



# Transforming the in-house tax function in China through technology

---

**A practical guide to 2020**

[kpmg.com/cn](https://kpmg.com/cn)



# Part A

## Introduction – before we begin

---

***It is vital to remember that the use of technology in a tax function needs to serve a purpose beyond merely the use of trendy new gadgets or following the lead of others.***



An Australian journalist recently described the world as being “in a moment between techno-rapture and techno-panic.”<sup>4</sup> This is the idea we are both excited and fearful of what the future may hold for us in a world where technological developments are on the precipice of a revolution increasingly being referred to as the fourth industrial revolution. The onset of this revolution has left many tax and finance managers feeling anxious that they may be left behind and uncertain of where to start. Indeed, the term “disruption”, which is so commonly bandied about to describe the effect of this revolution, evokes images more associated with fear than with education and opportunity. Our goal with this publication is to provide tax and finance managers with a framework through which they can engage, to learn the basics, and then begin the journey which will enable them to embrace the benefits of using technology in managing their tax function.

There are now many publications in the market which discuss the “Tax Function of the Future”, and they typically describe in ambitious terms how to transform a tax function so as to take advantage of technological developments in fields such as artificial intelligence, robotic process automation, blockchain, machine learning, augmented and virtual reality. Frankly speaking, some of these publications have the perverse effect of exacerbating the gap between those exhibiting signs of “techno-rapture” and those suffering from “techno-panic”.

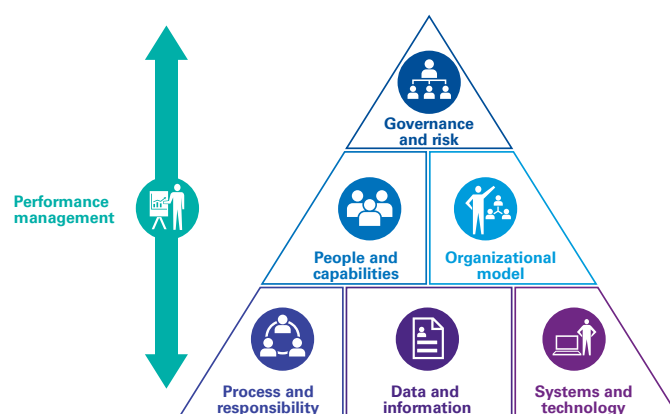
This publication deliberately does not seek to extend its focus beyond the immediate future – that is, the next 2-3 years. Instead, this publication is founded in the reality that for many in-house tax functions in China, the most common form of technology they utilise right now to manage their tax compliance consists of a number of Microsoft Excel spreadsheets which, if they are lucky, are stored on some form of commonly accessible drive within their organisation. The reality also being that tax functions for most medium and large companies in China still employ large numbers of people within the Finance team, whose role is very process oriented – for example, manually issuing Value Added Tax (VAT)

***In China, the most common form of technology they utilise right now to manage their tax compliance consists of a number of Microsoft Excel spreadsheets.***

invoices; engaging in a never ending quest to obtain information and data from within their own organisations’ business lines; or making adjustments or reconciliations between their financial statements, their tax returns, their Enterprise Resource Planning (ERP) systems, and the Golden Tax System.

This publication is founded in a core belief that to transform an in-house tax function with technology, one needs to ‘walk before you run’. That is the idea that to ask an organisation which is deeply rooted in traditionally manually oriented tasks to transform into a highly technologically enabled and adept in-house tax function requires a journey over a period of time. It is not a process in which you can be magically teleported to an environment which resembles something out of a science fiction film. Furthermore, it is vital to remember that the use of technology in a tax function needs to serve a purpose beyond merely the use of trendy new gadgets or following the lead of others – it needs to benefit the organisation in terms of savings, in terms of efficiency gains, and it should ideally also help move the tax function up the value chain within the organisation so that they become true ‘business partners’.

It is important to recognise that technology is but one, albeit integral, component to tax function transformation. As the below diagram highlights,<sup>5</sup> the operating model of a tax function comprises six key components, with the seventh component – performance management – as a measurement and performance tool to recognise the value contributed to the organisation. Technology and the related components of data and information which feed into technology solutions are increasingly important as we move into the third decade of the 21<sup>st</sup> century. However, technology also needs people with skills to operate and maintain it, an organisational model to support it, and it needs to enable or facilitate processes, governance and risk. In short, technology may be at the epicentre of any transformation strategy, but it must work in unison with the other components in order to be truly effective.



<sup>4</sup> ‘How to ensure Australia thrives when the robots come’, Peter Hartcher, Sydney Morning Herald, 30 September 2017, <http://www.smh.com.au/comment/how-to-ensure-australia-thrives-when-the-robots-come-20170929-gyrgr9.html>

<sup>5</sup> ‘Designing an Indirect Tax Function which is Fit for the Future’, KPMG International, 26 September 2016, <https://home.kpmg.com/xx/en/home/insights/2016/09/designing-an-indirect-tax-function-that-is-fit-for-the-future.html>

# Use of this publication

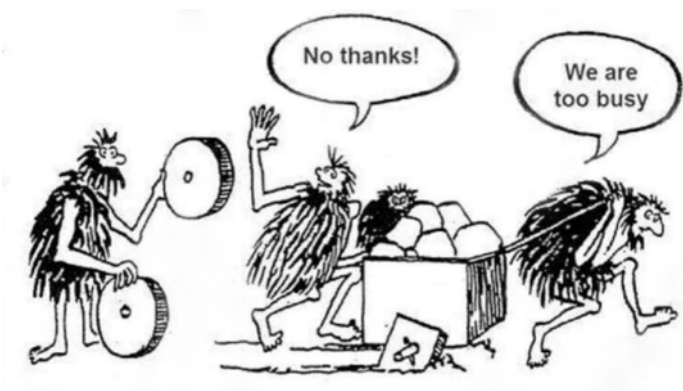
This publication is not intended to be suitable for all organisations. To use an analogy to best describe the intended audience for this publication, back in the late 1990s, plasma screen and LED televisions first hit the market. You may recall seeing one for the first time, perhaps on the wall of an upmarket restaurant, and being wowed by the clarity of the picture and the vividness of the colours. At that time, the price of those early plasma screen and LED televisions was over RMB 100,000. Over the course of the next 2-3 years, the technology became more mainstream, prices dropped, competition entered the market, demand increased, prices dropped yet again, and suddenly a plasma screen or LED television became accessible to a greater cross section of the general public with prices under RMB 10,000. In technological terms, the people who bought those early expensive plasma screens and LED televisions were regarded as 'early adopters'; while those who waited for the price to fall, for the technology to reach a point where it was also more stable and reliable, in other words those who join the pack rather than lead it, typically bought when the product reached its inflection point.

This publication is aimed at those organisations who prefer to participate at the inflection point. This means that while some organisations who are early adopters may be more focused in the period to 2020 in dabbling in artificial intelligence, robotic process automation, blockchain and the like, for the vast majority of tax functions wanting to start their transformational journey now, the question many of them ask is why should I do it, and where, how or with what should I start? This publication seeks to answer those fundamental questions and to guide them on a journey of discovery, transformation and enlightenment.

Importantly, we are not at all suggesting that more advanced technological developments are beyond reach – rather, we are suggesting that you need to 'walk before you run', learn along the way, and put yourself in as strong a position as possible to then be able to take advantage of these more advanced technological developments in a few years' time, once they too have reached their inflection point. Furthermore, to be clear, organisations like KPMG International are investing heavily in these advanced technological developments because we need to remain 'ahead of the curve', so as to guide our clients through these changes when they reach their inflection point. And the possibilities of what these advanced technological developments may deliver for tax functions is truly exciting.

As stated, the aim of this publication is to break down barriers to transforming an in-house tax function through technology, but to do so in a very user friendly and practical way. Throughout this publication, we try to avoid the use of complex acronyms or techno jargon, but where it is necessary to use industry terminology, we provide a clear glossary of terms for you to consult at the end for your reference.

Before we begin, let us not forget the most common 'excuse' heard for delaying technology, or change or transformation. It is the excuse that "we are too busy". But as the cartoon below<sup>6</sup> shows, is that really the case?



<sup>6</sup> Artist unknown.

# Themes – helping to understand the problem

Plainly for each organisation the problem you may be trying to solve through technology will have elements

which are specific to your organisation. However, there are many recurring themes we hear when speaking with clients. Consider the following examples:

**1** The people in our Finance team spend a lot of time doing manually oriented tasks to support our tax compliance process - how do we reduce that?

**2** Our organisation has trouble obtaining the data we need to prepare our tax filings – the data often has to come in from many different sources - is there a better way?

**3** We need to spend a lot of time each month checking, adjusting and/or reconciling data to ensure the accuracy of our tax returns, and even then, we are never really sure it is correct.

**4** As a Tax Manager, I struggle to have visibility over the activities or transactions being carried out by the business, or in knowing what is going on in the business. Is there a way to help me with this?

**5** I've heard the tax authorities in China are investing heavily in technology so that they can carry out data and analytics testing. I don't know what they may find with my organisation.

**6** As a Tax Manager, I spend most of my day trying to get the information from the business, in managing tax problems for transactions which have already happened – how do I get the time to actually be able to prevent problems from arising?

**7** The budget in my organisation will not be sufficient to allow me to hire new people, or to invest in technology to help me fix some of our existing problems.

What these themes highlight is the problems most organisations encounter, and why they turn to technology solutions, usually arise because of either inefficiencies in their current systems and/or processes, a desire for greater accuracy or insights, or because of a concern around potential risks. Knowing the problem you are

trying to solve by technology is a critical first step in the journey. To use an analogy, if you want to avoid unnecessary impulse spending, many people prefer to write a shopping list before entering the store. The same is true with technology. Know what your problem is before you embark on your journey.

# Sharing some secrets with you – a critical framework

To help you start with your journey of discovery, let us share three little secrets with you. These little secrets go to the core of why some tax managers balk before enhancing their knowledge of technology.

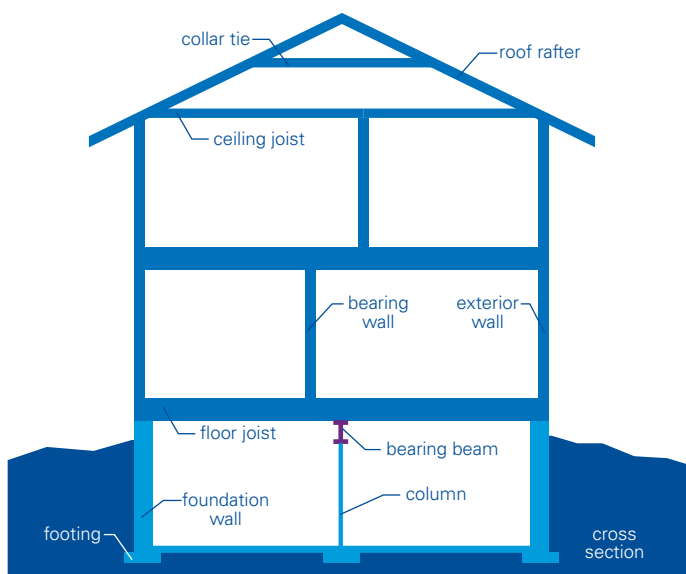


## How does the tax technology help?

Right now most tax technology solutions in the market can be broadly placed into one of four different buckets:

- (1) compliance related solutions;
- (2) insight related solutions;
- (3) process management solutions; and
- (4) accessories, components or infrastructure which enable or facilitate (1), (2) or (3).

Let's look at each of these buckets in turn. However, before we do so, we are going to use an analogy to describe the role that each of them play as a part of a tax technology enabled tax function. The analogy is with the building of a house.



### *Compliance related solutions*

Compliance related solutions refer to those solutions that either help you to prepare, or file, tax returns more efficiently, more accurately, or in a more highly automated way, or perform similar automation functions for invoicing purposes. These solutions can help with either specific taxes, or with the full range of tax returns from VAT filings (including invoicing), to Corporate Income Tax (CIT) filings, even to stamp duty. Most compliance related solutions are like the walls and roof of a house – they are both integral and critical. Most tax experts would readily accept that to get their compliance handled both efficiently and accurately is at the core of their responsibilities.

### *Insight related solutions*

Insight related solutions refer to the broad category of technology solutions that give you greater insights into the accuracy of your tax related data, to help you either identify potential tax risks up-front, or enable you to identify errors or inconsistencies in your tax filings. Examples may include software solutions which allow you to carry out sophisticated data and analytics to identify errors in your tax reporting, or to analyse the margins on your products for transfer pricing purposes, in assisting with the identification of permanent establishment risks, or even to help calculate tax liabilities of expatriates employed by your organisation around the world. Returning to our analogy of building a house, insight related solutions are like the interior decorations used in a house. They are what makes the house visually appealing and attractive. They are also functional in the sense that they allow for the proper enjoyment of the whole house.

Source: Carson Dunlop, 2008, <http://www.carsondunlop.com/hrbook/PDF/Structure.pdf>

### Process management solutions

Process management solutions are those solutions which help to manage either a specific process or an end-to-end process, by making the right information available to the right person at the right time. More specifically, these are solutions which may help to manage workflow within your tax function, or possibly within your organisation. They are not solutions which 'do' anything in the sense that they are focused more on facilitating the process, rather than the outputs of the process. As such, they may not provide insights into your tax data, and they may not prepare the tax returns you need. Rather, they help to manage these processes by making your organisation operate more efficiently. Some examples of the solutions we are talking about would include workflow solutions which help to track the tax return preparation and approvals processes; or perhaps a solution which stores your tax working papers in one place so that they are accessible to your tax team. In the context of our analogy of building a house, think of these solutions as being the concrete which holds the bricks together.

### Accessories, components or infrastructure

The accessories, components or infrastructure refer to those hardware or software solutions which typically are built into your tax technology software, or which enable or facilitate the automation of compliance or the delivery of insight related solutions. Examples would include solutions which manage the data extraction process, or which help to deliver visualisations of your data, or even solutions which allow you to store data, such as cloud computing or a data warehouse. The accessories, components or infrastructure may not be the 'sexy' aspect of tax technology, but they will often be the building blocks which can make the difference between a successful deployment or not. Think of these as being the foundations of your house.

To complete the analogy, a house needs to be constructed on solid foundations, the walls need to be held together with concrete, and your enjoyment is enhanced with the furnishings and fittings. The point being that a tax technology strategy needs to combine these elements in harmony – investment in one component to the total exclusion of another may be catastrophic.



## Change will ordinarily be incremental

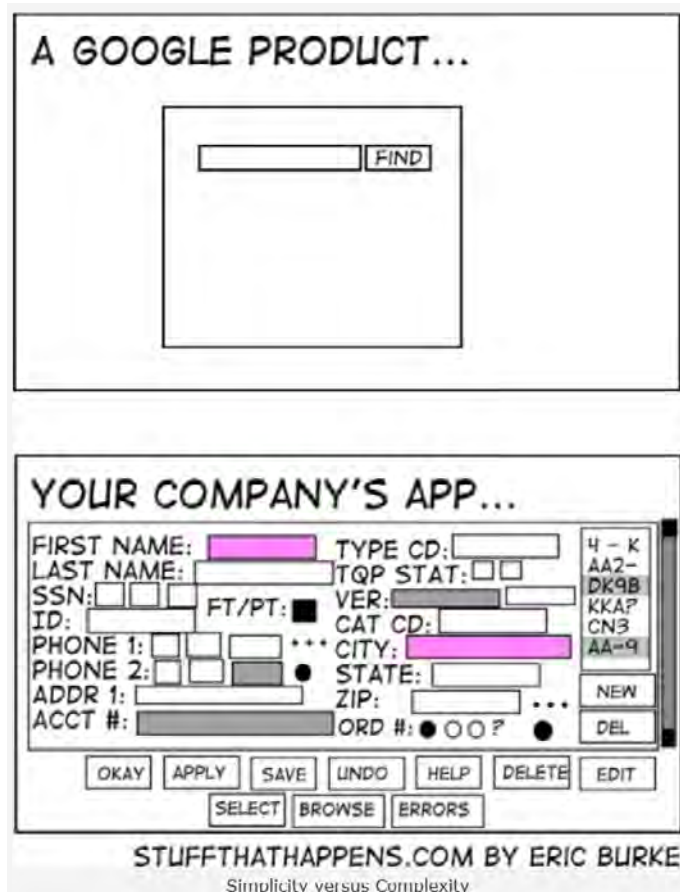
It is a simple fact that for most organisations, the incorporation of technology solutions into your tax function will be achieved incrementally, not radically. In other words, many in-house tax functions may not necessarily be the next Tencent, Alibaba or Huawei of the tax world – instead, they will strive to be more efficient, cost effective, and deliver more value to their organisations, each year surpassing the last. So again, while the early adopters may be striving more ambitiously and experimenting and investing in research and development, the reality is that for most organisations change will be achieved through a series of bite sized steps.

To use an analogy to show the benefits of incremental change, when electronic payments were first launched through the internet, consumers often expressed concern about the security of their data. While those concerns may still be evident to some extent, advances in digital security have reduced those concerns and most consumers engage now in electronic payments without further thought. In other words, what may have seemed risky or difficult 2-3 years ago, is now a routine task. So the challenge here will be to do things each day or each month slightly differently from the one before, and over time, you and your organisation will adapt. Change also does not happen automatically, nor does it happen without some pain.



## Be realistic

It is critically important to be realistic about what will be achieved in the early days with tax technology. Sometimes tax managers associate automation of the tax compliance process with the idea that each month, they will be able to press a single button on a computer and out comes a perfectly completed tax return, all correct and complete. Unfortunately, that is the work of science fiction. Moreover, if it were true then the role of the tax manager would likely become redundant very quickly. The reality may be more akin to what you see in the below cartoon:<sup>7</sup>

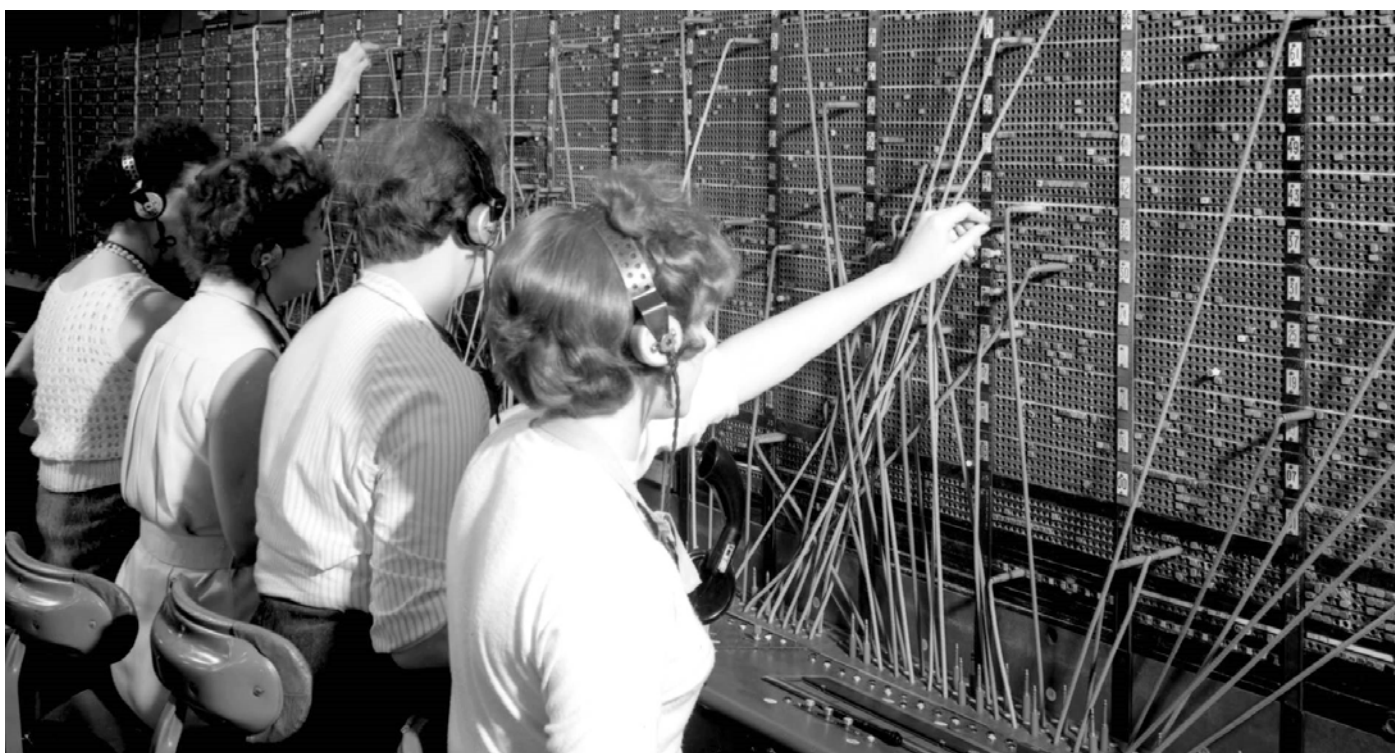


Why is it we say that total tax automation is more aspirational, rather than real, at least in the period to 2020?

While we may all wish for perfection in tax automation, it's important to recognise why limitations exist. For example, perfection in tax automation would require an organisation to have perfect data inputted into their system, for the data to be collected and stored in a way which is deliberately set up for the tax function, for the data to be complete, and for there to be no manual reconciliations or adjustments needed. This is simply unrealistic right now in most organisations. The reality is more like the following:

- **Many organisations maintain data in multiple systems** – this will often require some form of reconciliation because those systems may not always 'speak' to each other;
- **The data which is maintained in ERP systems often contains errors, anomalies or is incomplete**, because ultimately most data is still inputted by someone manually. In the future this may change with advances in optical character recognition (OCR) technology so that it is more accurate and complete, but this is still a few years away yet for most organisations;
- **Most ERP systems are not built with the tax function in mind**, so therefore we cannot expect the reporting data to be perfectly suited for the tax function's needs; and
- **Compliance with China's tax rules does require adjustments to be made which fall outside transactions that are recorded in an ERP system.** A great example of this is deemed sales transactions whereby output VAT may be payable for goods or services which are given away for no sales revenue (essentially 'free'). Similarly, an organisation may make some exempt sales for VAT purposes, or incur non-deductible entertainment expenses, and frequently these adjustments happen through manual intervention. So there will often be changes which happen 'outside the system', and these require real people to manage the effort.

<sup>7</sup> Eric Burke, <http://stuffthathappens.com>



Source: The Making of Information Age: Enfield Telephone Exchange, [https://www.youtube.com/watch?v=GVDGuCjog\\_0](https://www.youtube.com/watch?v=GVDGuCjog_0)

There is an increasingly important field of expertise emerging around data integrity, especially for the tax function. This is the idea that while we may strive to use Big Data, ultimately its utility very much depends upon having trust in the data being used in preparing the tax returns – that is, that the data is accurate, correct and complete. In very simple terms, it is the adage that any investment in technology is limited by the fact that ‘garbage in = garbage out’.

In our experience, one outcome which can happen when first starting to invest in tax technology is to discover that the solution being deployed does not work effectively because the underlying data lacks integrity. This may result in the immediate project being diverted to fix the problems with data integrity – for example, by including additional data points which are recorded through an ERP system so as to allow better testing and analysis, or by correcting errors in the data – referred to as ‘data cleansing’. While this may seem frustrating at the time – it is important to recognise that this can happen, but the end result of this temporary diversion in resources is a longer lasting and higher quality series of outcomes. In other words, recognise that you may need to take one short-term step backwards in order to take two longer-term steps forwards.

To give a concrete example of this, recently our KPMG China tax team carried out an analysis of a client’s ERP data. One of the client’s objectives was to identify and be able to reconcile the receipt of special VAT invoices as recorded in the Golden Tax System with potentially available input VAT credits reflected in their ERP system. However, while we were able to carry out the reconciliation process with reasonable accuracy, through this process we identified a simple change needed in the client’s data entry into their ERP system which would enable near real-time reconciliations to occur. So the primary outcome was a simple process change which would better align the client’s data needs for the future, with consequential efficiency benefits.

The moral of this story is that the adoption of technology as part of a tax function transformation process may not necessarily yield the immediate results you expect, nor should you expect it to fully automate your tax function. There will be learnings along the way, and the journey you are embarking upon should be seen as a permanent feature in your organisation, not as a ‘set and forget’ short-term project.

# Contact us



**Lewis Lu**  
Head of Tax  
KPMG China  
E: [lewis.lu@kpmg.com](mailto:lewis.lu@kpmg.com)  
T: +86 (21) 2212 3421



**Chris Ho**  
Tax Partner  
KPMG China  
E: [chris.ho@kpmg.com](mailto:chris.ho@kpmg.com)  
T: +86 (21) 2212 3406



**Lachlan Wolfers**  
Head of Indirect Tax  
Tax Technology Chair  
KPMG China  
E: [lachlan.wolfers@kpmg.com](mailto:lachlan.wolfers@kpmg.com)  
T: +852 2685 7791



**Alexander Zegers**  
Director Tax Technology & Analytics  
KPMG China  
E: [zegers.alexander@kpmg.com](mailto:zegers.alexander@kpmg.com)  
T: +852 2143 8796



**Lilly Li**  
Tax Partner  
KPMG China  
E: [lilly.li@kpmg.com](mailto:lilly.li@kpmg.com)  
T: +86 (20) 3813 8999



**Michael Li**  
Tax Partner  
KPMG China  
E: [michael.y.li@kpmg.com](mailto:michael.y.li@kpmg.com)  
T: +86 (21) 2212 3463



**Tracy Zhang**  
Tax Partner  
KPMG China  
E: [tracy.h.zhang@kpmg.com](mailto:tracy.h.zhang@kpmg.com)  
T: +86 (10) 8508 7509



**Stanley Ho**  
Tax Partner  
KPMG China  
E: [stanley.ho@kpmg.com](mailto:stanley.ho@kpmg.com)  
T: +852 2826 7296

## Mainland China

---

### Beijing

8th Floor, KPMG Tower, Oriental Plaza  
1 East Chang An Avenue  
Beijing 100738, China  
Tel : +86 (10) 8508 5000  
Fax : +86 (10) 8518 5111

### Chongqing

Unit 1507, 15th Floor, Metropolitan Tower  
68 Zourong Road  
Chongqing 400010, China  
Tel : +86 (23) 6383 6318  
Fax : +86 (23) 6383 6313

### Fuzhou

Unit 1203A, 12th Floor  
Sino International Plaza, 137 Wusi Road  
Fuzhou 350003, China  
Tel : +86 (591) 8833 1000  
Fax : +86 (591) 8833 1188

### Hangzhou

12th Floor, Building A  
Ping An Finance Centre, 280 Minxin Road  
Hangzhou, 310016, China  
Tel : +86 (571) 2803 8000  
Fax : +86 (571) 2803 8111

### Qingdao

4th Floor, Inter Royal Building  
15 Donghai West Road  
Qingdao 266071, China  
Tel : +86 (532) 8907 1688  
Fax : +86 (532) 8907 1689

### Shenyang

19th Floor, Tower A, Fortune Plaza  
61 Beizhan Road  
Shenyang 110013, China  
Tel : +86 (24) 3128 3888  
Fax : +86 (24) 3128 3899

### Tianjin

Unit 06, 40th Floor, Office Tower  
Tianjin World Financial Center  
2 Dagu North Road  
Tianjin 300020, China  
Tel : +86 (22) 2329 6238  
Fax : +86 (22) 2329 6233

### Chengdu

17th Floor, Office Tower 1, IFS  
No. 1, Section 3 Hongxing Road  
Chengdu, 610021, China  
Tel : +86 (28) 8673 3888  
Fax : +86 (28) 8673 3838

### Foshan

8th Floor, One AIA Financial Center  
1 East Denghu Road  
Foshan 528200, China  
Tel : +86 (757) 8163 0163  
Fax : +86 (757) 8163 0168

### Guangzhou

21st Floor, CTF Finance Centre  
6 Zhujiang East Road, Zhujiang New Town  
Guangzhou 510623, China  
Tel : +86 (20) 3813 8000  
Fax : +86 (20) 3813 7000

### Nanjing

46th Floor, Zhujiang No.1 Plaza  
1 Zhujiang Road  
Nanjing 210008, China  
Tel : +86 (25) 8691 2888  
Fax : +86 (25) 8691 2828

### Shanghai

25th Floor, Tower II, Plaza 66  
1266 Nanjing West Road  
Shanghai 200040, China  
Tel : +86 (21) 2212 2888  
Fax : +86 (21) 6288 1889

### Shenzhen

9th Floor, China Resources Building  
5001 Shennan East Road  
Shenzhen 518001, China  
Tel : +86 (755) 2547 1000  
Fax : +86 (755) 8266 8930

### Xiamen

12th Floor, International Plaza  
8 Lujiang Road  
Xiamen 361001, China  
Tel : +86 (592) 2150 888  
Fax : +86 (592) 2150 999

## Hong Kong SAR and Macau SAR

---

### Hong Kong

8th Floor, Prince's Building  
10 Chater Road  
Central, Hong Kong  
  
23rd Floor, Hysan Place  
500 Hennessy Road  
Causeway Bay, Hong Kong  
Tel : +852 2522 6022  
Fax : +852 2845 2588

### Macau

24th Floor, B&C, Bank of China Building  
Avenida Doutor Mario Soares  
Macau  
Tel : +853 2878 1092  
Fax : +853 2878 1096

## Ignition and Start-up Centres

---

### KPMG Digital Ignition Centre

21st Floor, E07-1 Tower  
Suning Intelligent City  
272 Jiqingmen Street  
Nanjing 210017, China  
Tel : +86 (25) 6681 3000  
Fax : +86 (25) 6681 3001

### KPMG Innovative Startup Centre

Room 603, 6th Floor, Flat B  
China Electronic Plaza  
No. 3 Danling Street  
Beijing 100080, China  
Tel : +86 (10) 5875 2555  
Fax : +86 (10) 5875 2558

[kpmg.com/cn](http://kpmg.com/cn)

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

© 2018 KPMG, a Hong Kong partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Hong Kong.

The KPMG name and logo are registered trademarks or trademarks of KPMG International.

Publication number: HK-TAX18-0001

Publication date: January 2018