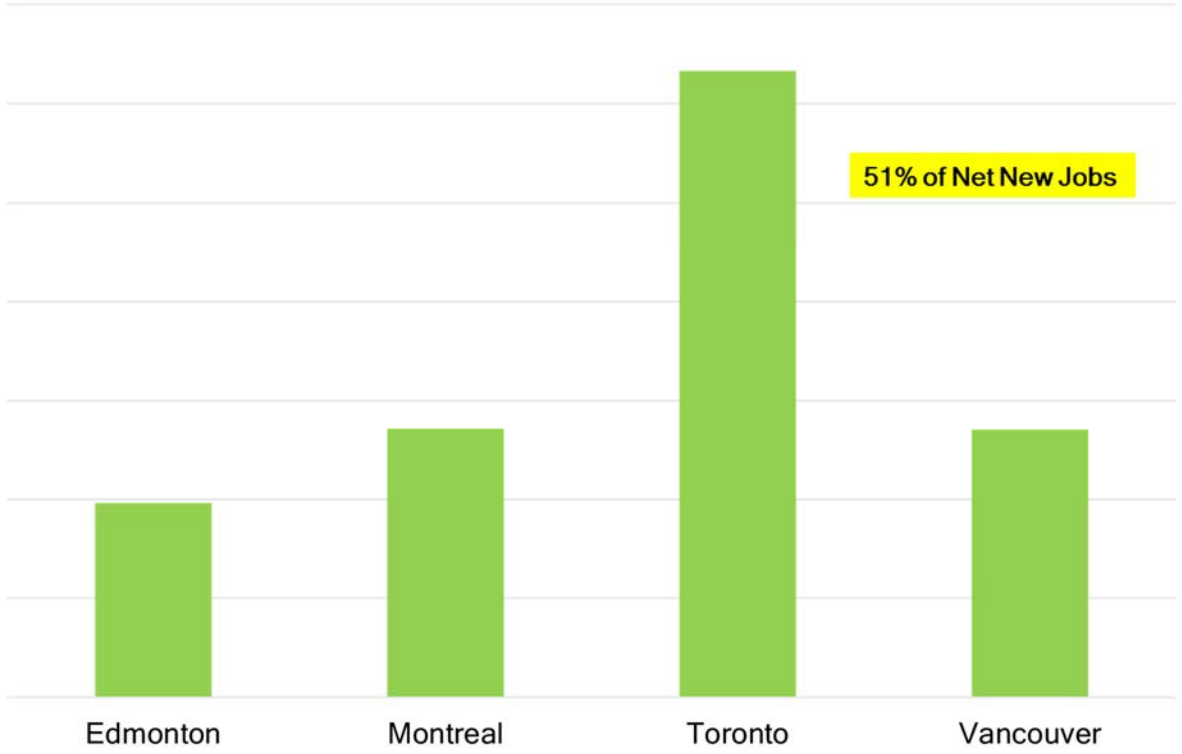
Note: * Jobs in the general economy enabled by public, private, and hybrid cloud computing

Source: IDC, 2016

These new cloud computing-related jobs are expected to appear across the Canadian economy in general, not just in IT. IDC estimates that more than half the job creation will accrue in four major metropolitan statistical areas: Edmonton, Montreal, Toronto, and Vancouver. Based on local workforce size and metro share of GDP, IDC forecasts the job gains as shown in Figure 5.

FIGURE 5

Cloud-Generated Job Growth by Metro Area — YE 2015 to YE 2020



Source: IDC, 2016

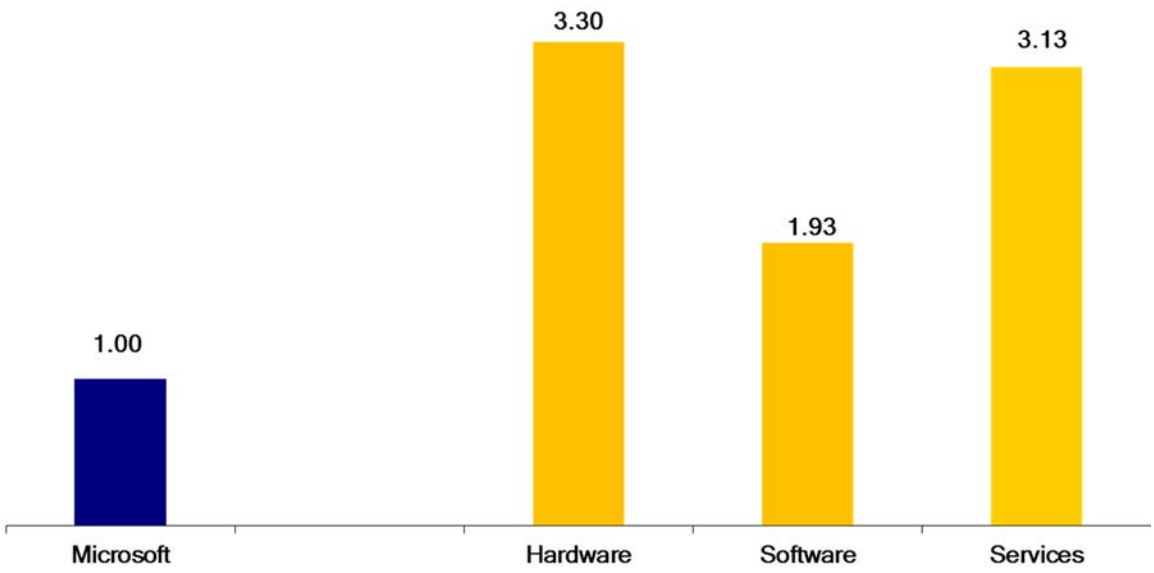
The Impact of the Microsoft Ecosystem

As of last year, IDC reports that nearly 60% of all software purchased in Canada ran on a Microsoft operating system, as did, by value, 75% of the PCs purchased and more than 50% of servers.

In fact, the value of hardware and software running on Microsoft software and services supporting those products far outweighed Microsoft's own revenues by nearly an order of magnitude. The ratio of Microsoft ecosystem revenues to Microsoft revenues in Canada is shown in Figure 6.

FIGURE 6

Microsoft Ecosystem Revenues* vs. Microsoft Revenues 2015



Note: * includes computers, peripherals, smart phones, software, and IT services

Source: IDC, 2016

The ecosystem, which includes hardware, software, services firms, and distribution channel firms, brought in nearly 22 billion CAD last year and invested nearly 7.4 billion CAD in the country on R&D, product development and testing, marketing and sales, training, and administration.

Although Microsoft revenue accounts for less than 5% of IT spending in Canada, nearly 40% of all IT industry or IT professionals in Canada are in the Microsoft ecosystem or work with or on Microsoft products.

One of the reasons the Microsoft ecosystem can be so big compared to Microsoft itself is the outsize impact of software. In 2015, software spending in Canada represented 22% of total IT spending. But because software is more complex to sell, service, and support than hardware, dollar for dollar, software generates more downstream economic activity than hardware.

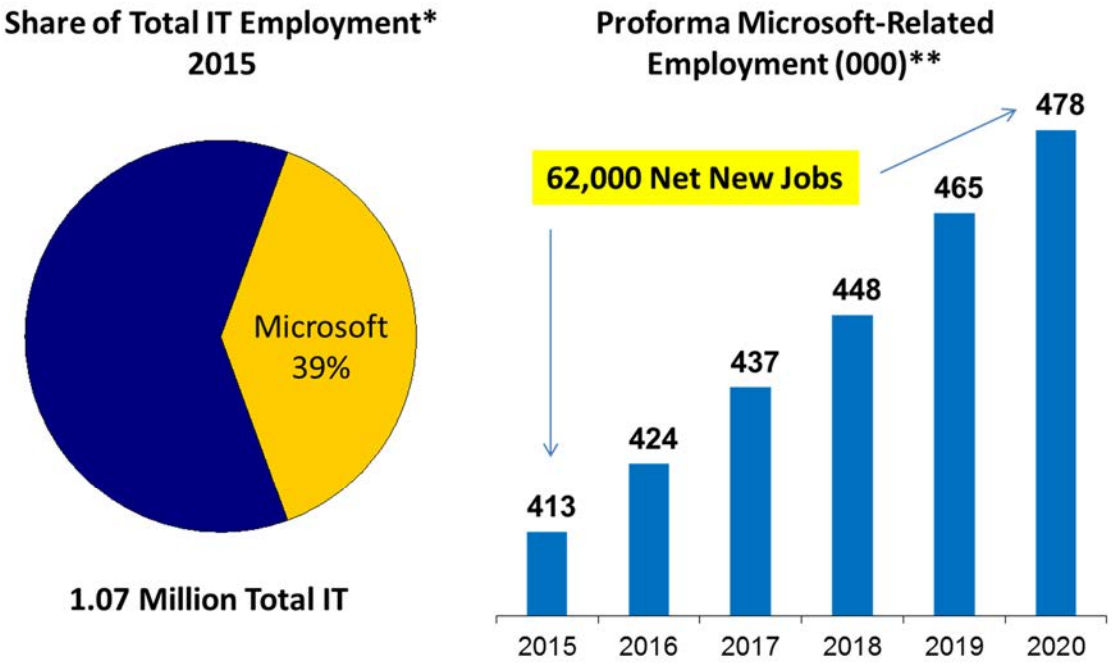
IDC's analysis of the IT services market, for instance, shows that for every dollar of packaged software sold, there is another 1.25 dollars in revenue to IT service firms. That software revenue and additional services revenue also drives revenue in the distribution channel. These multiple revenue streams pool to help fund employment.

As a result, that 22% of IT spending on software mentioned above drives more than 60% of IT employment (including IT professionals) in Canada.

IDC estimates that, if Microsoft's ecosystem's share of IT spending in Canada remains what it was in 2015 through 2020, the ecosystem will account for more than 60,000 new jobs in the IT sector and IT professionals in user companies, as shown in Figure 7.

FIGURE 7

Microsoft Ecosystem Share* of IT Employment



Note: * Employees at software, hardware, IT service firms, channel vendors and IT professionals at user organizations involved with Microsoft software

Note: ** Assumes Microsoft-related share of total IT employment remains the same as 2015

Source: IDC, 2016

The Microsoft Ecosystem and the Cloud

The Microsoft ecosystem's impact on cloud computing is not yet quantifiable. Although cloud computing is becoming a mainstream architectural paradigm, at less than 4% of IT spending it is still a young, fast-growing market where the competitive landscape is in flux. In 2014, for instance, the top 10 cloud software vendors worldwide had only 38% of the market. The top 100 accounted for only 73%. There is a lot more penetration of general IT budgets to be had for cloud computing. But of all the traditional software vendors with cloud offerings, Microsoft ranked first in cloud revenues.

Perhaps more importantly, Microsoft is one of the leaders in the market for what is called platform-as-a-service, or PaaS.

This area is one of the fastest growing in the cloud computing market – 21% a year between 2015 and 2020 in Canada – and is highly leveraged. PaaS is used to develop both cloud applications and normal applications, which, in turn drive demand for other software, hardware and services. What's more, PaaS can generally deliver applications faster than traditional application development techniques.

By looking at (1) the ratio of spending on SaaS to the spending on PaaS, (2) the ratio of spending for application development software to the spending on applications, and (3) spending on other software, hardware, and services that accompany the deployment of applications, one can develop a pro forma estimate of Microsoft ecosystem revenue to Microsoft PaaS revenue. In this case, that ratio is 20:1.

Further, Microsoft's large base of partners ensures that the ecosystem will have a sizeable impact on the cloud market – and drive a sizeable share of cloud computing benefits now and in the future.

SUMMARY AND OUTLOOK

As Greenspan said about IT's positive impact on the economy, so the research here says about cloud computing and its positive impact on the economy; and an increasing number of academic studies are also quantifying the positive impacts of cloud computing on business innovation, including the formation of start-ups.[7]

For the average citizen, the impact of cloud computing will be seen in new applications and business services coming onto the market and, perhaps, new job opportunities. For the average business executive, it means developing strategies for becoming a "cloud first," organization. For the average government official, it means both new policy imperatives and new possibilities for delivering services.

For IT companies it means developing strategies for integrating new cloud offerings with traditional products and services and helping clients in their migration to cloud-first IT models. The race is on.

[7] See *Cloud Computing Boosts Start-ups,* Joe McKendrick, Forbes November 21, 2013 at http://www.forbes.com/sites/joemckendrick/2013/02/20/cloud-computing-boosts-next-generation-of-startups-survey-shows/

Methodology

Since 2002, IDC has maintained an internal tool called the IDC Economic Impact Model (EIM), which takes inputs from IDC's market research on IT spending, exchange rates, vendor market share, and other public inputs, and gathers GDP, tax rates, and overall labor force data from other sources. The output of the EIM is IT company and employee counts by geographic region.

An ancillary model to the EIM is the Microsoft Ecosystem Footprint Model, which analyzes IDC published figures for the percentage of hardware and software products shipped that run on Microsoft software in any given year, as well as spending on services to deploy and support those products. It then compares it to IDC's estimate of Microsoft revenue for the geography in question.

Estimates of business value and job creation from cloud computing rely on IDC forecasts for spending on public and private cloud computing and research-driven algorithms that relate cloud spending to increased IT innovation and derivative increased business innovation.

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