

出國報告 (出國類別：開會)

出席

Asian Financial Services Regulators
Roundtable in Singapore

&

ASIFMA Annual Conference 2016

會議報告

服務機關：國家發展委員會

出國人姓名職稱：莊明芬 副處長

黃孟谷 科員

出國地區：新加坡

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關鍵詞：區塊鏈、Fintech、雲端技術、金融服務、資訊安全

內容摘要：(二百至三百字)

微軟亞太營運中心為亞太地區各國相關主管機關就雲端發展趨勢、Fintech 創新應用、雲端技術之可用性及安全性、區塊鏈 (Blockchain) 及資訊安全等議題，建立資訊新知交流契機，特別舉辦 Asian Financial Services Regulators Roundtable 圓桌會議，以提升亞太地區面對新興科技浪潮之因應策略與共識，同時在促進服務創新之際亦能兼顧資訊安全，降低風險，提升雲端服務之資訊安全。

11 月中旬時值新加坡金融科技 (Fintech) 週，新加坡金融主管機關及銀行公會紛紛舉辦相關研討會活動，亞洲證券暨金融市場協會 (Asia Securities Industry & Financial Markets Association, 簡稱 ASIFMA) 亦舉辦 ASIFMA Annual Conference 2016 年會，探討金融科技浪潮下的金融產業創新及因應策略。

目 次

壹、目的.....	7
貳、過程.....	8
參、會議重點.....	11
肆、心得與建議.....	22
一、心得.....	22
二、建議.....	24
伍、附錄(會議議程及資料).....	25

壹、目的

- 一、 參加微軟亞太營運中心於 105 年 11 月 16 日在新加坡舉辦 Asian Financial Services Regulators Roundtable，瞭解數位浪潮下的金融服務業發展雲端服務產品之創新需求，及雲端供應商在數位時代下之因應對策。同時參觀微軟公司於亞太地區新設之首座資安聯防機構，該機構結合「微軟技術透明中心 (Microsoft Transparency Center)」及「微軟網路安全中心 (Microsoft Cybersecurity Center)」，此一資安聯防機構之設置，有利於提升並促進亞太地區對於資安議題的聯防量能與技術創新。

- 二、 參加亞洲證券暨金融市場協會(Asia Securities Industry & Financial Markets Association)於 105 年 11 月 17-18 日舉辦 ASIFMA Annual Conference 2016 年會，探討金融證券業隨著數位高科技發展以及國際 FinTech 應用趨勢，在兼顧資訊安全下，於創新支付、理財投資、存貸收付、巨量資料與客戶服務管理及資訊應用等領域，掌握產業變革，開創優質的金融產業服務新模式。

貳、過程

為提升並促進亞太地區各國相關主管機關對於雲端資訊安全與創新等議題的認識，微軟亞太營運中心特別於 105 年 11 月 16 日舉辦 Asian Financial Services Regulators Roundtable 圓桌會議，邀請日本、印度、香港、馬來西亞、越南等亞太地區共 11 個國家的中央銀行及金融監管機關等代表共同參與，本次會議就雲端發展趨勢、Fintech 創新應用、雲端技術之可用性及安全性、區塊鏈 (Blockchain) 及資訊安全等議題，建立資訊新知交流契機。

亞洲證券暨金融市場協會(Asia Securities Industry & Financial Markets Association, 簡稱 ASIFMA)係為獨立之亞洲區域貿易協會，目前共有 90 餘個會員，會員來自銀行、律司事務所、資產公司、財金公司、證券業等領域，在此一交流網絡平臺，分享財經產業資訊，以促進亞洲地區產業的深度發展，進而活躍資本市場。ASIFMA 成立宗旨亦倡議，在穩健、創新及競爭的環境中共逐經濟成長，在社經環境變局中提供最佳解決案例，發展業界標準，降低營運成本，進行跨國合作交流，提升相關產業營運績效，為達成協會設立之宗旨及目標，ASIFMA 協會亦與美國 GFMA 協會及歐洲 AFME 協會進行國際比較研究，提供會員洞察趨勢之研究報告，瞭解國際最佳範例解決策略，作為業界標竿學習，並引入相關業界標準供會員參考。ASIFMA 並將研究成果，出版多種證券金融之研究報告，供會員參考。

一、11月16日 Asian Financial Services Regulators Roundtable

此圓桌會議為微軟公司所規劃舉辦，會議地點為微軟新加坡總部，會議主要就雲端發展趨勢、Fintech 創新應用、雲端技術之可用性及安全性、區塊鏈(Blockchain)及資訊安全等議題(詳附件會議議程)，由微軟介紹該公司最新的雲端服務應用產品，為新的金融產業提供最佳解決方案，提升整體運作效率，同時與各國與會者行意見交流，建立資訊新知交流契機。

二、105年11月17-18日 ASIFMA 協會於假 Marina Mandarin Ballroom 舉辦 ASIFMA Annual conference 2016 年度大會。

為期兩天的研討會議程（詳附件會議議程），說明如下：

- (一) 11月17日上午場次為閉門會議，主辦單位邀請核心會員參加。
- (二) 11月17日下午場次議題為金融科技、機會、風險與挑戰 (Fintech, Opportunities, Risks and Challenges)。
- (三) 11月18日上午場次包含二項議題

議題一：巨量資料 - 人工智慧、機器學習及機器人理財顧問

(Big Data: Artificial Intelligence, Machine Learning and Robo Advisors)

議題二：資訊安全，雲端與隱私保護：前進之路

(Cybersecurity, the Cloud and Privacy : the Way Forward)

(四)11 月 18 日下午場次為邀請制，主辦單位邀請協會會員參與圓桌論壇總結報告。

本會因非屬 ASIFMA 協會會員，因此參加 11 月 17 日下午及 11 月 18 日上午兩場次與資訊科技有關之論壇。

參、會議重點

一、11月16日 Asian Financial Services Regulators

Roundtable

隨著行動網路、數位時代的來臨，許多新創事業開始從事各種傳統銀行所提供的金融服務，如貸款、換匯、支付等，金融機構開始面臨威脅，因此微軟認為推動金融服務的數位化轉型將是未來的趨勢。

具調查，未來 80%的銀行客戶將轉移到能提供個人化服務的金融機構，且目前傳統銀行對於管理風險、監管、系統的成本過高，因此金融服務的數位化轉型對於銀行來說有巨大的需求。

數位化轉型對於維持金融服務的競爭優勢至關重要，不僅能吸引客戶，提供良好的金融服務體驗，更能優化風險管理的操作，減少營運成本，並透過客戶的回饋，持續改善金融商品及服務。日本三菱東京日聯銀行在其報告中亦表示，透過雲端服務，替公司節省數百萬美元的營運成本。

據統計資料顯示，2016 年金融服務業採用雲端服務協助營運的比率已超過其他市場，透過雲端技術服務，提供可租用的網路基礎設施、軟體程式工具、較高的頻寬等，有效降低金融服務業的營運成本。因此，微軟希望能透過該公司雲端平台，提供具透明度、隱

私性、合法及安全監控等服務，與客戶間建立合作夥伴關係，協助客戶實現數位化轉型的目標。

微軟亦於會議中說明其雲端服務提供客戶 3 項保證，包括雲的安全性、透明度，及具控制性。

在雲端安全部分，微軟雲端平台服務遍及全球 30 個地區，透過數據中心使用安全控制台進行雲端平台的管理操作，並使用多重身分驗證系統，以保護雲中的敏感數據和應用程式的安全，同時，集中管理使用者在 Azur、O365 等數百個雲端應用程式，並在各數據中心端點傳輸數據時予以加密，以確保資訊的安全。

在雲端透明度部分，透過客戶端數據的分析，微軟雲提供相關服務評估報告，並依據報告建議客戶數據監控調整方向，協助管理其數據安全，以符合客戶的監控標準，同時，為利客戶檢查各項數據，亦提供瀏覽控制的設定及查驗結果，並配置警報系統，以協助檢視數據是否異常。

在雲端控制部分，微軟提供客戶目前雲端配置的安全分數，並針對客戶的配置與其他人的配置進行比較及分析，最後將建議客戶如何調整相關設定以提高其安全分數。此外，微軟亦提供多因素認證、訊息保護、預防數據洩漏等服務，以確保客戶使用上的安全性。

會議最後，微軟請 KPMG 講者 Bob Hayward 就區塊鏈的議題進行簡報。區塊鏈技術由密碼學、數學、演算法等所組成，結合點

對點的網路關係 (P2P) ，並採用分散式共識演算法。其運作原理由多個節點組成一個網路，當某一個節點要發起一筆交易時，會先將交易廣播給其他節點，此時所有節點都可以經由共識演算法來決定誰可以驗證這筆交易。這個機制讓所有節點能共同維護一本帳本，以確保公平與安全性，一旦有人入侵網路想竄改帳本紀錄，也會立刻被發現。

目前區塊鏈已有許多應用，包括金融、保險、契約、支付等領域，透過區塊鏈技術的交易紀錄系統，消費者與企業再不需要透過金融中間人才可以進行交易，可以更快、更安全且更低成本的方式進行財產交易、稽核與監管等，如將原先需要 2 到 3 天才能完成的支付結算工作縮減為當日完成。

展望未來，區塊鏈的技術除應用於金融證券業之外，對於其他政府公共服務的應用，亦展現多元發展的契機，如土地所有權以區塊鏈智能合約登記，以利買賣雙方、銀行、政府透過區塊鏈追蹤交易度，再者，如電子投票(ivoting)，使用區塊鏈電子投票服務，可以加快速度且過程能被安全的記錄下來，區塊鏈更可運用於身分認證，於虛擬世界提供基礎的簡化驗證流程，讓民眾更能掌控自己的資料。上述的應用雖尚屬觀念驗證 POC (prove of concept) 階段，惟區塊鏈未來應用的可行性確實無限寬廣，各界應多多投入這個領域，掌握其可能的發展。

二、11 月 17 日 ASIFMA Annual conference 下午場次

議題：金融科技、機會、風險與挑戰 (Fintech, Opportunities, Risks and Challenges)

Jacqueline Loh, Deputy Managing Director, Monetary Authority of Singapore 等講者就上開議進行闡述。

數位浪潮革命席卷各產業，金融業首當其衝！Bank3.0 時代，新興的科技力量與創新的商業模式顛覆傳統產業的遊戲規則，金融科技的興起，固然是金融業轉型尋找創新價值的契機，卻也不得不面對網路科技公司競食數位金融市場的危機。再者，客戶行為亦在數位的浪潮中，產生質化與量化的轉變，無線寬頻的廣佈、社群媒體的崛起，智慧型行動裝置的躍進，翻轉客戶的使用習慣，傳統分行的存在已逐漸由虛擬通路 - 網路銀行所攻佔，當客戶可以不受時間及地點的限制，在行動銀行處理金錢交易等多元服務時，傳統的金融分行服務模式已難以滿足一般使用者行動化的需求。因此，科技、法令、市場、客戶無一不在變動的情形下，勢將重塑金融產業生態，如何擬訂策略，以科技導入 (fintech) 挹助創新，調適過時法令進行監理沙盒實驗 (sandbox)，擴大商業利基，運用社群媒體緊密互動，深耕客戶需求，這些都將是未來金融業的挑戰。

在當今變局中，究該如何藉助數位科技與新一代 IT 架構，部署快速敏捷的科技戰力，將左右金融數位轉型的成功關鍵。具體策略因應之道分析如下：

(一)尋求業務的重新定位與轉型：

以客為本，運用科技提升現有業務效益。以分行實體通路而言即是重要的轉型，從實體到虛擬，雖無固定的典範模式，但已有多個成功創造新價值的模式出現，其共同點是減少高櫃而專注在低櫃，即高櫃作業交給虛擬通路，實體通路轉向以服務與銷售為主。另外，建構新型態的旗艦智慧體驗分行亦是王道，諸多國家已開始著手啟用新型態分行，明亮的環境，舒適的空間，美味的點心與咖啡 bar，充滿高科技的佈署與觸控式多媒體或 Pad 等科技裝置，介紹產品與查詢服務，甚至在銀行入口處提供機器人迎賓，吸引集客效果，抒解客戶等候的不耐，有些分行在假日則搖身為小型電影院供客戶使用，種種氛圍的營造，為的就是使銀行不再只是銀行，在時尚的空間中，兼顧效率與服務，展現未來銀行形象，大大為銀行品牌加分，來顛覆客戶的使用體驗。

(二)主動出擊，推出革新產品與服務

型塑全新品牌、創新數位經營模式獲取新的客群，過去，銀行為客戶提供客製化服務者，集中在前百分之二十的客戶中，但拜數位時代及巨量資料技術加持下，可以運用數位工具與大數據分析，從客戶使用不同通路與各種不同服務時，精準規劃客戶所需服務，並與之互動，主動規劃客戶適性產品，循此脈絡發展下，銀行內部類似之跨單位整合，勢必受到衝擊與挑戰，如何打破既有分歧之業務流程與組織架構，打掉重煉，全面打造以客為本的組織與支援體系，亦為變動環境下金融業的挑戰之一。

此外，跨通路的服務拆解與重整之後，另外的關鍵是，銀行亦

須針對所蒐集的客戶數位軌跡，輔以巨量資料解析，發掘客戶的潛在需求，打造專屬的個人化服務，給客戶最優質的互動體驗與使用情境，將有助於擴展客戶並深化客戶服務，找回客戶的信心。

(三)異業競合出奇制勝

在金融科技不斷推陳出新，區塊鏈應用與導入等等的創新過程，如何快速到位的靈活部署，有賴串聯外部 IT 技術領導廠商資源，調整營運策略，才能推動金融快速創新，為金融業找出新方向與新商機。

以行動支付為例，智慧型手機 APP、晶片卡、二維條碼等多種工具進行支付，每種行動支付工具的背後皆在其利基，行動科技的長足進步，帳戶革命的力道將足以解構銀行產業，科技業者如 Google、Paypal、電信業者、手機業者與軟體業者皆虎視眈眈積極搶進傳統銀行業務，面對產業版圖無情的變遷與遞移，如何在數位洪流中站穩腳步，勢必要與非原生金融業者之科技業廣泛合作，協力形成夥伴關係，強化突圍的量能，驅動金融服務再進化，銀行的數位轉型勢將成為關鍵。

持續關注國際金融趨勢的發展與應用，以區塊鏈為例，區塊鏈本質上是一個基於對等網絡 (Peer-to-Peer) 網路架構的分散式帳本技術 (Distributed Ledger Technology, DLT)，它源自於比特幣的底層技術，但近兩三年來，區塊鏈技術已經有了快速蓬勃的發展，漸漸成為一個新的平台技術，並有許多的應用正在發展。全球四大銀行，瑞典銀行、德意志銀行、西班牙國際銀行、

紐約梅隆銀行，聯手打造數位貨幣，利用區塊鏈清算和結算金融交易，過去金融機構在購買股票或債券時必需先完成轉帳手續，現在可以利用數位貨幣進行支付，之後再在央行結算，大大減省交易時間與營運成本，同時提升整體運作效益。

金融科技浪潮下，機會、風險與挑戰總是相倚相伴，如果能在變局中掌握策略開拓先機者，就是贏家，能夠穩操勝算不被數位時代淘汰。

二、11月18日 ASIFMA Annual conference 上午場次

議題一：巨量資料 - 人工智慧、機器學習及機器人理財顧問

(Big Data: Artificial Intelligence, Machine Learning and Robo Advisors)

由 Adrain Gostick, Chief Revenue Officer, BondIT 等講者就上開議進行與談。

1995 年起，Amazon、Google 等大型電子商務網站與網路搜尋服務陸續出現，Facebook 等社群網站逐漸盛行，智慧行動裝置廣泛使用，以及近年來穿戴裝置和工業網路(Industrial Internet)等物聯網(Internet of Things)應用再度成為關注議題。新興網路科技發展帶來大量聯網的人與物，有別於傳統結構化的交易資料，新興科技帶來的資料源更多屬於非結構化的資料，如網站 Log、社群網頁、影音圖檔等，而且資料是源源不斷迅速的產生，正因為這些特

徵，「巨量資料」具有 4V 特性：Volume(大量性)、Variety(多樣性)、Velocity(迅速性)、Veracity(真實性)。

新興資料源帶動巨量資料創新應用模式，以簡單的公式來表示即，「資料」加上「處理演算」發掘出「商業智慧」。「資料」包括大量、多樣、即時的資料；「處理演算」在整合儲存各種來源的各式資料，並且符合成本效益(金錢與時間效益)；「商業智慧」則是要分析了解客戶的需求或者提高經營效率。

巨量資料在各個領域已有多元化的應用，在金融等商業領域，運用資料驅動與人工智慧技術，在高度科技的結合下，發展出智能機器人，機器人理財顧問已經在諸多國家的金融業及基金理財顧問公司開始提供服務，然而機器人理財顧問是否將排擠傳統理專業務？拜金融海嘯之賜，瓦解了社會上對金融機構的信任度，伴隨科技興起，機器人簡單及效率化的服務，趁勢而起，金融業推出機器人進行資產配置與理財諮詢，這已不是噱頭。機器人的服務除了達到集客效果之外，有哪些面向值得我們省思。

(一)思考「資料」的影響力，應蒐集更多元的資料，據以深入分析，幫助決策。解讀使用者的潛在需求，精進銀行的服務，發展創新產品。

(二)協力與合作，以資訊系統的人工智慧，加上人力的專業素質，如以機器人為例，開創不同層次的服務模式。

(三)高度運用科技巔覆傳統推升商機，鼓勵財金相關機構投資新的商業應用領域，以科技的應用搶佔市場先機。

(四)打破陳規，敢於跳脫不合時宜的法令，聯結其他科技資源（如與新創公司合作），啟動跨域實驗平臺，布局新藍海。

(五)巨量資料分析的背後不忘衡平隱私保護，個人資料保護對於金融加值服務，仍是必須遵守的紀律。

議題二：資訊安全，雲端與隱私保護：前進之路

(Cybersecurity, the Cloud and Privacy : the Way Forward)

由 Kevin Fedigan, Head of Asset Servicing and Broker Dealer Services, BNY Mellon 等講者就上開議進行與談

數位金融的崛起，跨境的網路交易日漸普及且比重增高，無所不在的連網環境帶來便利，卻也帶來高度風險，近幾年跨國的金融資安攻擊事件及網路犯罪層出不窮，全球網路金融犯罪竊取的金額估計高達四千多億美金，如駭客集團以植入金融惡意程式，盜走數百萬美金，DDOS 攻擊愈來愈頻繁、攻擊方式愈來愈複雜、攻擊流量愈來愈大，銀行用戶帳戶遭盜領損失擴大，商業機密遭竊取，上開金融資安議題，正持續擴大其影響範圍，傳統的資訊防護標準及資安部署等配備，似已難以抵擋駭客集團綿密攻勢，面對金融數位

化時代伴隨著數位風險，如何降低風險，提升防禦效果？以利在講求金融服務便捷化的情形下，兼顧交易安全，數據保密以及個資隱私保護，確實是政府部門及金融產業必需正視面對的一大課題。

資安的重要性已不言可喻，相關金融產業近年紛紛投入資源、人力與預算，提升資安的防禦，可資借鏡的相關做法包括：

- 一、 提升資訊安全組織管理層級：將資訊安全視為組織中重要的機制，將金融資安的風險管理納入機構風險控管範圍中，因為資訊安全的議題已非資訊單一部門可獨立作戰，面對的風險治理議題，應提高資訊安全層級，以求永續發展。
- 二、 掌握最新國際標準與資訊安全技術：掌握國際規範與標準，援引其他先進國家對於金融科技的監理規範和指引，如 ISO 的雲端安全標準等作為參考，以利內部優化安全風險治理；瞭解業界尖端技術，近期許多業者開發雲端服務架構，提供資訊安全防禦工具等監控配備，從合規到資料保護，皆有新的應用技術可資協助資訊安全升級。
- 三、 跨域合作，建立資訊安全預警與聯防功能：銀行、證券期貨等業者應加強合作，對於資訊安全諮詢服務、資安事件通報與分享、技術訓練等在交流平臺網絡中進行專業分享，提升聯防效益。
- 四、 部署資訊安全人力與強化資訊安全演練：人才培力，加強資訊安全人員教育訓練以強化專業量能；並能有計畫性地進行資安攻防演練，並於事後檢討分析，以利資安事故發生時能夠緊急應變，降低損害。

隨著數位金融產業興起以及金融商業模式不斷推陳出新，新科技技術應用愈趨頻繁，伴隨而來的資安威脅也更加嚴峻，相關金融產業的資訊安全政策亦應隨之調整轉型，以因應變動的資安威脅與嚴峻挑戰。

肆、心得與建議

一、心得

本次會議對於微軟公司建構雲端整體解決方案印象深刻，從 Fintech 創新應用、雲端技術之可用性及安全性、區塊鏈 (Blockchain) 及資訊安全等議題，在圓桌會議中，與出席的亞洲國家建立資訊新知交流契機，收穫良多，微軟公司深耕市場，理解客戶的需求，並以高於客戶需求的角度，提供整體的雲端服務方案，詳實介紹軟硬體配備、標準規範及專業技術等，傳遞給所有與會者，所有來自亞洲不同分公司的微軟高階主管，皆出席與會，就解決方案與出席者進行面對面的交流。本次圓桌會議有利於技術開發者與使用者的深度對話與溝通，建立友好關係。

亞洲證券業暨金融市場協會舉辦 ASIFMA Annual Conference 2016 年會，探討金融科技浪潮下的金融創新及因應策略，主辦的 ASIFMA 邀請跨國的學者專家，就 Fintech 議題進行討論，議題涉及近期非常火熱的區塊鏈技術 (Blockchain)、監理沙盒 (sandbox)、人工智慧、巨量資料、機器人理財顧問及資訊安全等，在會場中可以充份體會，在數位金融創新的衝擊下，似乎有著不前進就被淘汰的危機感，如何在競爭激烈的市場中搶下先機，提早布局，壯大商業模式，是大家的共識。

ASIFMA 協會亦針對會員屬性，提供不同層次的服務，針對監理高階主管開關閉門會議，討論跨國金融管制相關議題；

亦有針對女性在金融科技的角色進行探討，以提升女性在金融科技市場的就業機會。分眾式的閉門會議設計，有別於一般研討會的規劃，令人印象深刻。

此外 ASIFMA 協會為利研討會以無紙化方式進行，專為本次會議開發 APP，事前提醒與會人員下載安裝，以利與會人員瞭解與談人背景資料及當天議程，較特別的是，所有當日研討會的 QA 皆透由 APP 來進行，包括與會人員必須在此 APP 留言提問，甚至主講人可針對某些議題進行即時表決投票，立即產出結果，增加與會者互動與回應，乃至於會後的滿意度調查等，所有資訊皆透明公開，充分反映行動化，時代規劃會議的新模式，可作為我國安排國際研討會之借鏡。

二、建議

針對本次出席國際會議，提出相關精進建議事項，說明如下：

- (一) 可藉由產官合作，與國際型公司或協會維持良好互動關係，並持續進行前瞻數位治理議題之研究探討，進而在國際會議場合擴大與其他國家的交流。
- (二) 積極參與國際研討會，分享我國在雲端服務、數位金融等應用經驗，並瞭解各國前瞻的規劃模式，建立議題討論利基。尋求與其他國家進一步合作的機會，建立友好的外交網絡關係。
- (三) 區塊鏈的技術除應用於金融證券業之外，對於其他政府公共服務的應用，亦值得我國刻正推動數位國家創新經濟方案時參考，如土地所有權以區塊鏈簽署智能合約；電子投票(ivoting)，使用區塊鏈電子投票服務，加快流程及提高安全性；運用於身分認證，於虛擬世界提供身分驗證等。上述應用雖尚屬觀念驗證階段，惟區塊鏈未來應用的可行性，值得我國關注其後續發展。
- (四) 本次會議微軟希望透過雲端服務協助銀行業進行數位化轉型，政府亦可強化大企業與其他產業、新創事業間的合作，透過雙方資源的共享，以創造綜效，進而促進產業的轉型。

伍、附錄

一、 會議議程

二、 簡報資料

Asia Financial Regulators Roundtable
 Singapore – November 16, 2016
 Agenda



Venue – Microsoft Transparency Center & Cybersecurity Center			
Time	Topic	Overview	Speakers
8:30am – 9:00am	Breakfast and viewing of the Microsoft Transparency Center & Cybersecurity Center		
9:00am – 9:30am	Opening	<ul style="list-style-type: none"> - Brief welcome and facilitated introductions - Objective setting 	Karen Cone General Manager, Worldwide Financial Services, Microsoft Andrew Cooke Regional Director – Microsoft Asia Pacific & Japan
9:30am – 10:15am	Cloud Trends in the Financial Services Industry (a global view)	<ul style="list-style-type: none"> - An update on how global FSIs are leveraging SaaS, PaaS, and IaaS - An overview of cloud's role in reshaping banking business and operations - Overview of recent IDC Cloud research commissioned by Microsoft 	Sean Foley Chief Technology Officer, Worldwide Financial Services, Microsoft
10:15am – 10:45am	Fintech and Innovation - A Global View	<ul style="list-style-type: none"> - The Government's Role in Creating a Vibrant FinTech Industry 	Adrienne Harris Special Assistant to the President for Economic Policy, National Economic Council at The White House
10:45am – 11:00am	Coffee Break		
11:00am – 11:45am	Cybersecurity and the Financial Services Ecosystem	<ul style="list-style-type: none"> - Microsoft's insights into the global cybersecurity environment, with a deep dive on emerging threats, impacts and how industry can partner with regulators and regulated institutions to help fight cyber crime 	Ann Johnson Vice President & Worldwide Cybersecurity Lead, Microsoft
11:45am – 12:30pm	Microsoft's Financial Services Compliance Program	<ul style="list-style-type: none"> - Overview of developed risk assurance/compliance materials - Detailed outline of assurance resources and tools to help support regulatory compliance - Thoughts on the life-cycle of a cloud relationship (initial due diligence, contract negotiation, setup, integration, run, exit) 	Robert Dring Senior Director, Microsoft Andrew Cooke Regional Director – Microsoft Asia Pacific & Japan
12.30pm – 1:30pm	Lunch – guest speaker from the Bankers' Association of Singapore, James Wilkins to address the Association's recently published Cloud Computing Implementation Guide		

1:30pm – 2:15pm	Hyperscale Compliance - Risk Assurance and Compliance Across Cloud Services	- This session will go deep on the various phases of the compliance "experience" (e.g., presence of auditors, regular third-party evaluation, etc.) - Feedback from regulators on the compliance approach	<u>Alan Ross</u> Microsoft Azure Compliance Director, Microsoft
2:15pm – 3:00pm	Security in the Cloud	- This session will address cloud based enablement of customer control of security (e.g., Azure Security Center) and protective measures baked into cloud services (e.g., Lockbox, Advanced Threat Protection)	<u>Robert Dring</u> Senior Director, Microsoft <u>Alan Ross</u> Microsoft Azure Compliance Director, Microsoft
3:00pm – 3:05pm	Coffee Break		
3:05pm – 4:25pm	Blockchain: The Distributed Trust Engine	Providing clarity on Blockchain trends, use-cases and current state of the market and highlighting opportunities and challenges that the use of distributed trust solutions will create Microsoft's Blockchain as a service offering	<u>Bob Hayward</u> Principal, Management Consulting, KPMG APAC <u>Andrew Key</u> Head of Global Business Development, ConsenSys Moderated conversation by: <u>Richard Knight</u>
4:25pm – 5:00pm	Dialogue on risk assurance and compliance	Open discussion on how Microsoft and regulators can continue the dialogue Feedback on sessions	Open discussion moderated by: <u>Sean Foley</u> Chief Technology Officer, Worldwide Financial Services, Microsoft <u>Andrew Cooke</u> Regional Director – Microsoft Asia Pacific & Japan
5:00pm – 5:30pm	Closing remarks		<u>Karen Cone</u> General Manager, Worldwide Financial Services

2016

ANNUAL CONFERENCE

17-18 November 2016 | Singapore

asifma

Growing Asia's Markets



ASIFMA Annual Conference 2016

Program (as of 7 Nov 2016)

DAY 1: Thursday 17 November 2016 - Global and Regulatory Topics

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1
(6 Raffles Boulevard, Marina Square, Singapore 039594)

Morning Session - Closed-Door Regulator Meetings

(For 30-50 regulators by invitation only, closed to the media)

**For each meeting, it begins with a short presentation summarizing the industry's views, followed by a short panel discussion and in-depth interaction with the audience who are restricted to policymakers, central banks and public officials.*

08:30-09:00 Breakfast

09:00-09:45 **Meeting 1: Asia's Response to European and North American Regulatory Measures Including in Light of Brexit**

- Larry E. Thompson, Vice Chairman and General Counsel, Depository Trust & Clearing Corporation (DTCC)
- Vanessa Le Leslé, Head of Regulatory Affairs, Asia Pacific, J.P. Morgan
- Edward Lee, Head of ASEAN Economic Research, Standard Chartered
- Mark Austen, CEO, ASIFMA (Moderator)

09:45-10:30 **Meeting 2: Developing Hedging Markets in Asia in Light of the G20 Reforms**

- Trevor Vail, Global Head of Credit Trading, ANZ
- Rahul Advani, Assistant Director, Public Policy, Asia Pacific, International Swaps and Derivatives Association (ISDA)
- Pierre-Henri Joly, Global Markets COO, Head of Regulatory Transformation APAC, Societe Generale
- Mark Austen, CEO, ASIFMA (Moderator)
- DBS

10:30-10:45 Coffee Break

10:45-11:30 **Meeting 3: Sustainable Infrastructure Finance Including Project Bonds**

- James Abbott, Partner, Allen & Overy
- Boo Hock Khoo, VP, Operations, Credit Guarantee and Investment Facility (CGIF)
- Marc Freydefont, Senior Director, Fixed Income – Asia Solutions, Credit Suisse
- Abhishek Dangra, Director, Corporate Ratings, S&P Global Ratings
- Mark Austen, CEO, ASIFMA (Moderator)

DAY 1: Thursday 17 November 2016 (Con't)

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1
 (6 Raffles Boulevard, Marina Square, Singapore 039594)

Morning Session - Closed-Door Asset Management Panels

(For 30-50 asset management and investor representatives by invitation only, closed to the media)

08:30-09:00 Breakfast

09:00-09:45 **Panel 1: *Online Fund Distribution***

- Damien Mooney, MD, Head of Retail Business, Chief Marketing Officer, Asia Pacific, BlackRock
- Lim Chung Chun, Chairman and CEO, iFAST Corporation Ltd
- Donna Chen, Founder & President, Keystone Intelligence Inc
- Xiaoming Zhou, Deputy General Manager, Tianhong Asset Management Co. Ltd.
- Stewart Aldcroft, Chairman, Cititrust Limited, Hong Kong (*Moderator*)

09:45-10:30 **Panel 2: *Pensions and Retirement***

- Rachel Farrell, MD, Head of Sovereign and Institutional for Asia Pacific ex-Japan, J.P. Morgan Asset Management
- Vincent Wang, Chief Investment Officer, Ping An Annuity Insurance Company of China
- Hiro Kasai, Senior VP and Head of Investment, Tokio Marine Asia Pte. Ltd.
- Charles Lin, Principal, Head of Greater China, Vanguard Investments Hong Kong Limited
- Xavier Meyer, Head of Product Strategy & Development, Eastspring Investments (*Moderator*)

10:30-10:45 Coffee Break

10:45-11:30 **Panel 3: *Stewardship and Responsible Investment***

- Alex Ng, Chief Investment Offer, Asia Pacific, BNP Paribas Investment Partners
- Kevin Gibson, Chief Investment Officer, Eastspring Investments
- Jenn-Hui Tan, Director of Corporate Finance, Fidelity International
- Harriet Steel, Global Head of Business Development, Member of Board and Executive Committee, Hermes Investment Management
- Lawrence Liu, Board Director, Taiwan Stock Exchange; Chairman, CDIB Venture Capital Corporation
- Eugenie Shen, MD - Asset Management Group, ASIFMA (*Moderator*)

Morning Session - Closed-Door Women Session

(Hosted by Thomson Reuters, Supported by ASIFMA and Women In Finance Asia)

(For 30-50 women participants by invitation only, closed to the media)

09:00-11:30 **Panel: *When Diversity Meets Innovation***

- *How investing in diversity improves results*
- *Women in FinTech*
- *The diversity and inclusions challenges and solutions the industry faces*
- *How we drive the next wave of change*
- *Increasing the number of women on boards*

DAY 1: Thursday 17 November 2016 (Con't)

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1

Afternoon Session

(For all conference registrants, open to the media)

- 11:30-12:30 Delegate Check-in & Buffet Lunch
- 12:30-12:45 **Welcome Remarks**
- 12:45-13:05 **Keynote 1**
 Jacqueline Loh, Deputy Managing Director, Monetary Authority of Singapore
- 13:05-13:25 **Keynote 2** *Fintech, Opportunities, Risks and Challenges*
 Greg Medcraft, Chairman, Australian Securities & Investments Commission
- 13:25-14:15 **Panel 1: Global Regulators**
- Greg Medcraft, Chairman, Australian Securities & Investments Commission
 - Antonio de Lecea, Principal Advisor to the Director General, Directorate General for Economic and Financial Affairs, European Commission
 - Nick Miller, Head of EU & Global Department, Financial Conduct Authority
 - Jingdong Hua, VP, Treasury and Syndications, International Finance Corporation, World Bank Group
 - Carter McDowell, MD and Associate General Counsel, SIFMA
 - Stephen Lackey, Chairman, Asia Pacific, BNY Mellon (*Moderator*)
- 14:15-14:45 Coffee Break
- 14:45-15:30 **Panel 2: Asian Regulators and Exchanges**
- Rapee Sucharitakul, Secretary-General, Chairman of Capital Market Supervisory Board, Securities and Exchange Commission, Thailand
 - Takuo Komori, Deputy Commissioner for International Affairs, Financial Services Agency, Japan
 - Jae-Ryong Jeong, Head of Life Insurance Team, Financial Supervisory Service, Korea
 - Chitra Ramkrishna, MD & CEO, National Stock Exchange of India Ltd
 - Lawrence Liu, Board Director, Taiwan Stock Exchange; Chairman, CDIB Venture Capital Corporation
 - Damien Ryan, Founder and MD, Ryan Communication (*Moderator*)
- 15:30-16:15 **Panel 3: Asian CEOs**
- Ajai Kaul, CEO & Head of Asia Pacific ex-Japan Client Group, AB
 - Mark Talbot, MD, Asia Pacific, Fidelity International
 - Michael Falcon, CEO, Global Investment Management, Asia Pacific, J.P. Morgan Asset Management
 - Lieven Debruyne, CEO, Asia Pacific, Schroders
 - Oriel Morrison, Co-anchor, CNBC (*Moderator*)
- 16:15-16:45 **Keynote 3**
 Blythe Masters, CEO, Digital Asset Holdings
 - with short interview on stage by Mark Austen, CEO, ASIFMA
- 16:45-17:00 Wrap Up for Day 1

DAY 1: Thursday 17 November 2016 (Con't)

Evening Session – ASIFMA 10th Anniversary Dinner Reception

(For 100-120 dinner sponsors and special guests who receive a separate dinner confirmation email by invitation only, closed to the media)

Dinner Venue: Aura Sky Lounge, Level 6, National Gallery Singapore

- *Address: 1 St. Andrews Road, 06-02 National Gallery Singapore, Singapore 178957*
- *Entrance is on Coleman Street. Please access from Supreme Court Lane.*

18:00-18:45 Guest Check-in and Cocktail

18:45 Dinner Starts and Welcome Remarks

19:30-20:30 **Panel: Global CEOs**

- **Gang Chu**, COO, China International Capital Corporation (CICC)
- **Tengku Dato' Sri Zafrul Tengku Abdul Aziz**, Group CEO, CIMB Group Holdings Berhad
- **Piyush Gupta**, CEO and Director, DBS Group
- **Sridhar Chandrasekharan**, Global CEO, HSBC Global Asset Management
- **Henrik Raber**, Global Head of Capital Markets, Standard Chartered
- **Mark Austen**, CEO, ASIFMA (*Moderator*)

21:30 Dinner Concludes

Sponsorship Details for Dinner Reception

Tables: HKD22,000 nett (per table of 10 persons)

- Half Table available but subject to ASIFMA's discretion on partnering
- Individual seats will only be considered if Tables are available in November on a first-come-first-served basis

Regulators: At least 2 allocated per table on first-come-first-served basis

Investors: At least 1 allocated per table on first-come-first-served basis

Timeline: Tables will be available based on following schedule:

- Confirmed Conference Sponsors, from July
- ASIFMA Board, from August
- ASIFMA Members, from September
- Non-Members, from October

DAY 2: Friday, 18 November 2016 - Global Markets Topics

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1

Morning Break-out Session – Stream A
(For all conference registrants, open to the media)

08:30-09:00 Delegate Check-in

09:00-09:45 Panel A1: Brexit: Impact on Economic Growth in Asia

- Sherry Madera, Minister-Counsellor & Director for Financial Professional Services and ICT, British Embassy
- Philip McNicholas, Senior Economist, Asia ex-Japan, Global Markets, BNP Paribas
- David James Brown, VP, Business Development, BNY Mellon Markets, Singapore
- Edward Lee, Head of ASEAN Economic Research, Standard Chartered
- Sanjeev Chatrath, MD, Region Head, Asia, Financial & Risk, Thomson Reuters
- Marie Diron, Associate MD, Sovereign Risk Group, Moody's Investors Service (*Moderator*)

09:45-10:30 Panel A2: Accessing China's Markets in the Current Economic Climate: Stock Connect, CIBM and Other Channels

- Arnaud Delestienne, Executive VP, Head of Core Product Management, Clearstream
- Ivan Nicora, CEO Euroclear Hong Kong Branch and Regional Head of Asia-Pacific, Euroclear
- Ryan Wuebbels, ED, Principal Strategic Investments, Goldman Sachs
- Chris Ryan, MD, Head of Asia Pacific, MSCI
- Ashley Perrott, MD, Head of Pan Asia Fixed Income, UBS Asset Management
- Brad Maclean, ED and Research Principle, Regulation Asia and RMB Week (*Moderator*)

10:30-11:00 Coffee Break

11:00-11:45 Panel A3: India: One Step Forward, One Step Back?

- Neeraj Kulshrestha, Chief Business Operations, Bombay Stock Exchange (BSE)
- Sanjay Awasthi, Director, Central Dealing Desk, Eastspring Investments
- Ajay Mahajan, Head of Commercial & Wholesale Banking, IDFC Bank
- Jayesh H, Founder Partner, Juris Corp
- Rahul Bhargava, Director of Payments, SWIFT
- Radhika Rao, VP, Economic and Currency Research, Group Research, DBS Bank (*Moderator*)

11:45-12:30 Panel A4: ASEAN: Onwards to Further Integration?

- Philip McNicholas, Senior Economist, Asia ex-Japan, Global Markets, BNP Paribas
- Nellie C. Dagdag, MD - Industry Relations, Sales & Solution Delivery, Depository Trust & Clearing Corporation (DTCC)
- Kenneth Tang, Senior Portfolio Manager, Asian Equity, Nikko Asset Management Asia
- Christian De Guzman, VP – Senior Credit Officer, Sovereign Risk Group, Moody's Investors Service
- Xavier Jean, Senior Director, Corporate Ratings, S&P Global Ratings
- Christopher Langner, Gadfly Columnist, Bloomberg (*Moderator*)


12:30-13:15 Panel A5: Asian FICC Market Liquidity: Negative Interest Rates VS. Shrinking Bank Balance Sheets

- Andrew Ng, Chairman, ASIFMA; Group Executive, Head of Treasury & Markets, DBS
- David Lynne, Head of Fixed Income and Currencies, Asia Pacific, Deutsche Bank
- Shantanu Shete, Head of Macro Sales, Singapore, Goldman Sachs
- Klaus Baader, Head of Research for Asia and Chief Economist for Asia Pacific, Societe Generale
- Sam Vilo, MD, Head of Financial Markets & ALM Singapore, Standard Chartered
- Nachum Kaplan, Editor, Financial Markets Asia, Reuters News (*Moderator*)

13:15-14:15 Buffet Lunch

DAY 2: Friday, 18 November 2016 - Global Markets Topics (Con't)

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1

 **Morning Break-out Session – Stream B**
 (For all conference registrants, open to the media)

08:30-09:00 Delegate Check-in

09:00-09:45 **Panel B1: Big Data: Artificial Intelligence, Machine Learning and Robo Advisors**

- Adrian Gostick, Chief Revenue Officer, BondIT
- Joanne Hon, Head of Asia Pacific, Dealogic
- Craig Davis, Partner, Head of Financial Risk Management, ASPAC, KPMG
- Michael Karbouris, Head of Business Development, Asia Pacific, Nasdaq
- Joe Rothermich, Director, Data Science, Thomson Reuters Labs
- Isabella Zhong, Reporter & Writer, Barron's Asia (*Moderator*)

09:45-10:30 **Panel B2: Cybersecurity, the Cloud and Privacy: the Way Forward**

- Kevin Fedigan, Head of Asset Servicing and Broker Dealer Services, BNY Mellon
- Greg Rattray, MD, Global Cyber Partnerships & Government Strategy, JPMorgan Chase & Co.
- Andrew Cooke, Regional Director - Legal Affairs, Microsoft Asia Pacific & Japan
- Saqib Sheikh, Head of Sales Services, Asia Pacific, SWIFT
- David Gurle, CEO, Symphony
- Jeremy Pizzala, Partner, EY (*Moderator*)

10:30-11:00 Coffee Break

11:00-11:45 **Panel B3: PFMI Standards and Recognition by EU and US of Asian CCPs: Resilience and Recovery and Resolution**

- Larry E. Thompson, Vice Chairman and General Counsel, Depository Trust & Clearing Corporation (DTCC)
- Jenny Cosco, Co-Head of Government Affairs, Asia-Pacific, Goldman Sachs
- Ketan Patel, MD, Deputy Group Risk Officer, Hong Kong Exchanges & Clearing Limited (HKEX)
- Rogier van Kempen, ED, Clearinghouse Risk, Strategy & Advisory, J.P. Morgan
- Agnes Koh, Executive VP, Chief Risk Officer, Singapore Exchange Limited (SGX)
- Kishore Ramakrishnan, Director, Consulting, PwC (*Moderator*)

11:45-12:30 **Panel B4: Infrastructure Financing: What is the Role for the Private Sector in Asia?**

- Jim Barry, MD, Global Head of Real Assets, BlackRock
- Boo Hock Khoo, VP, Operations, Credit Guarantee and Investment Facility (CGIF)
- Abhishek Dangra, Director, Corporate Ratings, S&P Global Ratings
- Hon Cheung, Head of Official Institutions Group, APAC, State Street Global Advisors
- James Abbott, Partner, Allen & Overy (*Moderator*)

12:30-13:15 **Panel B5: Green Finance and Sustainable Investing: Flavor of the Month or a Game Changer?**

- Terry Fanous, MD, Project, Public and Infrastructure Finance Group, Moody's Investors Service
- Laurent Morel, MD, Head of Debt Capital Markets & Advisory, Asia Pacific, Société Générale
- Rahul Sheth, ED, Capital Solutions Group, Standard Chartered
- John Barry, Head of Capital Financing, Asia, Products & Markets, National Australia Bank
- Ray Chan, Senior Investment Banking Reporter, FinanceAsia (*Moderator*)

13:15-14:15 Buffet Lunch

DAY 2: Friday, 18 November 2016 - Global Markets Topics (Con't)

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1

Afternoon Concurrent Roundtables

(For all conference registrants, closed to the media)

14:15-14:20 Welcome and Introduction to Concurrent Roundtables

**There are two consecutive sessions of 4 simultaneous roundtables, each representing a designated topic with at least two moderators leading the discussion. Delegates are able to join any table of their choosing.*

14:20-15:00 **Concurrent Roundtables** (For all conference registrants, closed to the media)

Roundtable 1: Digital Currency: from Frontier of Bitcoin to Central Bank Endorsement

- Scott Likens, Partner, Consulting, PwC
- David Gurle, CEO, Symphony

Roundtable 2: Tax Policy Impact on Capital Markets Development

- Gaetan Gosset, Head of Product Management Asia-Pacific, Euroclear
- Simon Jenner, Partner, Taxation, EY
- Greg Elliott, Global Head of Tax, CIB and Client Businesses, Standard Chartered

Roundtable 3: Culture: Industry Codes of Conduct VS. Tougher Regulation and Tougher Regulators

- Cindy Mok, Director, Head of Department, Monetary and Domestic Markets Management, Monetary Authority of Singapore (MAS)
- Tom Lodder, MD, Head of Regulatory Policy and Macro and Credit Legal, Asia Pacific, Barclays
- Peter Douglas, Director, Asia Pacific, CAIA Association

Roundtable 4: Bank Booking Models: Headed Towards Regionalization?

- Kishore Ramakrishnan, Director, Consulting, PwC
- Joel Grant, Director, Advisory, Financial Services Risk Management, EY

15:00-15:30 Coffee Break

DAY 2: Friday, 18 November 2016 - Global Markets Topics (Con't)

Conference Location: Marina Mandarin Singapore, Marina Mandarin Ballroom – Level 1

15:30-16:10 **Concurrent Roundtables (For all conference registrants, closed to the media)**

Roundtable 5: Weighting Risk: Will the Standardized Approach Unfairly Punish Emerging Market Credit?

- Andrea Schnoz, Director, Finance Regulatory Policy, Barclays
- Matt Holmes, MD, Head of Group Regulatory Policy, Deutsche Bank
- Vanessa Le Leslé, Head of Regulatory Affairs, Asia Pacific, J.P. Morgan

Roundtable 6: KYC: Regulators Are Now Endorsing Utilities but Is That the End to a Globalized Approach?

- Hasan Rauf, ED, Head of Business Development – Asia Pacific, Depository Trust and Clearing Corporation (DTCC)
- Brie Lam, Director, Regulatory & Compliance Services, IHS Markit
- Julia Walker, Head of Market Development, Risk and Regulatory Technology, Asia, Thomson Reuters
- Andrew Burlison, Head of Compliance Services, Asia Pacific, SWIFT

Roundtable 7: Exchanges: To Suspend or Not Suspend, Is This Even a Question in a Volatile Market?

- Katherine Abrat, Chair, Alternative Investment Management Association (AIMA); MD, Goldman Sachs
- Nico Torchetti, Senior VP, Head of Market Services, Singapore Exchange (SGX)

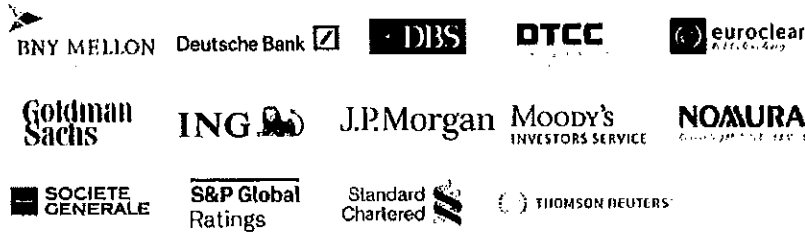
Roundtable 8: OTC Derivatives: Will Bilateral OTC Disappear and Clearing Be King?

- Luke Brereton, MD, Co-Head of Execution, Clearing, Liquidity and Portfolio Services, Standard Chartered Bank
- Rahul Advani, Assistant Director, Public Policy, Asia Pacific, International Swaps and Derivatives Association (ISDA)
- Pierre-Henri Joly, Global Markets COO, Head of Regulatory Transformation APAC, Societe Generale

16:10-16:20 **Closing Remarks**



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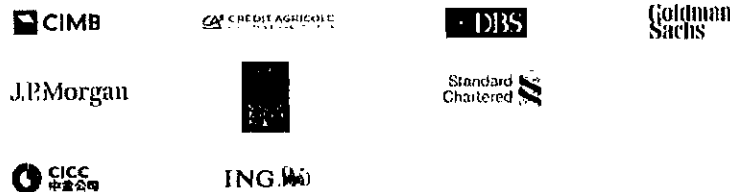
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BAG LANYARD PEN INSERT, E-BANNER COMMUNICATION

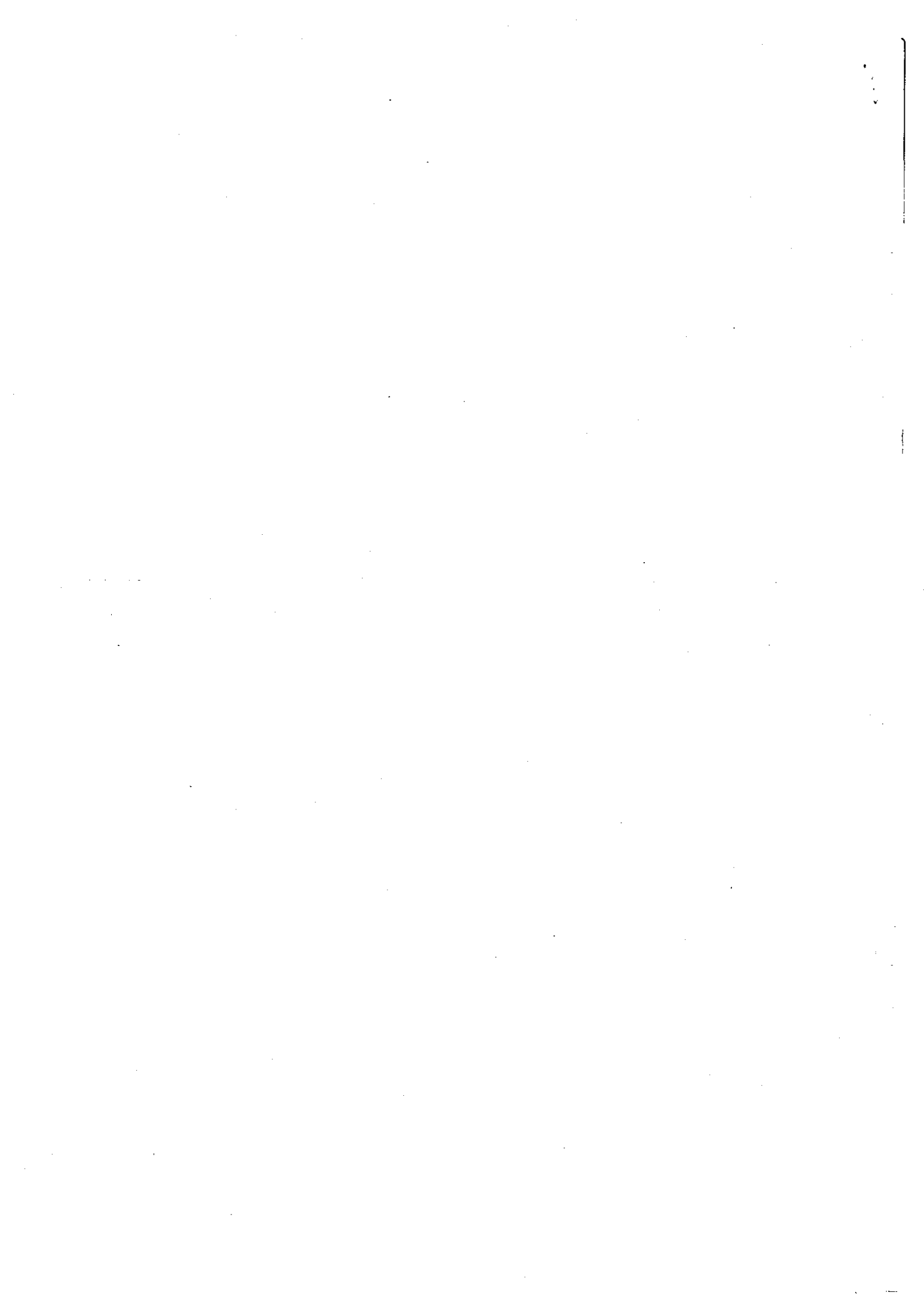


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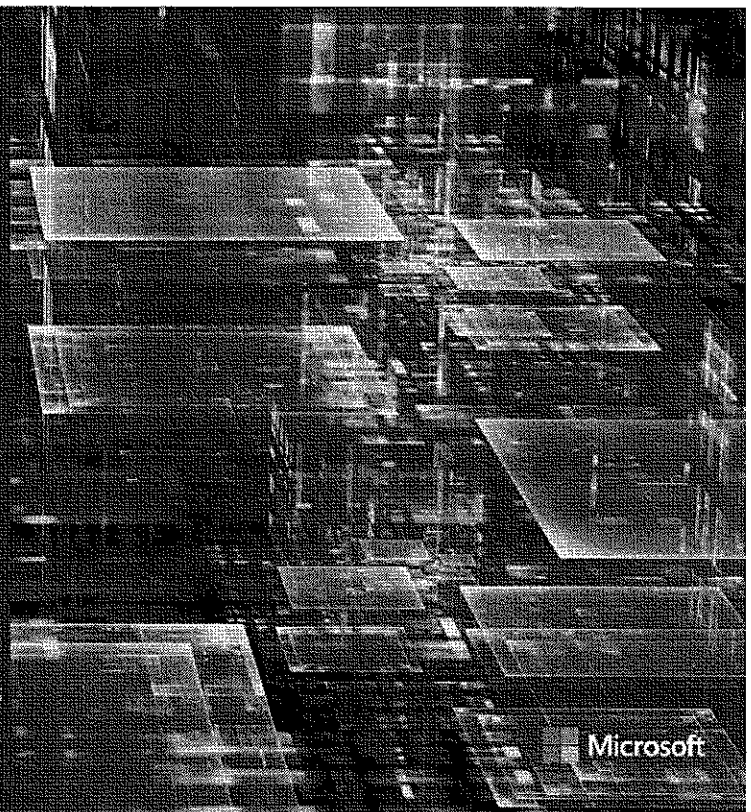
FINANCIAL SERVICES

Asia Regulatory Roundtable

Opening Remarks
November 16, 2016

Andrew Cooke
Regional Director
Legal Affairs
Microsoft – Asia Pacific & Japan

Karen T. Cone
General Manager
Worldwide Financial Services
Microsoft



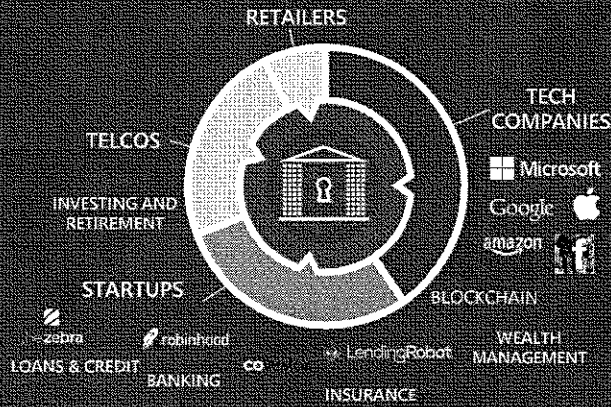
Agenda & Objective Setting

- Agenda overview
- Feedback on agenda / recalibrate as needed
- Partnership approach to innovation
- Internal and external voices
- Open dialogue on collaboration
- Setting a path for future engagement

Introductions

Driving Digital Transformation in Financial Services

Threats perceived by financial institutions



"There are hundreds of startups with lots of brains and money working on various alternatives to traditional banking."

Jaime Dimon, CEO, JP Morgan Chase

Source: EFMA-Infosys Feb 2015 Digital Banking Report

Digital is driving massive demand for transformation in financial services

\$280B

Paid in **bank fines** since 2009

(Source: Morgan Stanley)



"I live in fear that one of the tens of thousands of my employees will do something wrong and this bad behavior will be ascribed to me, as if I did it intentionally."

Lloyd Blankfein, Chairman & CEO
Goldman Sachs on CNN - Oct 23, 2016

MANAGING THE REALITIES OF RISK, REGULATION, LEGACY SYSTEMS, AND COST PRESSURES

>15% **>50%**
customers of Gen Y
LIKELY TO LEAVE THEIR BANK IN THE NEXT SIX MONTHS

(Source: Experian)

~70% of IT budgets are currently required to keep the lights on

(Source: Celentis)

DELIVERING INNOVATIVE CUSTOMER AND EMPLOYEE EXPERIENCES WITH SPEED AND AGILITY

Main drivers to stay or leave a bank tied to ease of access and quality of personalized service

80% of customers would switch to a financial institution that provides **personalized, customized service**

(Source: Accenture)

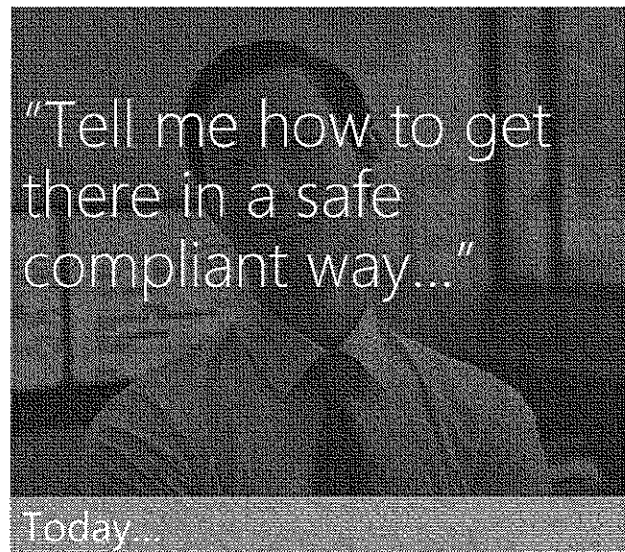
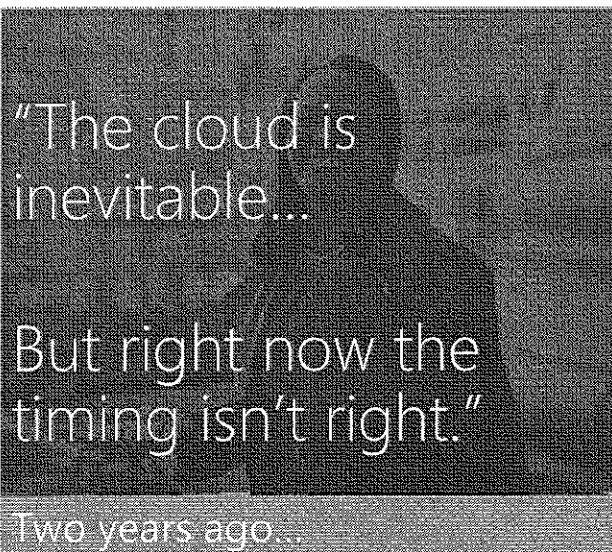


Digital transformation is essential to sustaining a competitive advantage in financial services



7

From then to now...



Customer focus helps new bank pursue ambitious growth goals

Challenge

- Metro Bank wants to grow by delivering the best possible customer experience across all of its channels: branch locations, online, on the phone, and in an app

Solution

- The bank uses Microsoft Dynamics CRM Online, Microsoft Power BI, and other Microsoft solutions to run smart, customer-centric operations

Benefits

- Grows rapidly and is on track to meet objectives for expansion
- Delivers excellent, consistent customer experience
- Improves process efficiencies and generates substantial savings



"We talk about revolutionizing banking. We talk about creating fans, not clients. For us, the investment in Microsoft technology was all about bringing that promise to life."

— Paul Marriott-Clarke, Commercial Director, Metro Bank

Financial institution creates agility in its regulatory reporting, saves millions with cloud

Challenge

- Perform large volume of risk computations quickly to meet regulatory compliance
- Lower costs

Solution

- Move on-premises, high-performance computing grids to the cloud

Benefits

- Provides agility and scalability to support risk computations and regulatory compliance
- Saves millions of dollars in servers and datacenter space



"Even prior to 2008, we were embarking on a solution to be more nimble in terms of how we could deliver risk and add value to the company. Then along came a big shift in regulations, and our work increased immensely."

— Dr. Robert K. Griffiths, Head of High-Performance Computing, MUFG

Opening doors and changing opportunity for 2 billion people without access to basic banking

Serving over 230 **microfinance** and community bank client sites in 36 countries

Reduced average cost of a loan by 90 percent

Already servicing over 10 million loans in Mexico, Nigeria, Kenya, Myanmar



"Regulated banks will be able to meet their close-of-business deadlines much faster and more cost-effectively in the cloud as opposed to using on-premises applications, because of the elastic provisioning in Microsoft Azure. Microsoft Azure really enables them to run their business more effectively overall."

—Ben Robinson, Chief Strategy and Marketing Officer, Temenos

What can you do?

Summary | Empowering financial services

Managing the realities of risk, regulation, legacy systems, and cost pressures


Delivering innovative customer and employee experiences with speed and agility



ENGAGE
YOUR
CUSTOMERS



EMPOWER
YOUR
EMPLOYEES



OPTIMIZE
YOUR
OPERATIONS



TRANSFORM
YOUR
PRODUCTS

FINANCIAL SERVICES

Asia Regulator Roundtable

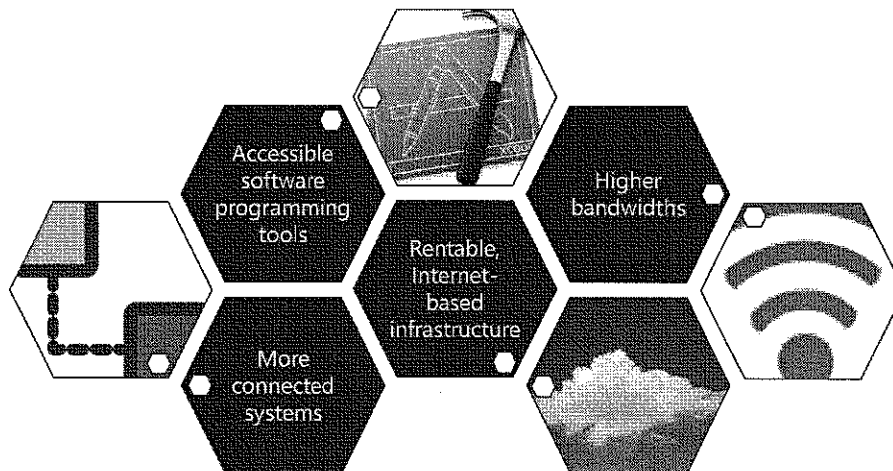
Cloud Trends in Financial Services

November 16, 2016

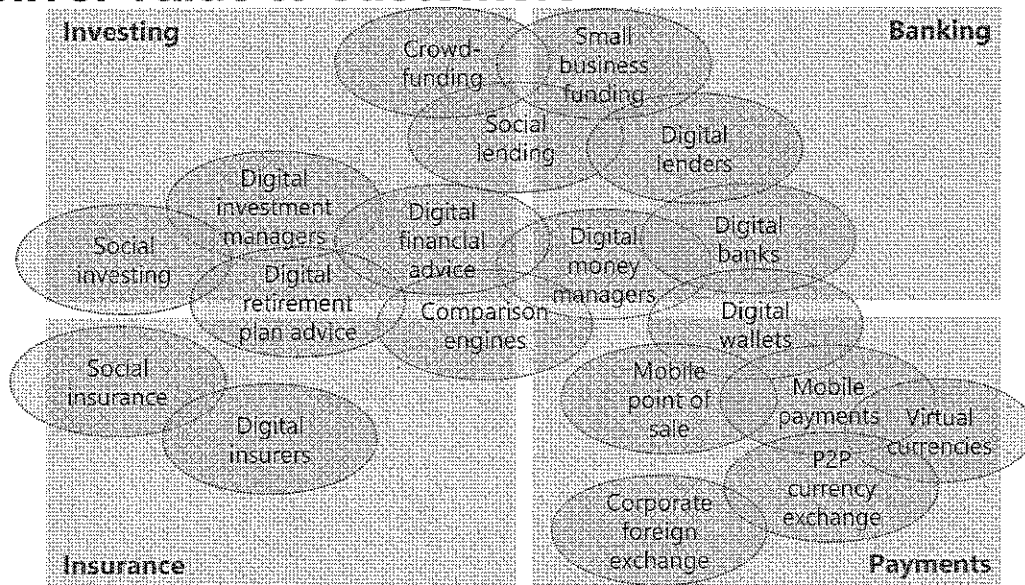
Sean Foley
CTO – Worldwide Financial Services
Microsoft

Microsoft

Technology barriers have fallen



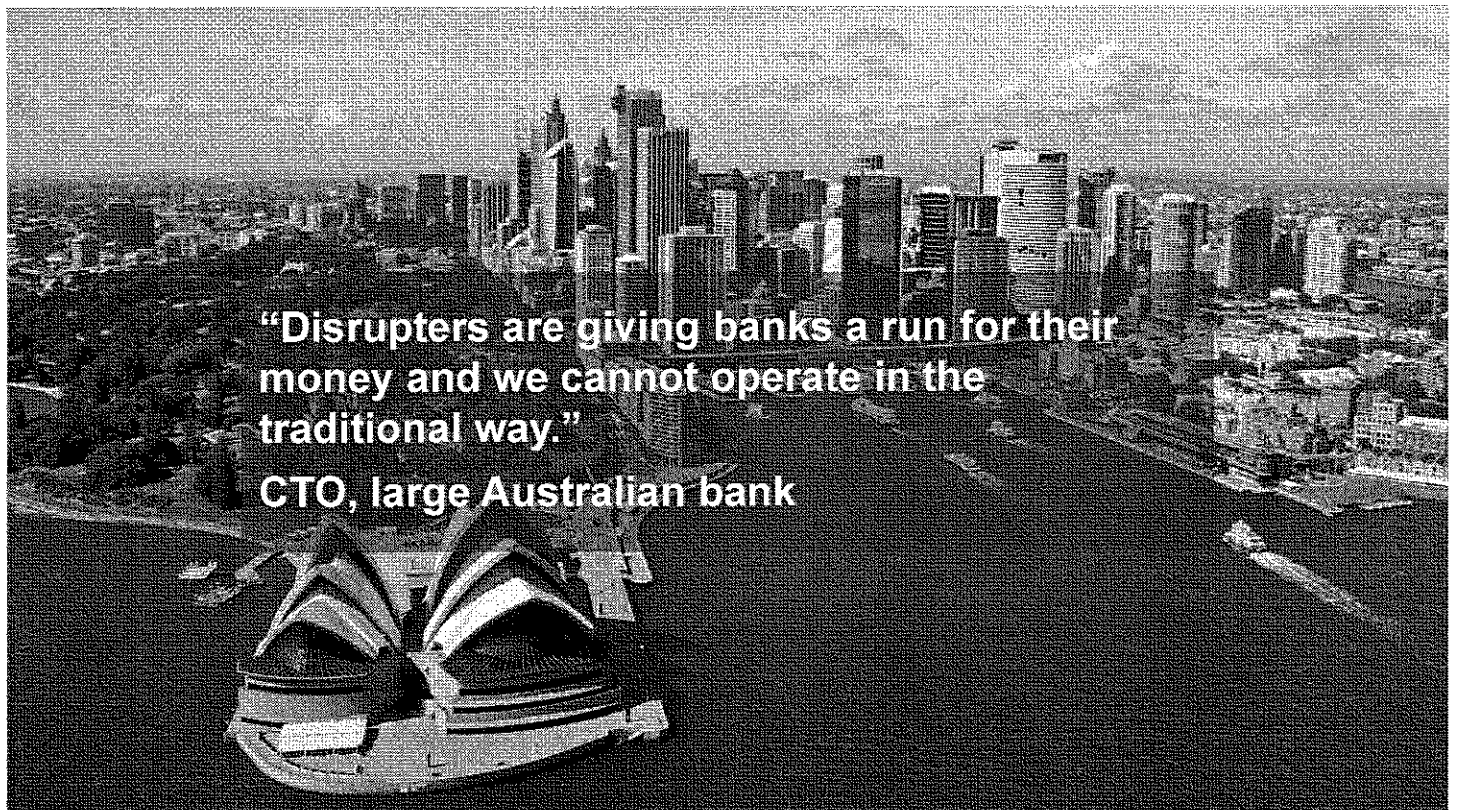
Hundreds of new entrants are seeking new ways to deliver value to customers



Source: Forrester Research, July 16, 2014, "Digital Disruption Hits Retail Financial Services" report.

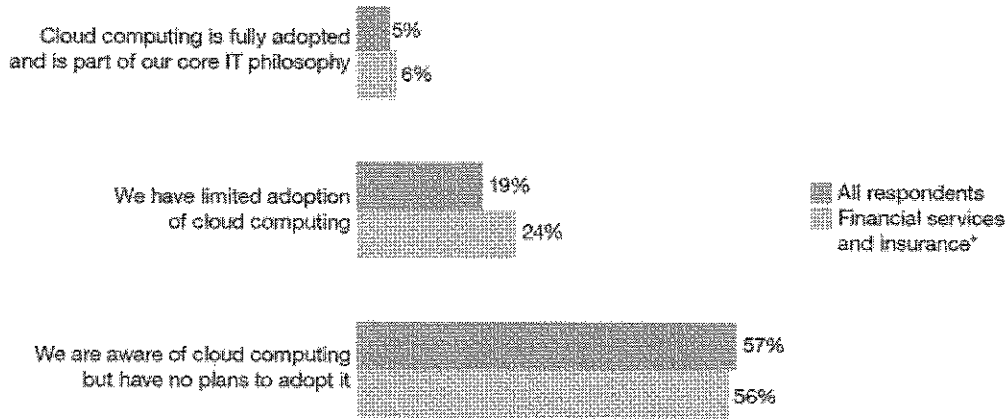
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3



Cloud Computing in FSI had traditionally lagged other industries - but in the last year global adoption has leapfrogged

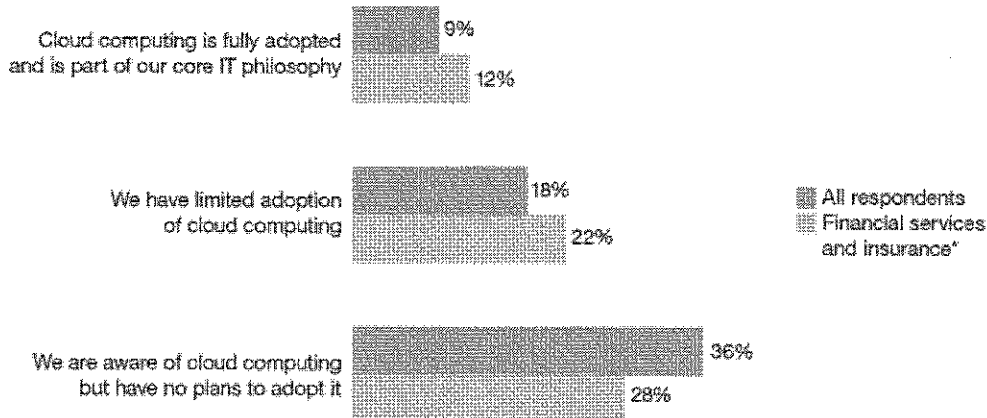
"Thinking about your organization's experience with adopting cloud computing over the past 12 months, please select the most appropriate response below."



Base: 1,209 respondents
 *FSI Base: 131 respondents (not all responses shown)
 Source: Business Technographics® Global Priorities And Journey Survey, 2015, Forrester Research, Inc.

Cloud adoption in FSI will continue to outpace the rest of the market through 2016

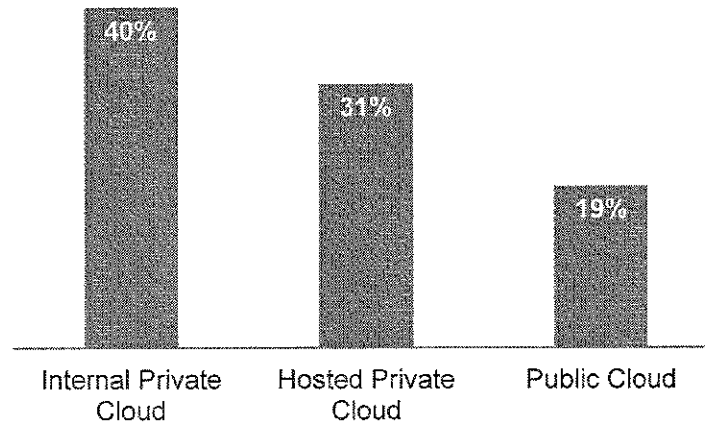
"Thinking about your organization's future plans to adopt cloud computing during the next 12 months, please select the most appropriate response below."



Base: 1,209 respondents
 *Base: 131 respondents (not all responses shown)
 Source: Business Technographics® Global Priorities And Journey Survey, 2015, Forrester Research, Inc.

FSI firms leverage public cloud in conjunction with other types of cloud

What are your firm's plans to adopt the following cloud platform (includes IaaS and PaaS) deployment models?



*Base: 156 respondents in Financial Services and Insurance industries in North America
Source: Global Business Technographics Infrastructure Survey, 2015, Forrester Research, Inc.

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7

Cloud is a key enabler of banks' digital transformation

- » **Speed** – faster implementation time
- » **Freeing up resources** – moving away from managing infrastructure
- » **Responsiveness** – embracing agile and continuous delivery

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8



“We see a direct correlation between cloud and speed/agility - quicker deployment, bypassing traditional build models, rapid prototyping and quick releases.”

Head of Group Strategy and Architecture, global bank.

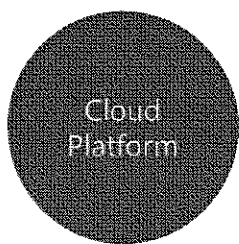
Microsoft Cloud Offerings



Office 365



Dynamics 365



Azure



Cortana
Analytics



Enterprise Mobility + Security
Operations Mgmt. + Security

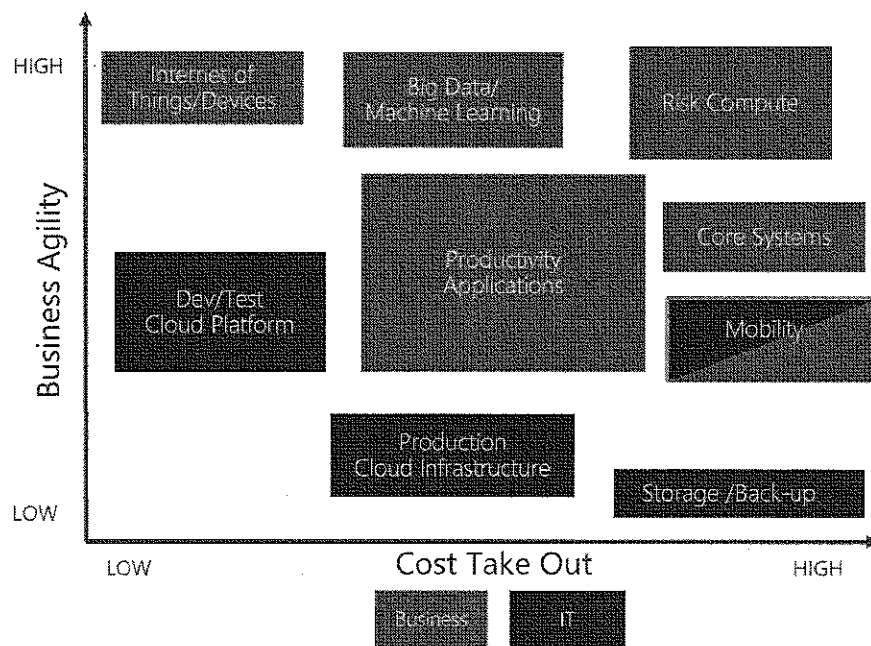
- Today, our top three product areas in Financial Services are: Azure, Office 365 and Dynamics CRM
- Looking forward, we see significant uptake in Artificial Intelligence, Blockchain (as a Service), Enterprise Mobility and Cloud Security capabilities

Key Cloud Workloads in Financial Services

>80% of new apps in the next 5 years will be distributed/deployed on clouds

The strategic focus in the cloud will shift from infrastructure to application platforms

34% of CIOs say technology as a service (cloud) will have the most profound effect on the CIO role in the future



FSI Customer Demand is Changing

- Shifting away from Private Cloud towards a mix of Public Cloud, Private Cloud and Hybrid Delivery
- Increase in direct SaaS consumption by Lines of Business
- Banks' IT focusing on higher end services:
 - Artificial Intelligence / Machine Learning
 - Applied to AML, KYC, Fraud, Customer Centricity, Roboadvisor
 - Blockchain as a Service
 - Innovation Labs, Value Chain Disintermediation
 - Enterprise Mobility
 - Data Loss Prevention and BYOD Device Management
 - Bots and conversations as a platform
 - Automated intelligent agents/assistants
 - Cloud-based Security
 - Advanced Threat Analytics/Protection

Our Journey With Regulators



Regulator Right to Examine

Greater customer oversight of services via Compliance Program

- Access to control framework and services operations data
- Access to security incident reviews and threat evaluations
- Access to Microsoft security experts and external auditors
- Access to penetration testing reports
- Notification of changes that materially impact Microsoft's ability to provide the services

Customer ability to provide suggestions to influence additional controls

Microsoft Financial Services Compliance Program

Discussion



Asia Financial Regulators Roundtable

Microsoft Cybersecurity Centre
Singapore, November 16, 2016





Fintech and Innovation – a Global View

Adrienne Harris
Special Assistant to the President for Economic Policy
National Economic Council at the White House



Coffee break




Asia Financial Regulators Roundtable

Microsoft Cybersecurity Centre
Singapore, November 16, 2016

 Microsoft

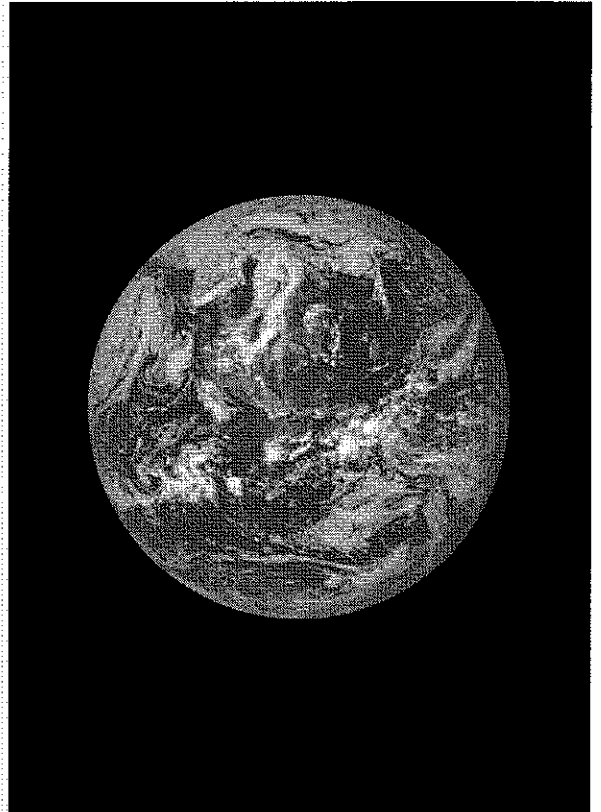
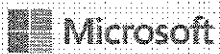
Security in a mobile-first, cloud-first world

Ann Johnson
Vice President
Enterprise CyberSecurity Group (ECG)

 Microsoft

Microsoft mission

Empower every person and every organization on the planet to achieve more



OUR COMMITMENT TO **TRUST**



TRANSPARENCY



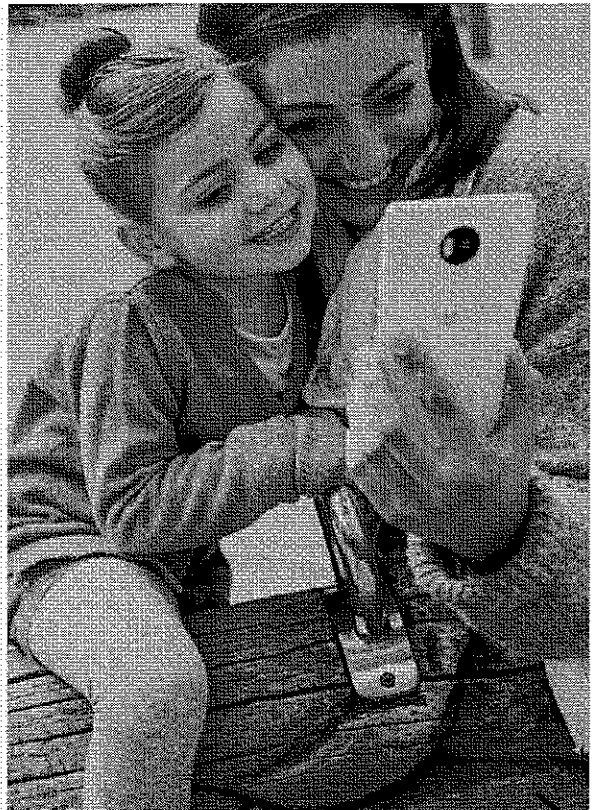
PRIVACY



COMPLIANCE

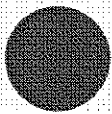
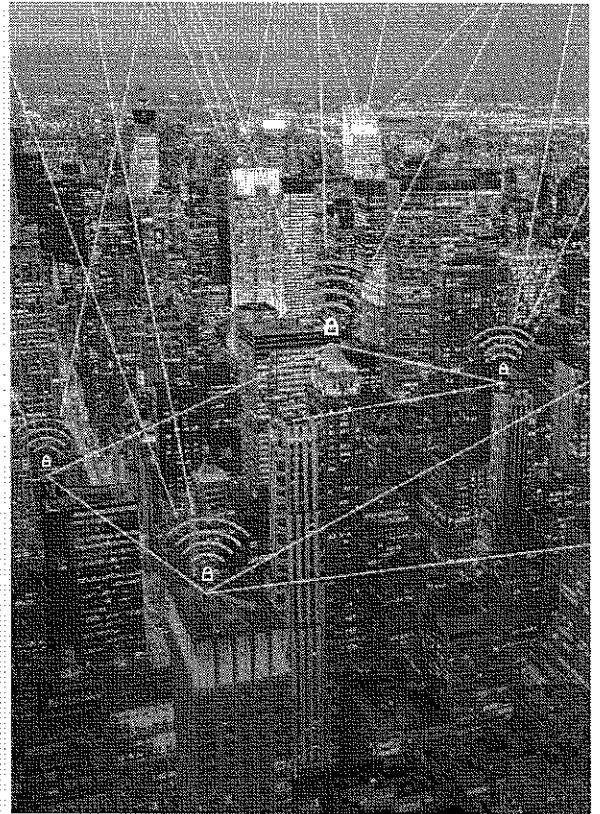


SECURITY



Microsoft Secure

Ensuring security to enable your digital transformation through a comprehensive platform, unique intelligence, and broad partnerships

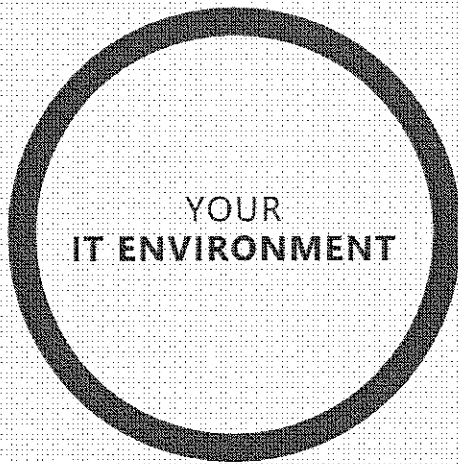
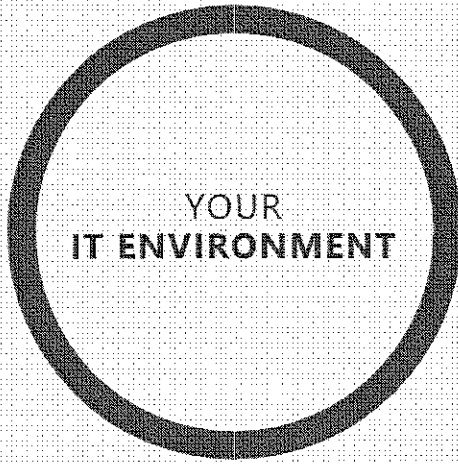


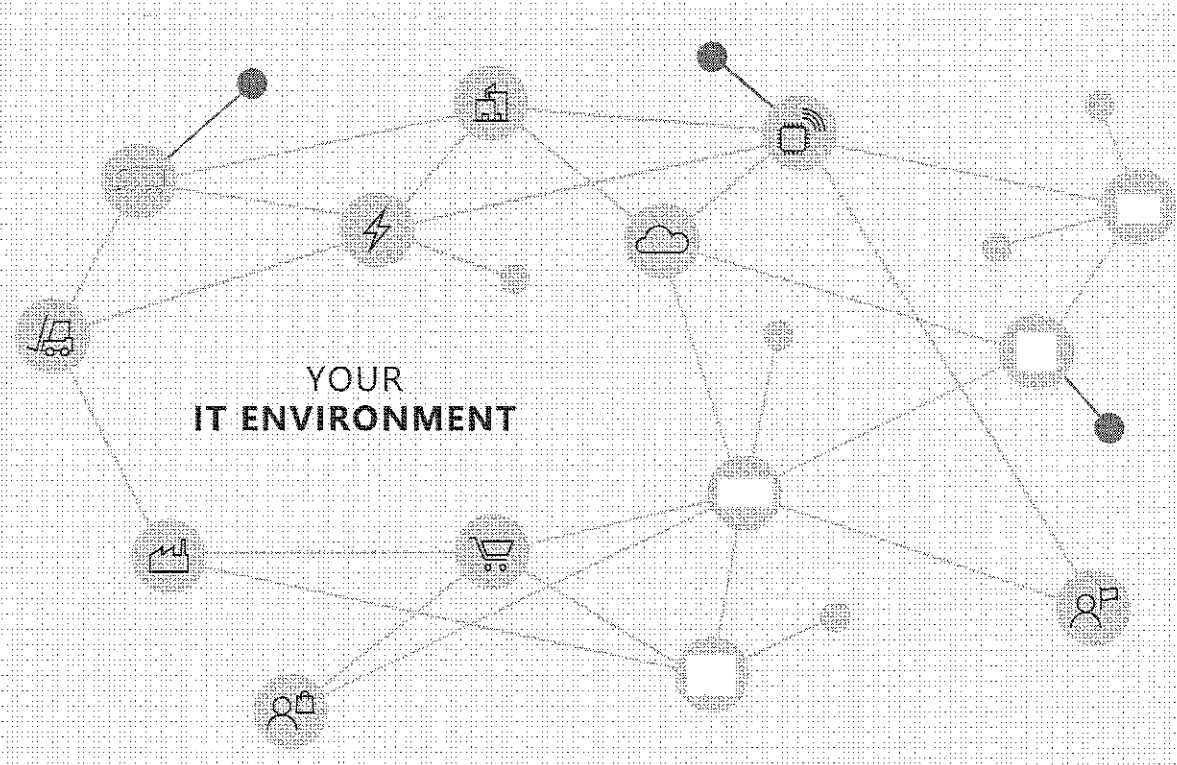
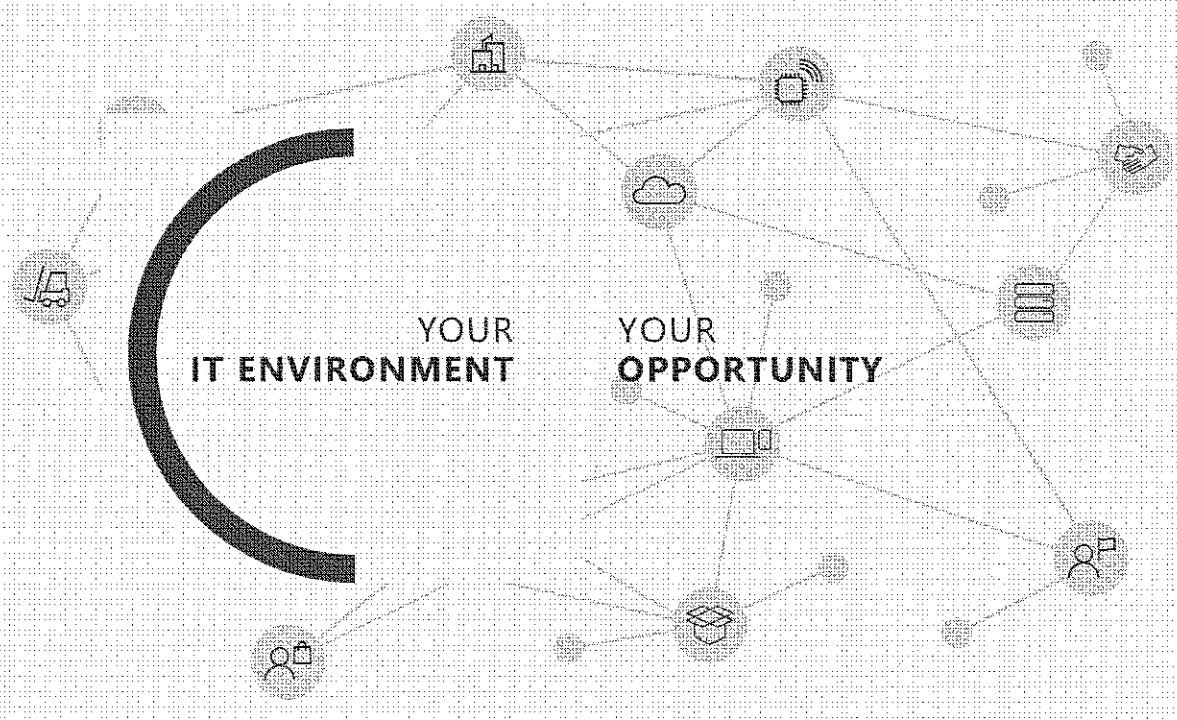
TURBULENT TIMES

160 MILLION customer records compromised

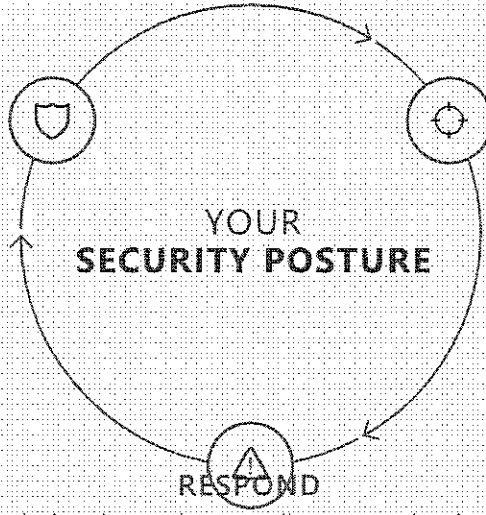
229 DAYS between infiltration and detection

\$3 MILLION of cost/business impact per breach





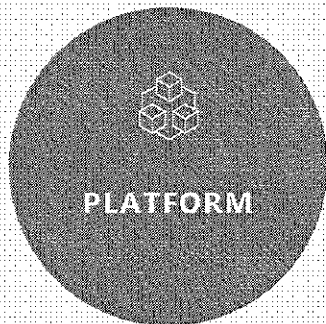
PROTECT
across all endpoints, from
sensors to the datacenter



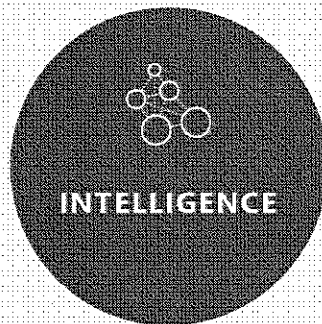
DETECT
using targeted signals, behavioral
monitoring, and machine learning

RESPOND
closing the gap between discovery and action

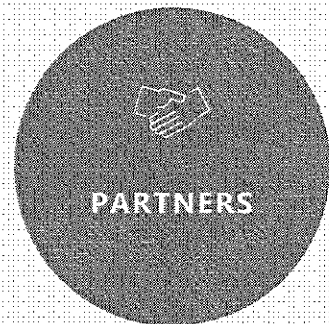
OUR **UNIQUE** APPROACH



PLATFORM

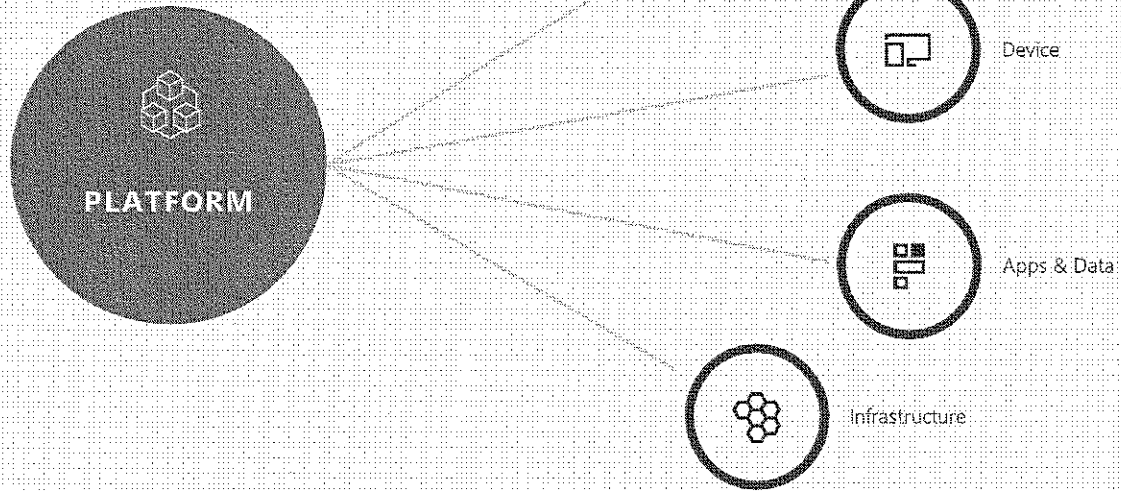


INTELLIGENCE

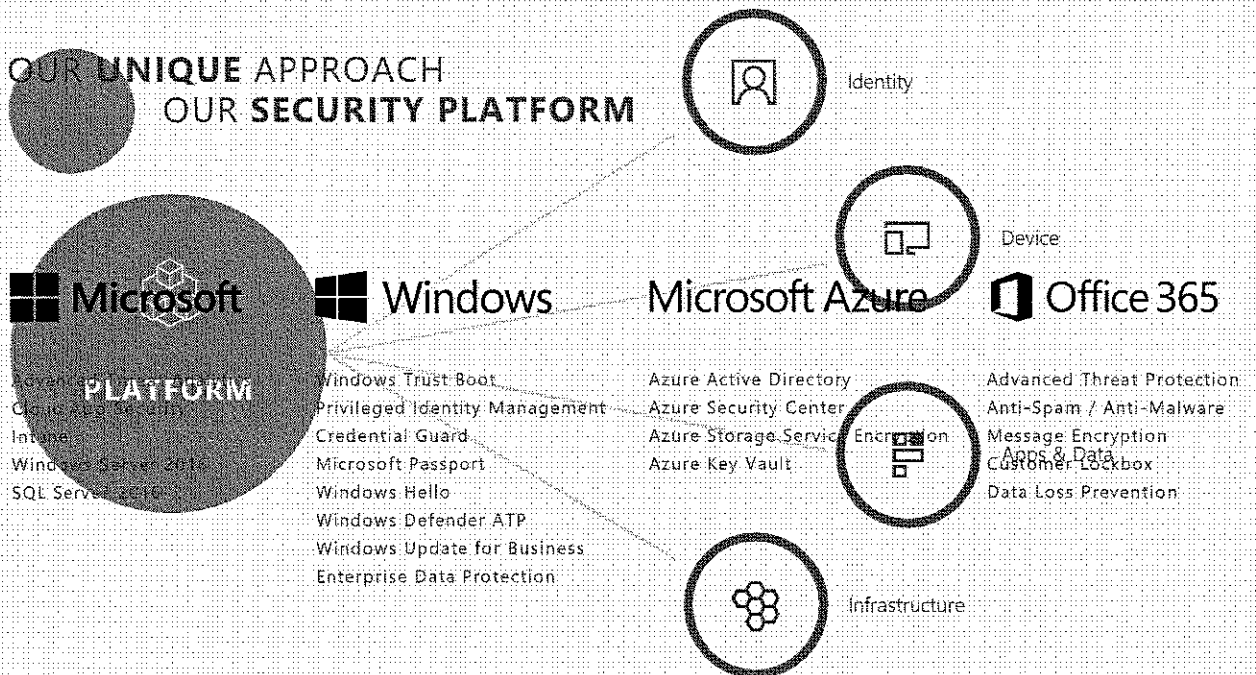


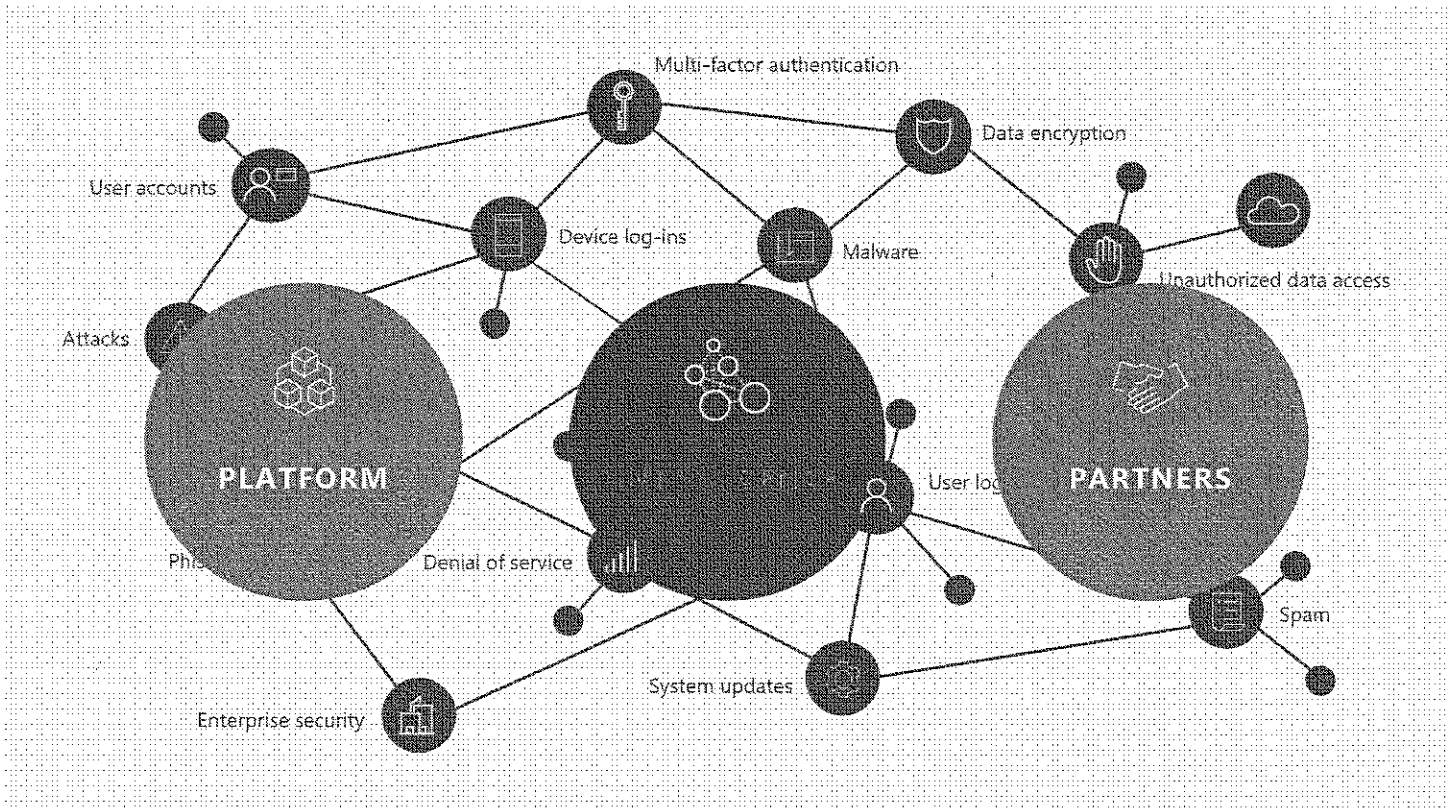
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OUR **UNIQUE** APPROACH



OUR **UNIQUE** APPROACH OUR **SECURITY** PLATFORM





OUR UNIQUE INTELLIGENCE

300B user authentications

10M Windows devices updated

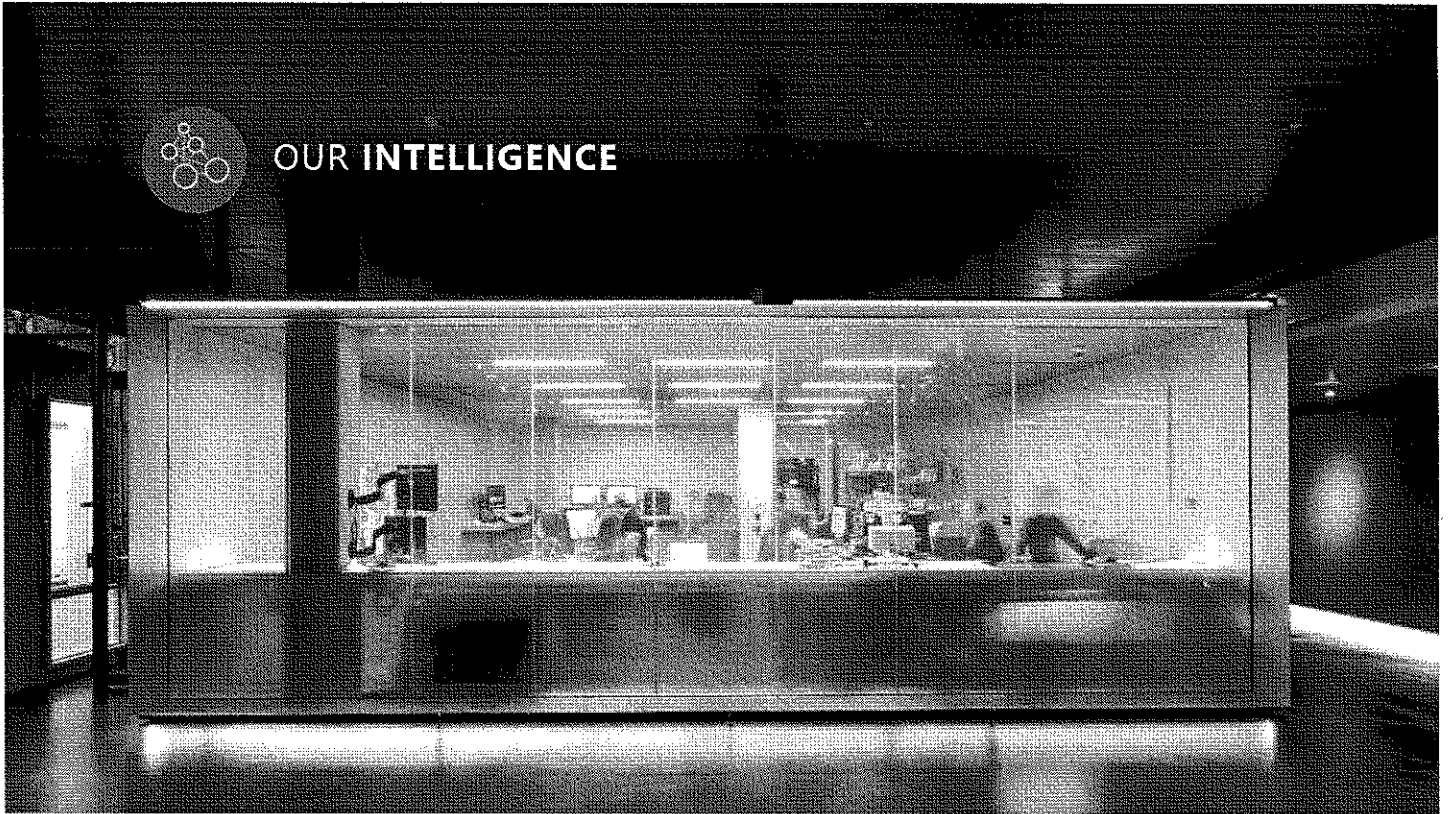
200B emails scanned for spam and malware

INTELLIGENCE

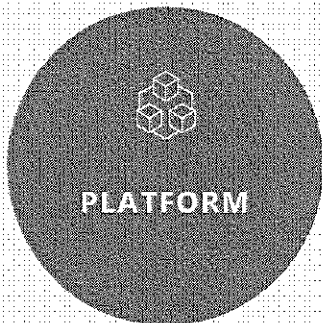
The background features a network diagram with various icons (key, shield, hand, cloud, smartphone, mail, bar chart, building) connected by lines, overlaid on a field of numerous grey circles of varying sizes.



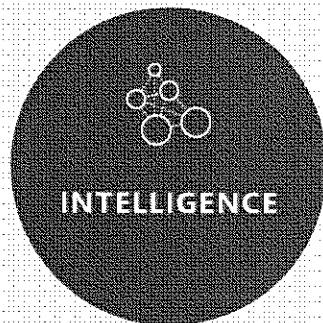
OUR INTELLIGENCE



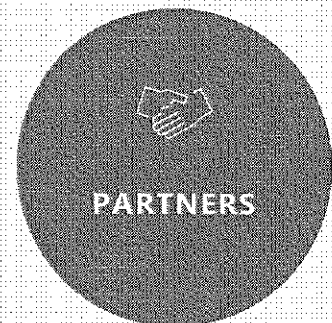
OUR **UNIQUE** APPROACH



PLATFORM

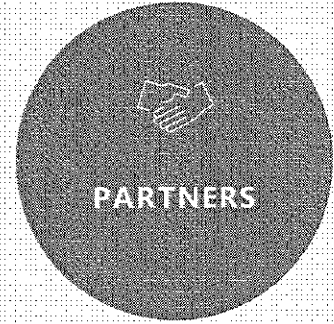
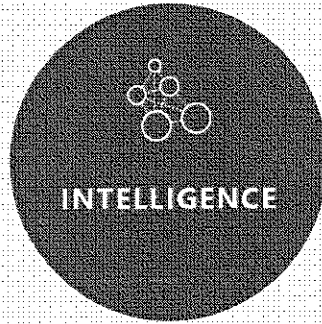
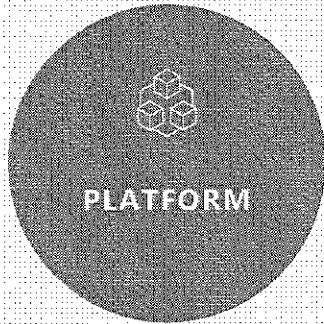


INTELLIGENCE

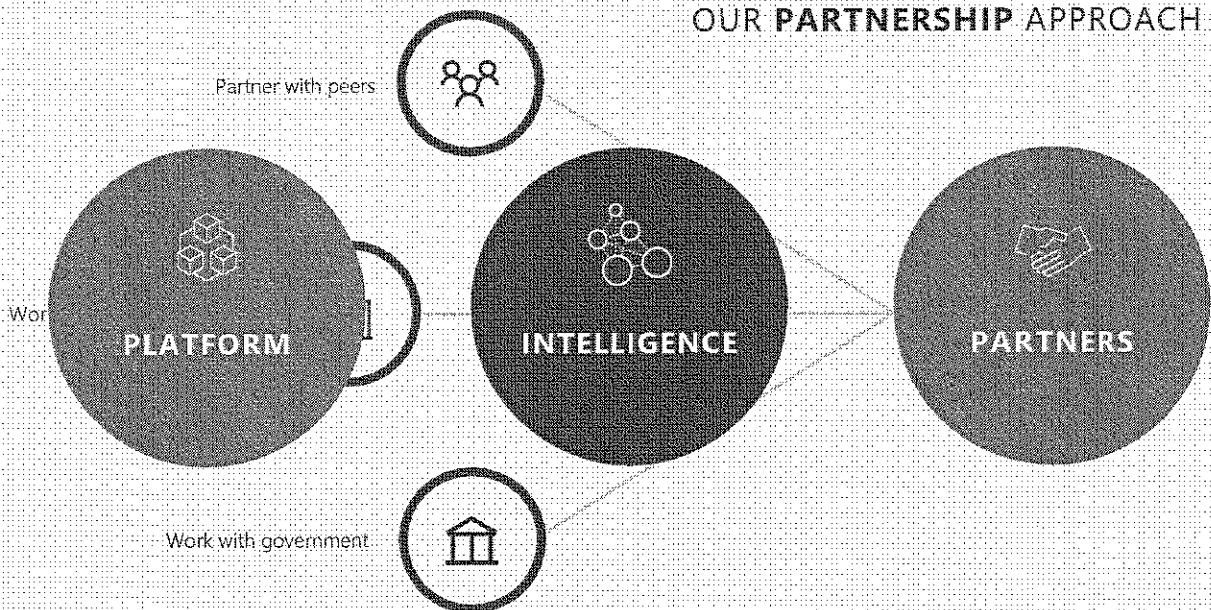


PARTNERS

OUR **UNIQUE** APPROACH

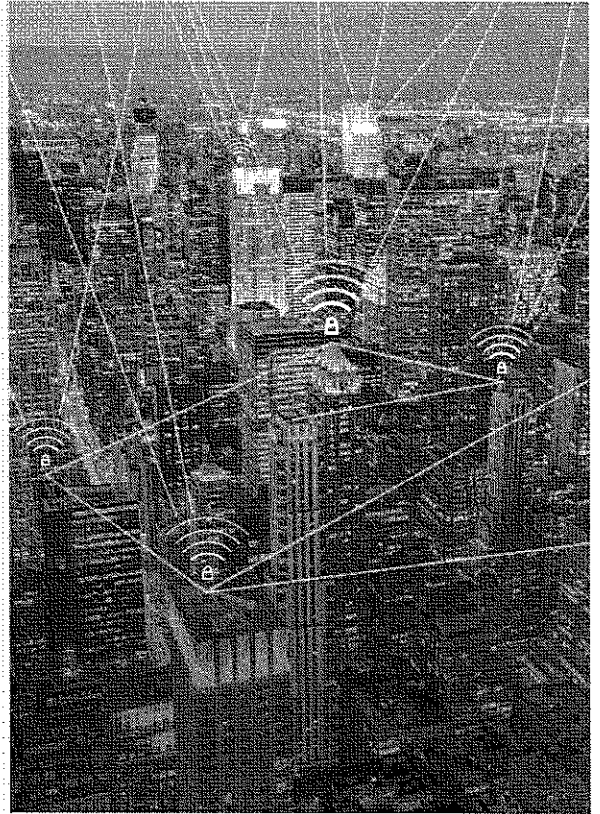


OUR **PARTNERSHIP** APPROACH



Microsoft Secure

Ensuring security to enable your digital transformation through a comprehensive platform, unique intelligence, and broad partnerships





Asia Financial Regulators Roundtable

Microsoft Cybersecurity Centre
Singapore, November 16, 2016

 Microsoft

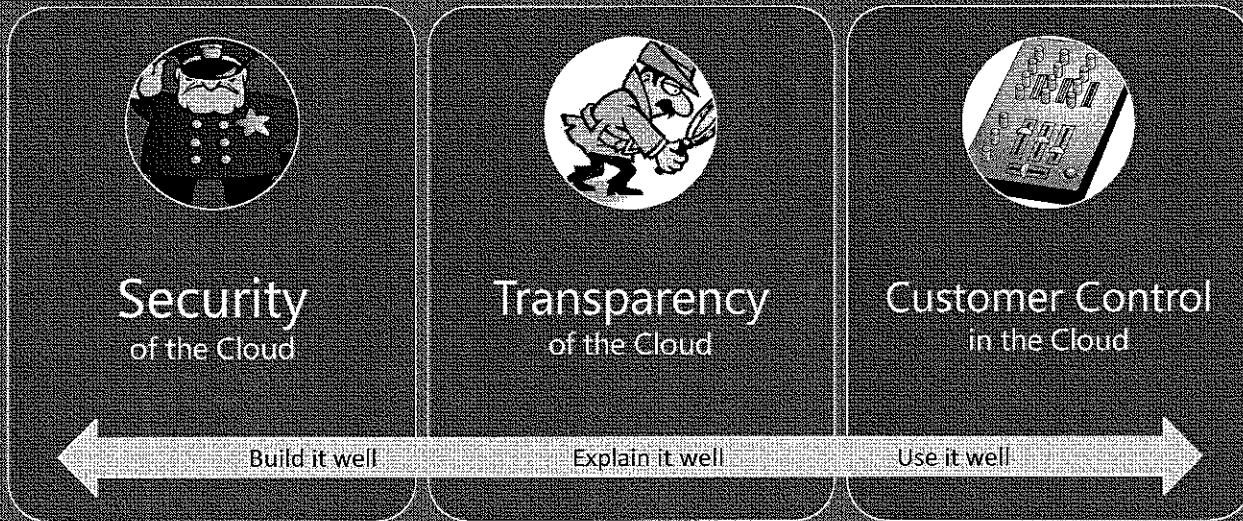


Microsoft's Financial Services Compliance Program: Transparency of the Cloud

Robert Dring
Senior Director, Office 365
Microsoft

 Microsoft

Comprehensive Risk Assurance for the Microsoft Cloud



Comprehensive Risk Assurance for the Microsoft Cloud



Transparency of the Cloud



Assess

- Relevant content
- Easily discoverable
- 3rd party audits
- Responses to standard frameworks
- Deep explanation

Examine

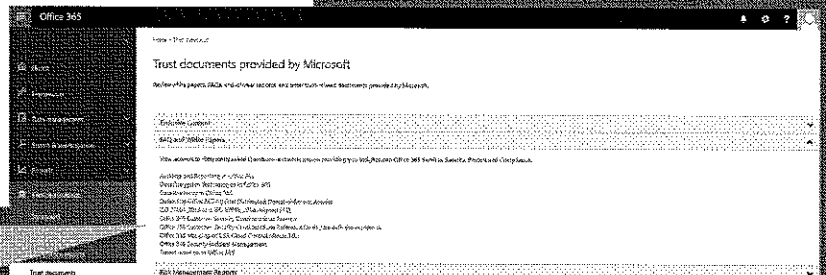
- Browse controls
- See audit details
- Review evidence

Monitor

- In-product alerts
- APIs for log feed
- Actionable intelligence

Audit Reports and Explanation

Service compliance reports across Microsoft cloud stack – Azure, Dynamics CRM and Office 365



Powerful combination of "How" customer can manage security and governance of their data with "How" Microsoft Cloud is compliant with regulatory standards relevant to customers

Transparency of the Cloud



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- Review evidence

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- In-product alerts
- APIs for log feed
- Actionable intelligence

Audited Controls

Control Implementation and Testing Details

A set of policies for information security shall be defined, approved by management, published and communicated to employees and relevant external parties.

Control ID	Control Name	Test Status	Test Date	Tested By
A.5.1	AP-01	Passed	11/11/2015	British Standards International

Browse control set and audit findings directly in product

Microsoft develops, documents, and disseminates a security awareness and training policy that addresses purpose, scope, roles, responsibilities, management commitment, coordination among organizational entities, and compliance. The Microsoft Security Policy exists in order to provide Microsoft Services Staff and Contractor Staff with a current set of clear and concise Information Security Policies. These policies provide direction for the appropriate protection of the Microsoft Services. The Microsoft Security Policy has been created as a component of an overall Information Security Management System (ISMS) for the Microsoft Services. The Microsoft Security Policy has been reviewed, approved, and is enforced by Microsoft Online Services management. Each management team is distributed to all relevant stakeholders. The Microsoft Security Policy is reviewed by the Microsoft Services Staff for review. All Microsoft Services Staff are responsible for distributing the policy to them. Customers are responsible for distributing the policy to them. Customers are responsible for receiving a copy of the Policy.

Testing performed to evaluate control effectiveness

Determined the Microsoft Office 365 Information Security Policy, dated October 30, 2014, to confirm that the document addresses purpose (Section 1.0), scope (Section 2.0), roles and responsibilities (Section 3.0), management commitment (Section 4.0 and Section 5.0), coordination among organizational entities (Section 6.0), and compliance (Section 8.0). The O365 Framework is designed to provide a common compliance baseline for all O365 product teams to follow. The SOPs create a mapping between the NIST assessment procedures and the Framework policy identifiers in order to provide an engineering specific starting point for teams identify specific areas that must be done in order to achieve compliance.

Interviewed O365 Foundation Senior Program Manager and O365 Foundation Program Manager Lead on January 14, 2015 and determined that all information security program documentation, including both policy and procedures, is reviewed and updated no less than annually. Evidence of this was provided in the form of updated policy and procedures documentation and a demonstration of the SOP SharePoint repository used to manage and communicate the procedures.

Transparency of the Cloud



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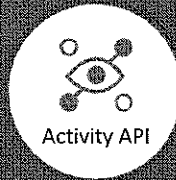
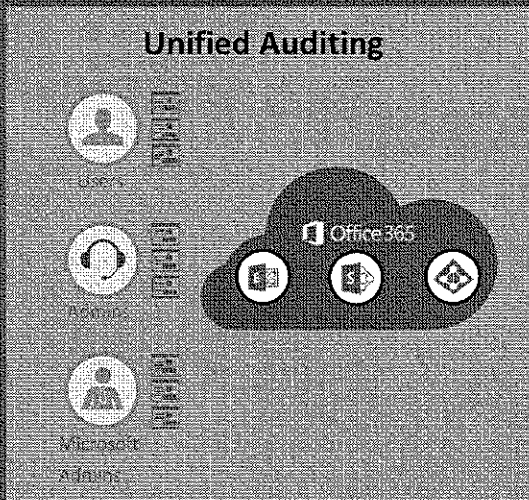
Detect Anomalous Logon

- Azure Active Directory and Office 365, automatically detect when a user may have been compromised
- Company admins can configure alerts

The screenshot displays the Azure Active Directory (AAD) console interface. The top navigation bar includes 'USERS', 'GROUPS', 'APPLICATIONS', 'DOMAINS', 'DIRECTORY INTEGRATION', and 'GROUPS'. The main content area is divided into several sections:

- REPORT**: A table with columns for 'REPORT' and 'DESCRIPTION'. It lists various security events under the heading 'ANOMALOUS ACTIVITY', such as 'Sign-in from untrusted source', 'Sign-in after multiple failures', and 'Sign-in from IP addresses with suspicious activity'. Each event has a corresponding description of what it may indicate.
- SECURITY REPORTS**: A section for viewing security reports.
- INTEGRATED APPLICATIONS**: A section for managing integrated applications.
- Alerts**: A notification box stating: 'We've detected 4 new irregular sign-in from accounts in fabrikam.com. View detailed report.' It provides instructions on how to view the report and offers options to 'Customize some or all of the users', 'Change the category', or 'Disable alerts for individual or all accounts'.
- User Profile**: A detailed view of a user named 'jon.doe', showing their profile information, roles, and a list of associated applications.
- Multi-Factor Authentication**: A section for configuring multi-factor authentication for the user.

Management Activity API



Unified auditing of user and admin activities across Office 365 services



REST/OAuth API



More transparency and control through powerful ISV and Microsoft solutions

Transparency of the Cloud



Assess

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- 3rd party audits
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- Deep explanation

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Transparency of the Cloud



Assess

Examine

Monitor

Adding the Human Element

Microsoft's contractual offering for financial institutions

Enhanced supervision, influence, and reporting

Online Services Terms

Financial services amendment

Compliance program

For all customers

One simplified consolidated document

For regulated financial entities

Applies to O365, Core Azure Services and Dynamics CRM Online

Fee-based program that supports financial entities and their regulators that need additional supervision, influence and reporting on a programmatic basis

Privacy, Security, Data Processing and Compliance

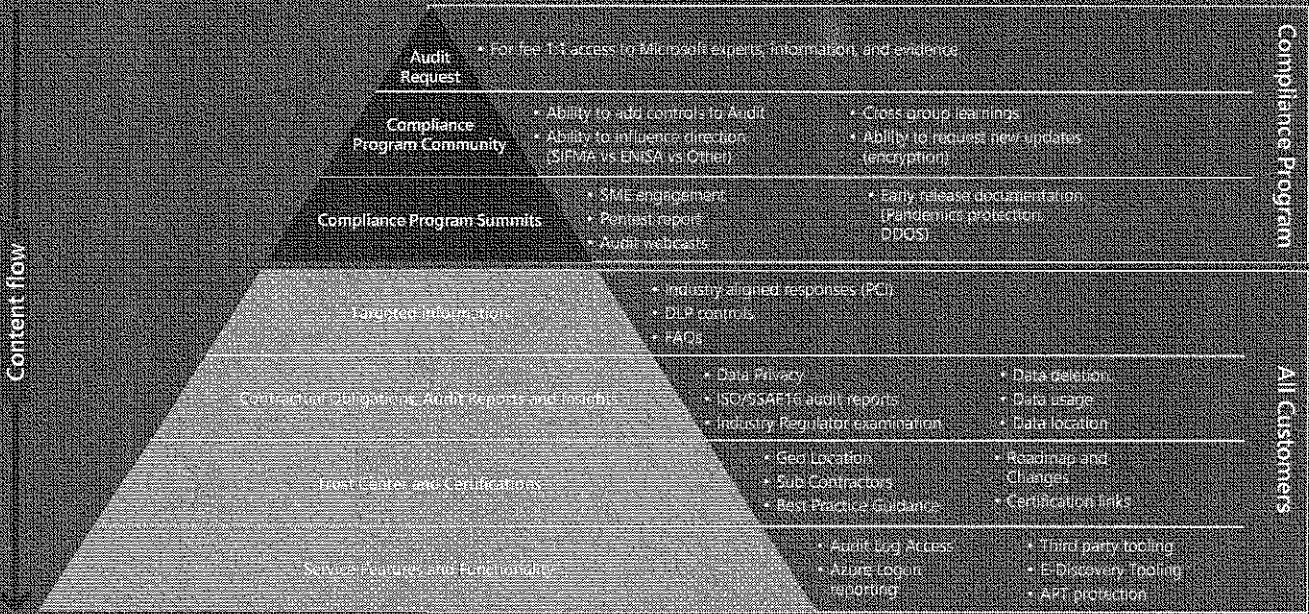
Access to Security Policy and summary of Audit Reports

Regulator right to examine

Change in law clause

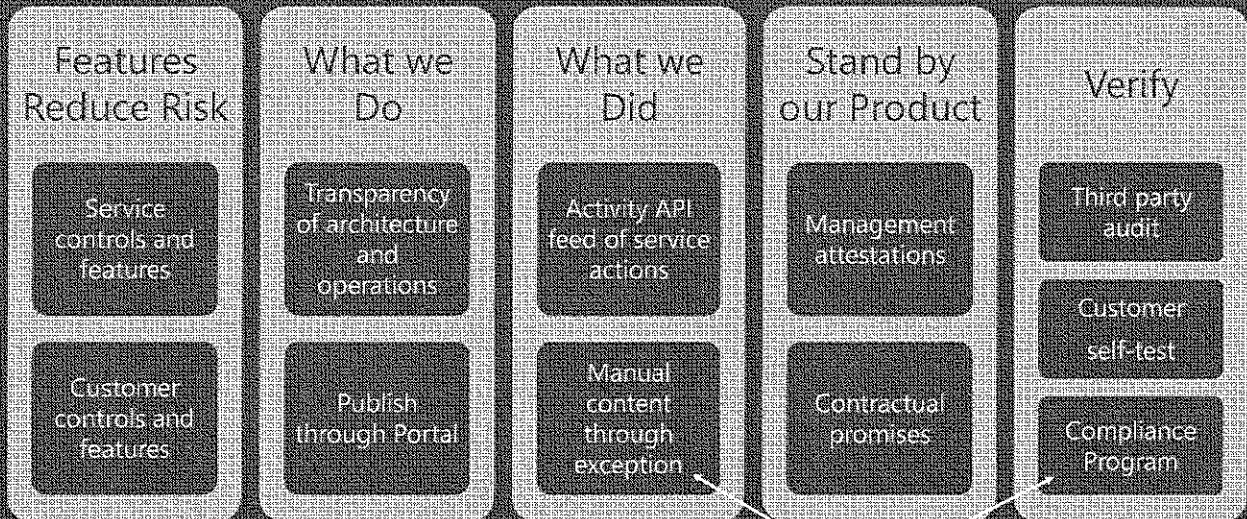
Security Foundation: Large control set - NIST 800-53, ISO 27001, SSAE-16, and more

Assessing Risk in the MS Cloud



Risk assurance at scale

Change audit from a people problem to software solution



Customer needs met through self-service

Minimize the need for human element

Compliance Program Updates

- Members now include:
 - Regional, national, and global banks and insurance companies
 - ISVs developing applications for financial institutions
 - Consortiums representing multiple smaller banks
- Streamlined the contracting process
 - M248 amendment provides all the commitments necessary for FSI
 - Incorporated the Compliance Program agreement into M248
 - Customer simply emails Compliance Program team to join the program

Compliance Program Updates

- Compliance Program customers specify controls for focus during third party audits
 - Recent examples:
 - Encryption in Transit (included in SSAE SOC 2 audit)
 - Encryption at rest (included in SSAE SOC 2 audit)
 - DR testing (included in SSAE SOC 2 audit)
 - PII handling (included in ISO 27018 audit)
 - Data deletion (included ISO 27018 audit)
- No customer has exercised paid ad-hoc rights
 - We satisfied all requests for information without invoking right to charge

Assessments and Audits: Need for Common Framework

Risk assessment must cover the whole cloud and customer's on premises configuration

Microsoft experience across many FSI customers:

- Much repetition, very inefficient
- FSI resources spread thin repeating basics

Microsoft recommendation:

1. FSIs use common assessment frameworks for baseline
2. or FSIs collaborate and conduct group audit
3. or Regulators examine large vendors

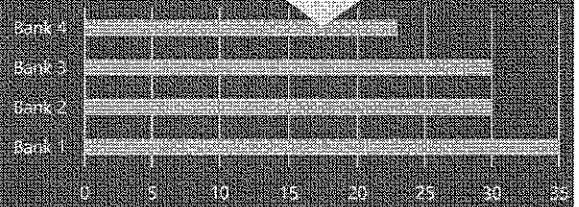
Result:

- Cloud vendors provide response to framework, focus automation reporting on framework controls
- Industry as a whole can form opinion of vendor quality
- FSIs focus on most important areas, deeper insights

Today: Much effort spent repeatedly covering roughly same 80% core

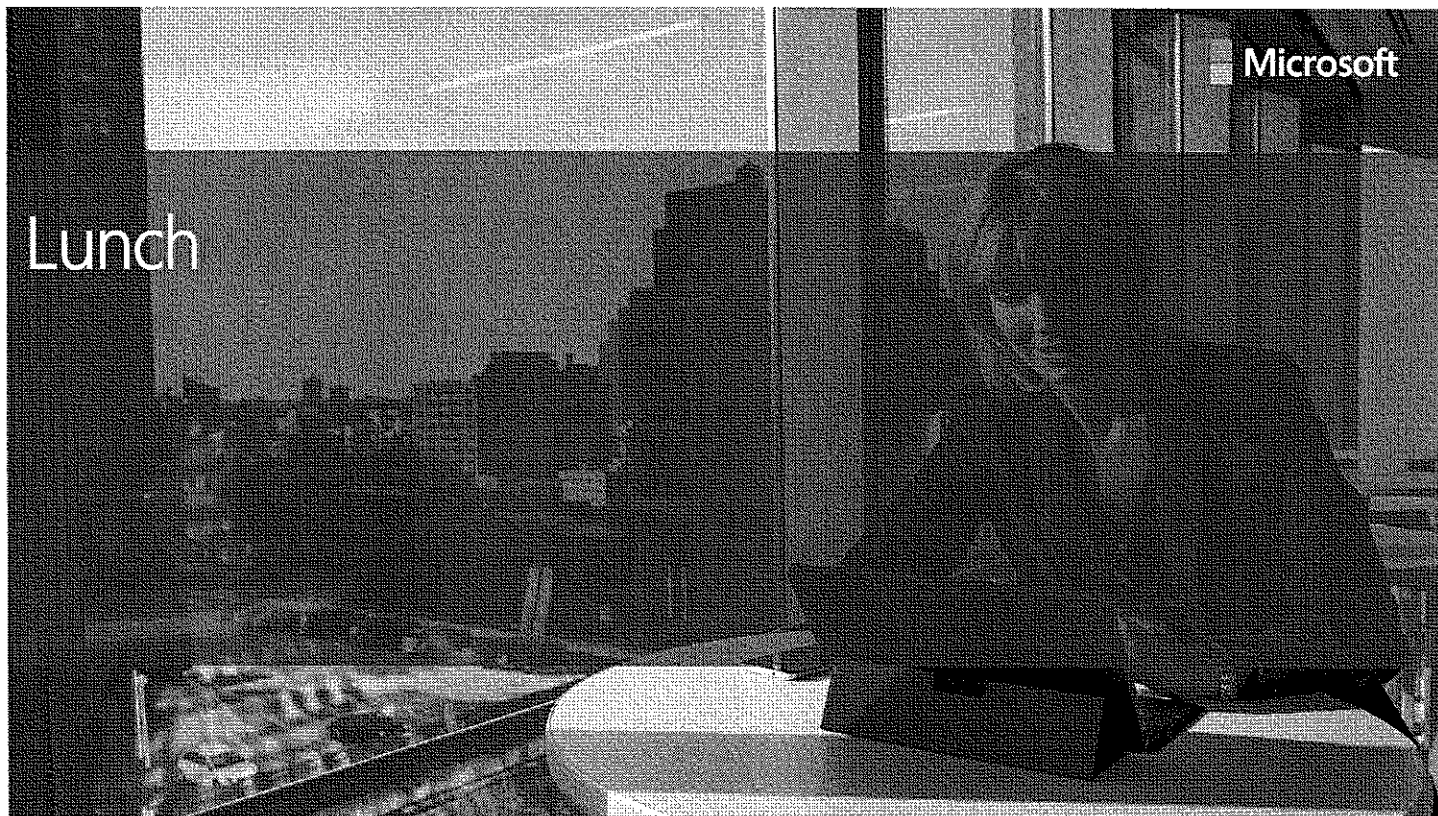


Common framework allows "core" to be assessed quickly so FSI can focus resource on more complex areas



Microsoft

Lunch





Microsoft

GUEST SPEAKER:

Cloud Computing Implementation Guidance

James Wilkins

Bankers Association of Singapore



Security in the Cloud

Alan Ross

Microsoft Azure Compliance Director
Microsoft



Microsoft

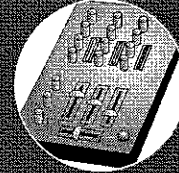
Comprehensive Risk Assurance for the Microsoft Cloud



Security
of the Cloud



Transparency
of the Cloud



Customer Control
in the Cloud

Build it well

Explain it well

Use it well

A TRUSTED CLOUD PLATFORM

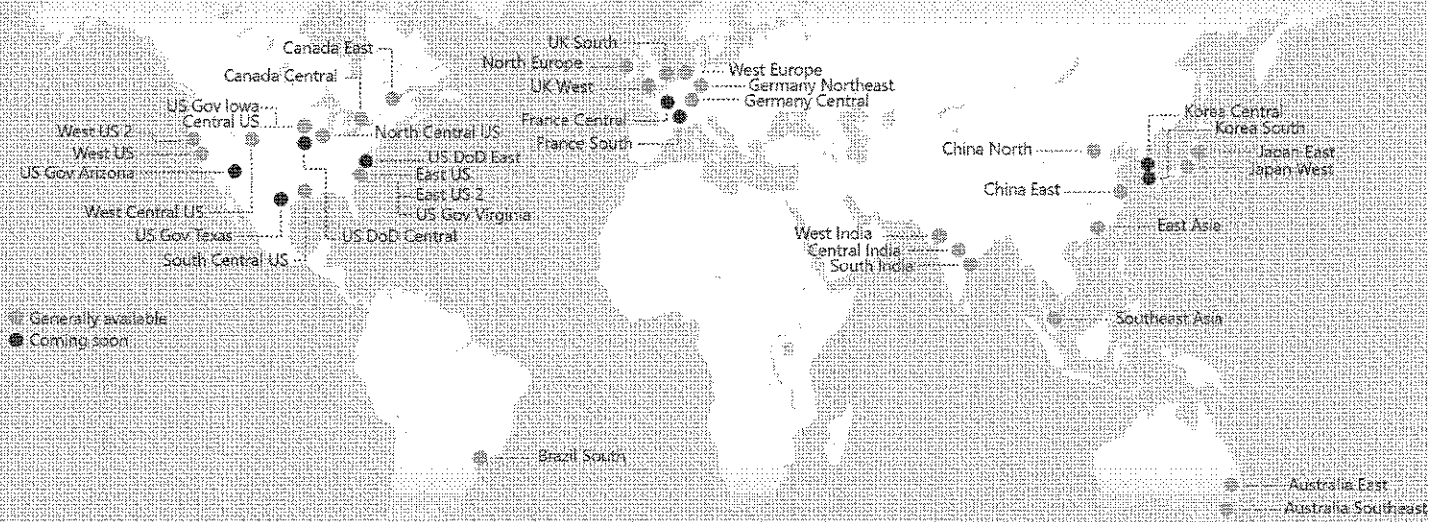
Security
Privacy and Control
Transparency
Compliance

THAT EMPOWERS CUSTOMERS

Key Vault
Multifactor Authentication
VPN + ExpressRoute
Partner solutions

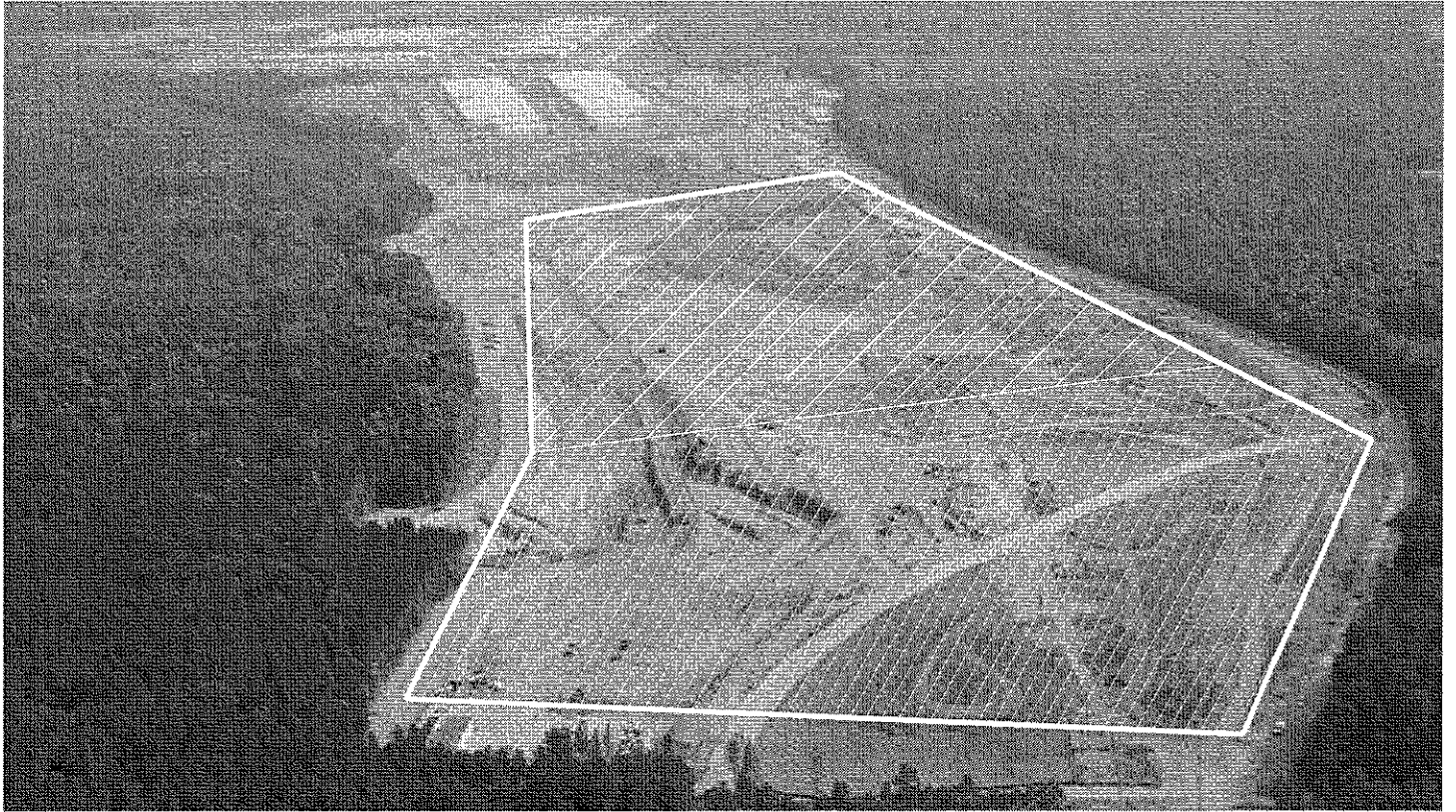
Azure Scale

30 Generally Available Regions Worldwide – More than any major public cloud platform

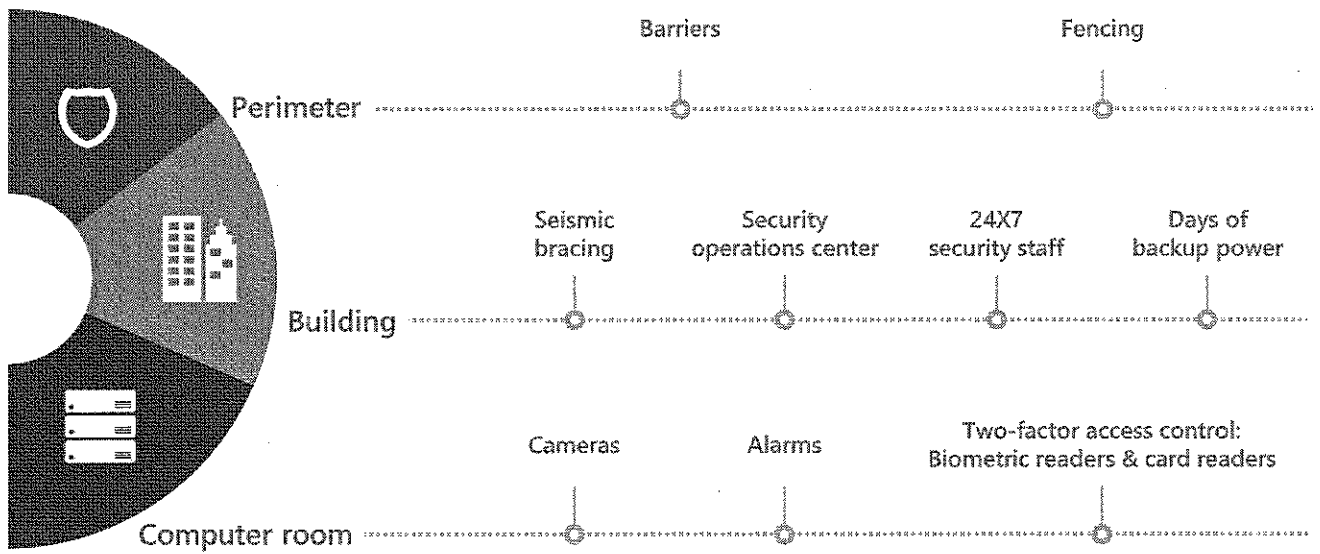


- 1+ million servers
- One of the top 3 networks in the world (coverage, speed, connections)





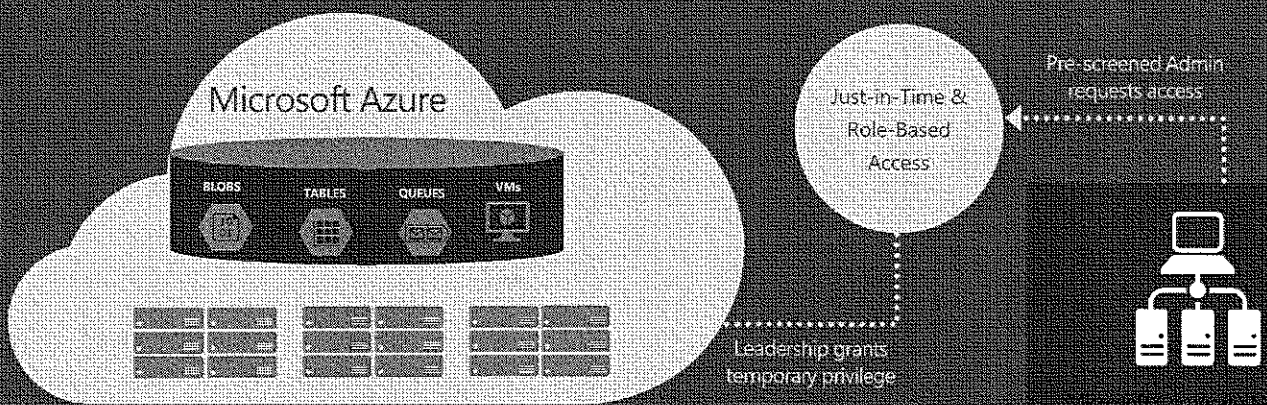
Data Center Controls



Top Exposures Resulting in Tenant Breach

Risk	Mitigation
Internet Exposed RDP or SSH Endpoints	Network ACLs or Host-based Firewall; Strong passwords; VPN or SSH Tunnels
Virtual Machine Missing Security Patches	Keep Automatic Updates Enabled;
Web Application Vulnerability	Securing Azure Web Applications; Vulnerability scan/penetration test
Weak Admin/Co-Admin Credentials	Azure Multi-Factor Authentication; Subscription Management Certificate
Unrestricted SQL Endpoint	Azure SQL Firewall
Storage Key Disclosure	Manage Access to Storage Resources
Insufficient Security Monitoring	Azure Security and Log Management;

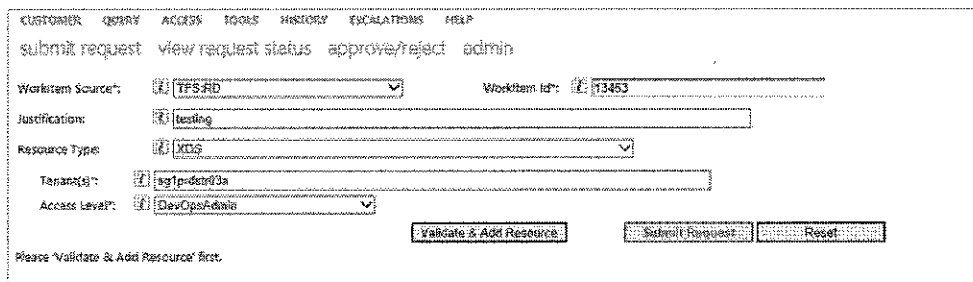
Azure Access Policy & Controls



- ✓ No standing access to the platform and no access to customer Virtual Machines
- ✓ Grants least privilege required to complete task; access requests are audited and logged
- ✓ Multi-factor authentication required for all administration

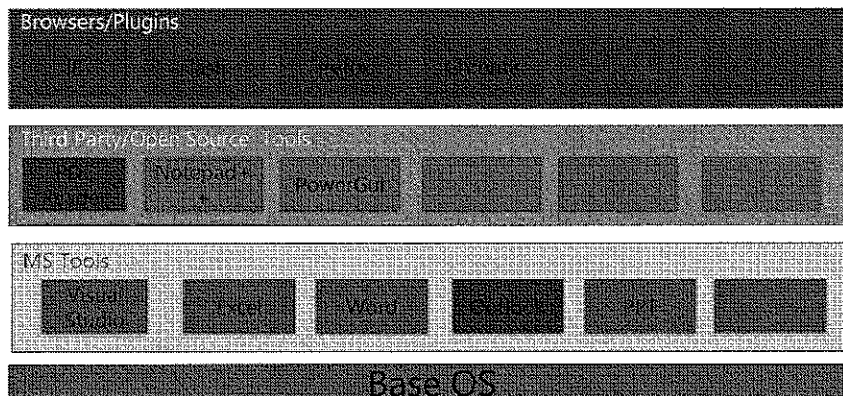
2FA Required to Even Request Access

- All steps logged independently
- Security analytics system monitors access JIT/RBAC requests
 - Alerts when workflows do not correlate with TFS/requests
 - When an admin attempts subversion of the process, a Sev 1 incident occurs



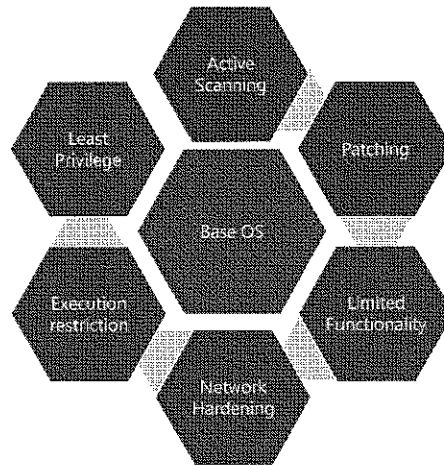
Online Services Secure Console

- From this:

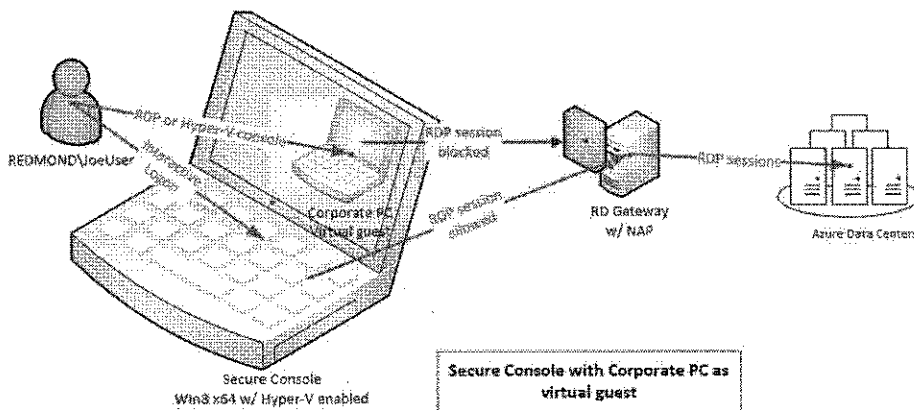


To this

Securing the Console



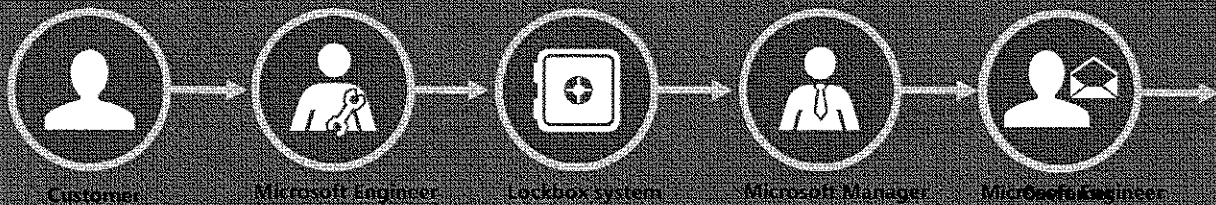
Enforced Admin Console



Use of Secure Console for administrative operations in the cloud (in addition to 2FA for access or privilege elevation)

Customer Lockbox

Now we want to extend Lockbox approval to you for human access to customer content

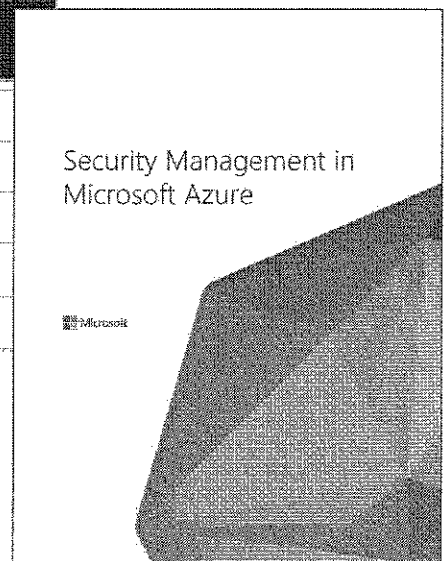
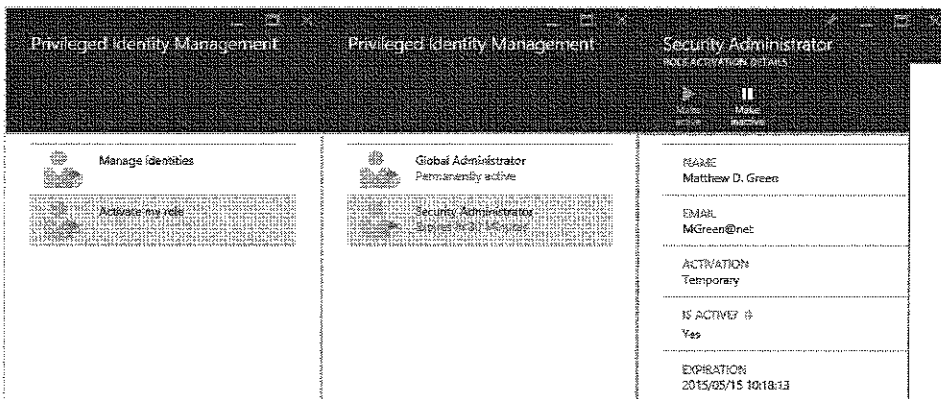


Customer controls authorization of Office 365 personnel access

Your Data

User Risk

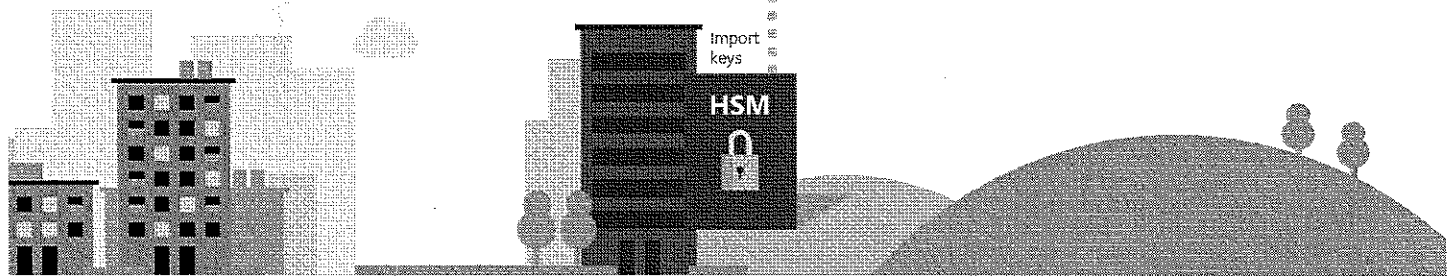
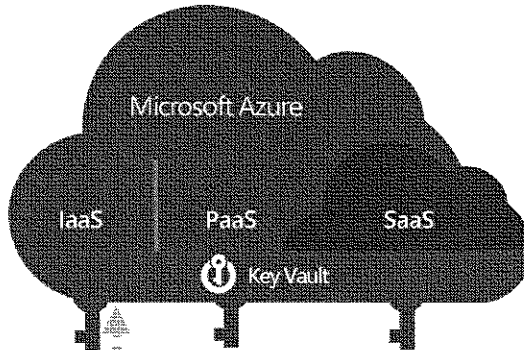
Extended to Customers



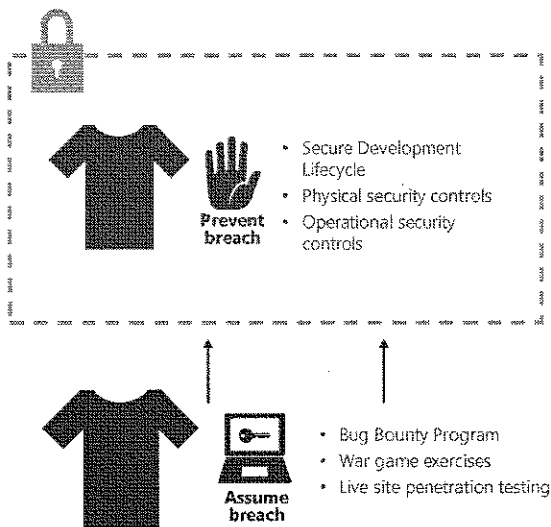
Microsoft Azure Key Vault

Key Vault offers an easy, cost-effective way to safeguard keys and other secrets used by cloud apps and services using HSMs.

- ✓ You manage your keys and secrets
- ✓ Applications get high performance access to your keys and secrets... on your terms

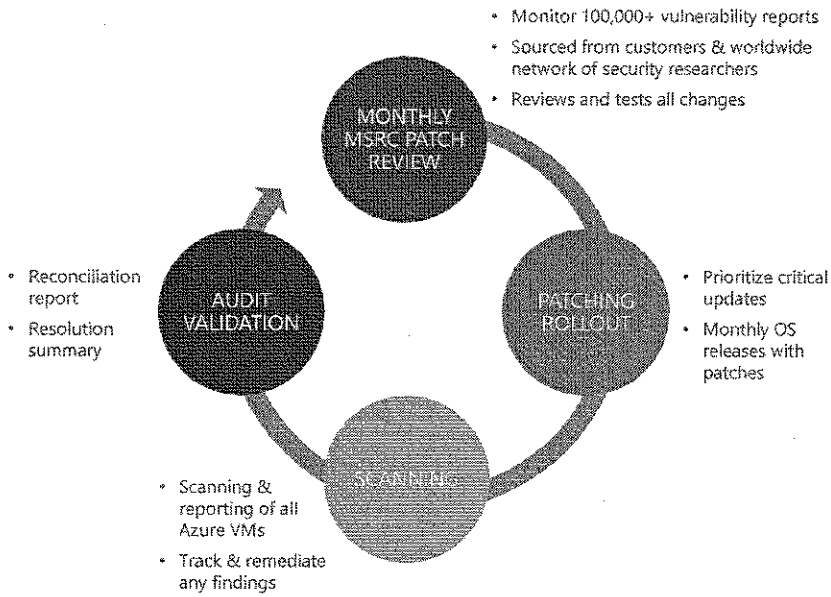


Prevent & Assume Breach



- ✓ **Prevent Breach** is a defensive strategy aimed at predicting and preventing a security breach
- ✓ The **Assume Breach** strategy, unique to Microsoft, is a key operational practice that hardens cloud services
 - ✓ Leverages Microsoft's vast threat intelligence
 - ✓ Includes state of the art security monitoring and response

Update Management



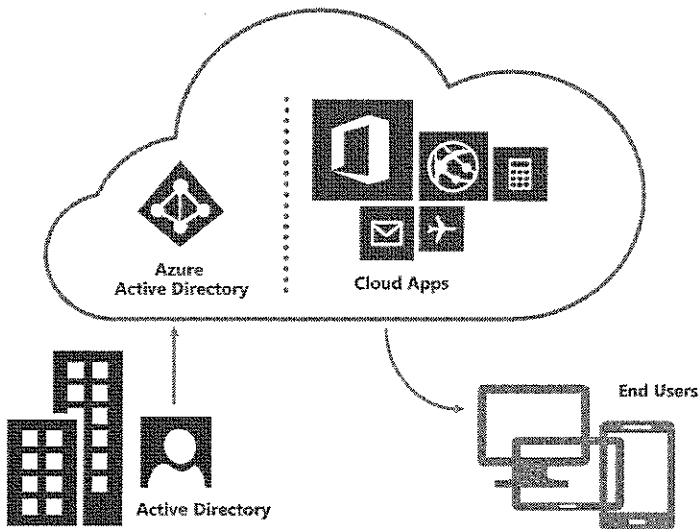
AZURE:

- ✓ Provides customer options on patch management strategy
- ✓ Offers patch management as a service
- ✓ Rigorously reviews & tests all changes

CUSTOMER:

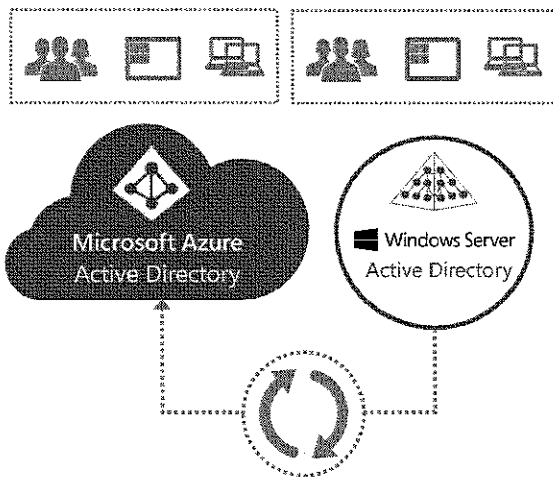
- ✓ Applies similar patch management strategies for their Virtual Machines

Identity & Access: Azure AD



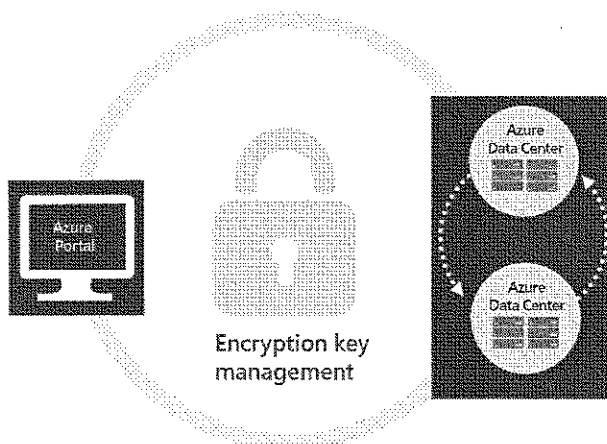
- ✓ Centrally manage users and access to Azure, O365, and hundreds of pre-integrated cloud applications
- ✓ Build Azure AD into your web and mobile applications
- ✓ Can extend on-premises directories to Azure AD through synchronization

Identity & Access: Multi Factor Authentication



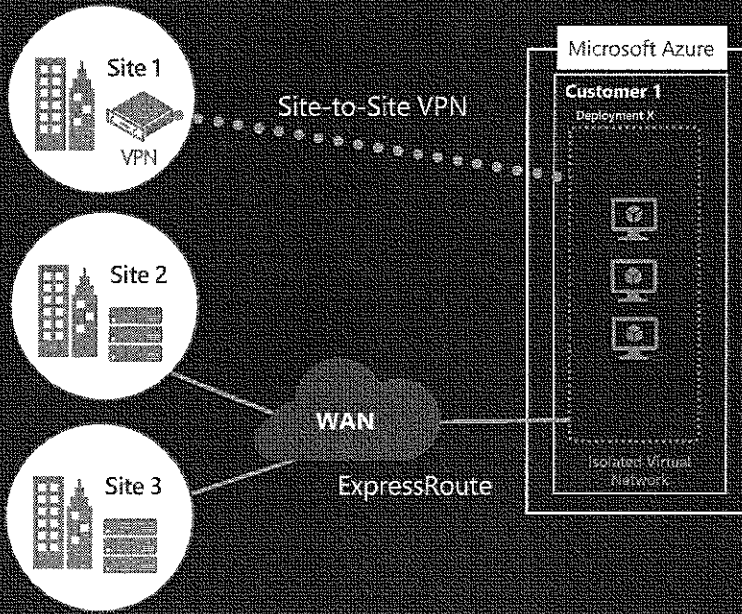
- ✓ Protect sensitive data and applications both on-premises and in the cloud with Multi Factor Authentication
- ✓ Can use Active Directory (on-premises) with Azure Active Directory (in cloud) to enable single sign-on, a single directory, and centralized identity management
- ✓ Multi Factor Authentication can be implemented with Phone Factor or with AD on-premises

Options for Encryption in Transit



- ✓ Microsoft encrypts traffic between data centers
- ✓ Customer VMs are configurable
- ✓ Most Microsoft controlled endpoints encrypted by default
- ✓ Office 365 traffic encrypted by default

Azure Private Connectivity



- ✓ Azure VMs do not have public IP endpoints by default
- ✓ All Azure VMs must be created in an isolated VNET
- ✓ Customers can extend their on-premises sites to Azure using VPN or dedicated ExpressRoute connections
- ✓ Customer owns and manage certificates, policies, and user access
- ✓ Customers can seamlessly blend their own intrusion detection pipeline with Azure telemetry

CLOUD-POWERED PROTECTION

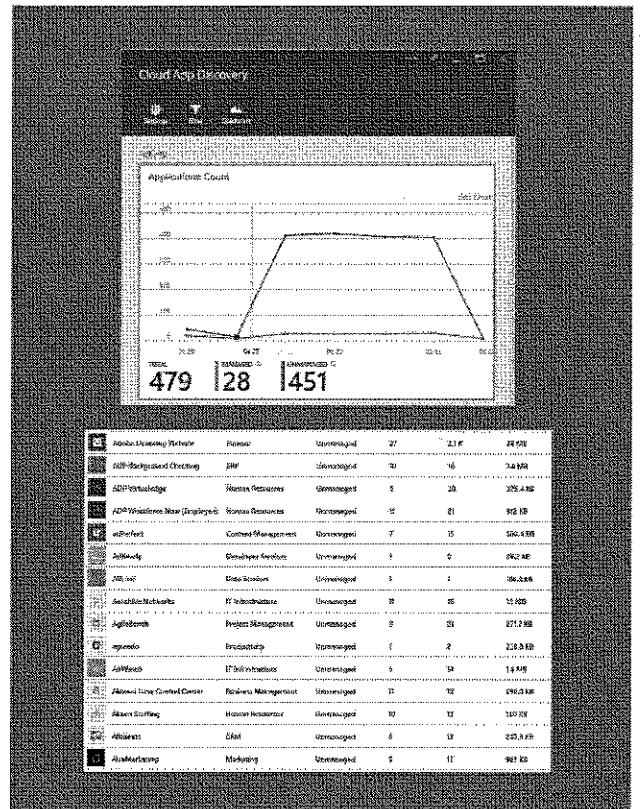
Microsoft Azure Active Directory Cloud app discovery

- Comprehensive reporting**
- SaaS app category
 - Number of users
 - Utilization volume

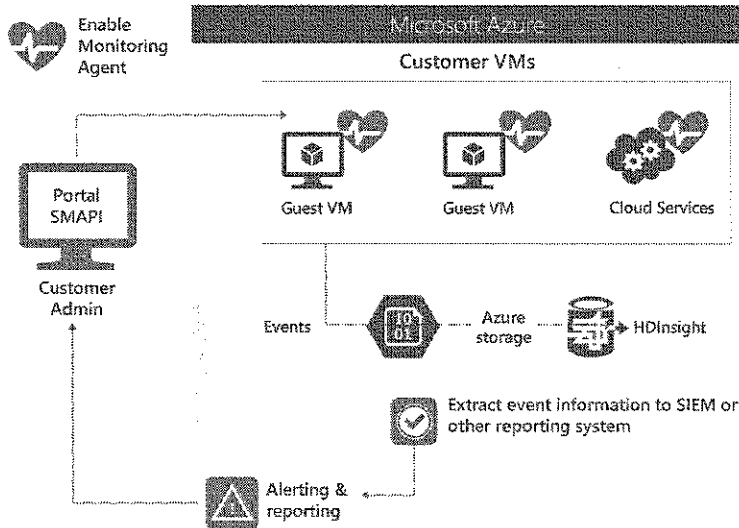
Reveal shadow IT

Discover all SaaS apps in use within your organization

Source: Help Net Security 2014



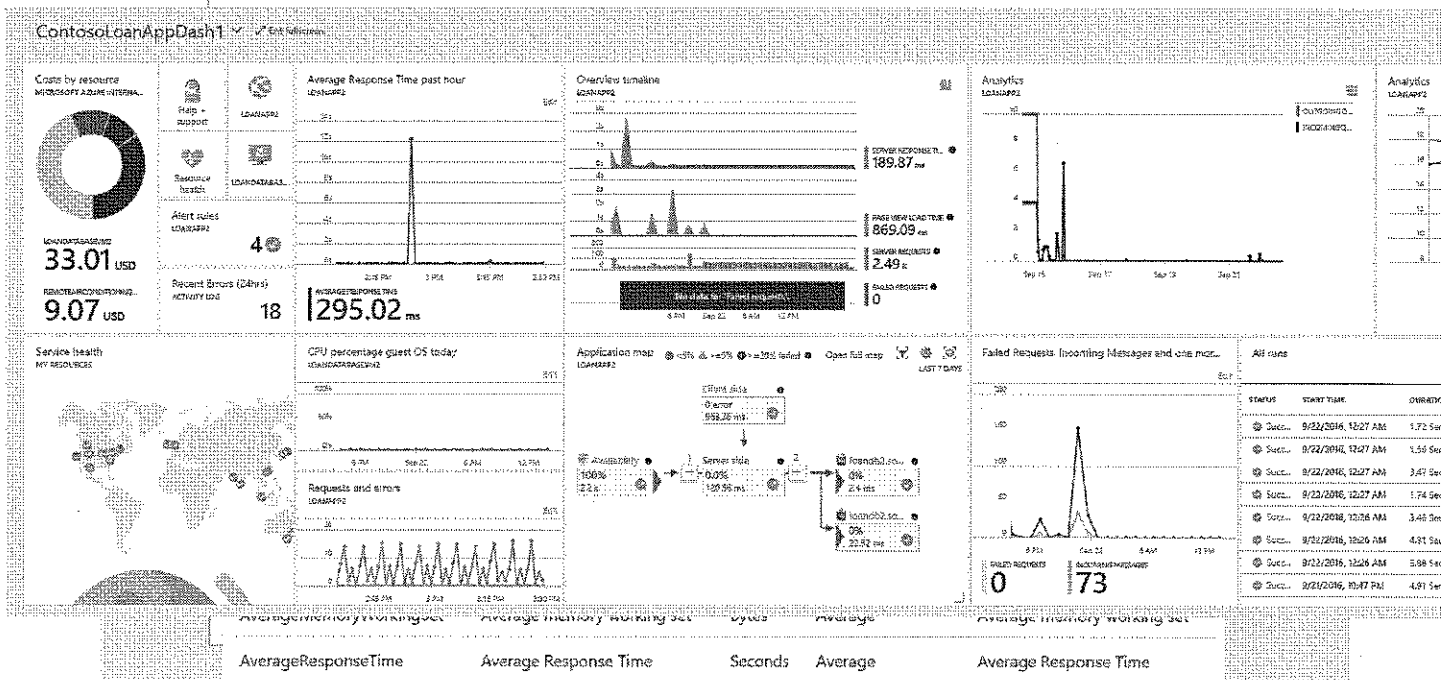
Host Protection: Monitoring, Firewalls, AV



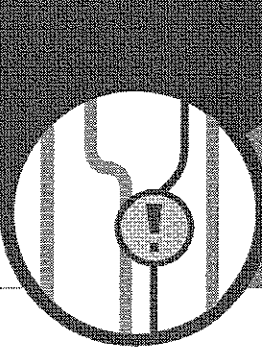
- ✓ Configure monitoring, export events for analysis
- ✓ Configure Microsoft Antimalware or an AV/AM solution from a partner
- ✓ Apply corporate firewall using site-to-site VPN, configures endpoints
- ✓ Define access controls between tiers and provide additional protection via the OS firewall
- ✓ Monitor and respond to alerts

Typical Microsoft Web/sites

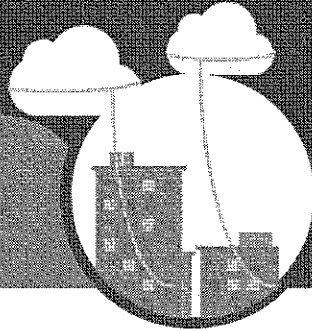
Metric	Metric Display Name	Unit	Aggregation Type	Description
--------	---------------------	------	------------------	-------------



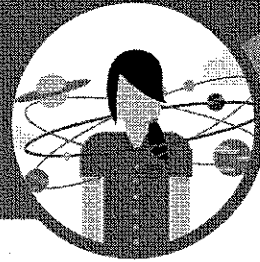
Azure Security Center Helps Unlock Cloud Opportunities



Gain visibility and control



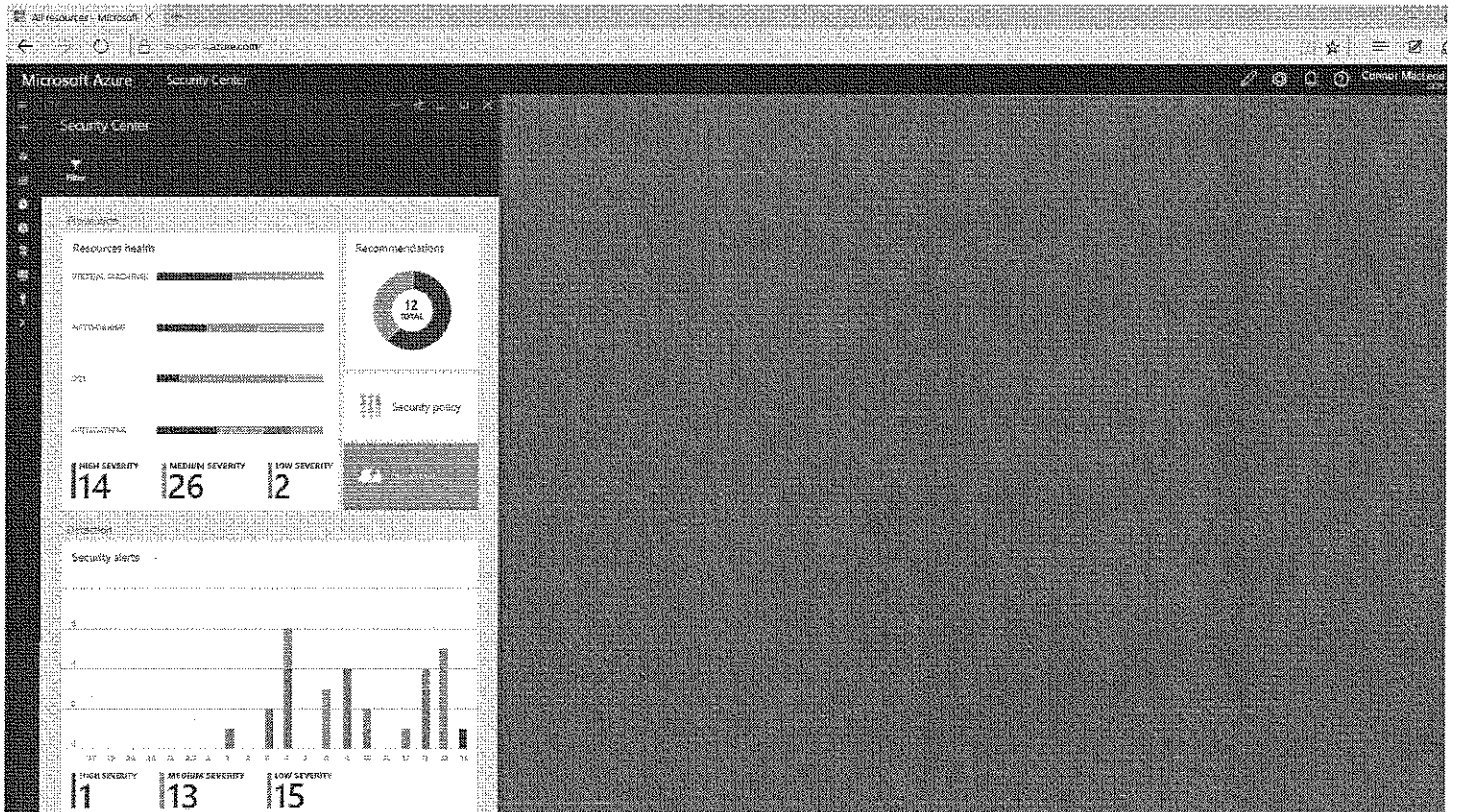
Enable agility and security



Integrate partner solutions



Keep up with cyber threats



Microsoft Azure Security Center Recommendations Add a Web Application Firewall

Resources Health

12 Total

Security policy

HIGH SEVERITY 14
MEDIUM SEVERITY 26
LOW SEVERITY 12

Security alerts

Recommendations

DESCRIPTION	RESOURCE	STATE	SEVERITY
Enable Data Collection	subscription 1	Resolved	High
Enable Antimalware	2 Virtual Machi...	Resolved	High
Add a Web Application Firewall	1 Web App	Open	High
Enable Network Security Groups	4 Subnets	Open	High
Enable Auditing on 2 SQL servers	5 SQL Servers	Open	High
Enable Transparent Data Encryption on 7 SQL d...	7 SQL Databases	Open	High
Restrict access through public external endpoint	2 Subnets	Open	High
Apply 3 security updates	5 Virtual Machi...	Open	High
Resolve 7 baseline rules mismatch	5 Virtual Machi...	Open	High
Enable multi factor authentication	5 Users	Open	High
Configure AGLs for GeoIP clients	4 Virtual Machi...	Open	Medium
Route traffic through Web Application Firewall	2 Web Apps	In Progress	Medium

Add a Web Application Firewall

Use existing web application firewall

- Contoso-WAF FS BIG-IP WAF BYOL

- Or -

Create new web application firewall

- Barracuda Web Application Firewall Express Networks
- FS BIG-IP WAF BYOL FS Networks
- IMPerva IMPerva Networks
- INCAPSULA Incapsula Networks
- Cloud Flare Cloud Flare Networks

Microsoft Azure Security Center Security alerts Brute Force attempts were detected

Resources Health

12 Total

Security policy

HIGH SEVERITY 14
MEDIUM SEVERITY 26
LOW SEVERITY 12

Security alerts

Security alerts

DESCRIPTION	DETECTED BY	EVENTS	DATE	STATE	SEVERITY
Incident detected: database breach	Microsoft	1	7/15	Open	High
A user account password has been...	Microsoft	2	7/14	Open	High
Critical malware action failed	Antimalware	5	7/14	Open	High
Traffic to malicious IP 5.5.5.3	Microsoft	2	7/13	Open	High
Brute Force Attempts were detected	Microsoft	1	7/13	Open	High
Exploitable Process Detected (Esp...	Microsoft	1	7/13	Open	High
SQL Injection attempt from 103.3...	Web Applic...	1	7/12	Open	High
Non-critical malware action failed	Antimalware	1	7/10	Open	High
Traffic to malicious IP 104.12.112...	Microsoft	1	7/10	Open	High
SQL Injection attempt from 103.3...	Microsoft	4	7/9	Open	High
Traffic to malicious IP 621.14.112...	Microsoft	1	7/8	Open	High
Brute Force attempt were detecte...	Web Applic...	2	7/6	Open	High
DDoS Attack from 156.14.126.12...	Web Applic...	2	7/5	Open	High
SQL Injection attempt from 103.3...	Web Applic...	4	7/5	Open	High
Anti-malware engine action failed	Antimalware	1	7/5	Open	High

Brute Force attempts were detected

ATTACKER IP: 90.159.110.27

ATTACKER LOCATION: Russia

RDP activity per hour

Threat map

 Microsoft

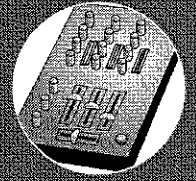
Any
Questions?



 Microsoft



Customer Control in the Cloud



Guidance

- Secure Score
- Security control considerations

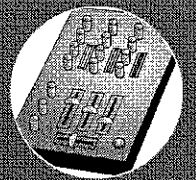
Prevention

- Data leakage protection
- Advanced threat protection

Control

- Information Protection
- Multi-factor Authentication

Customer Control in the Cloud



Guidance

- Secure Score
- Security control considerations

Prevention

- Data leakage protection
- Advanced threat protection

Control

- Information Protection
- Multi-factor Authentication

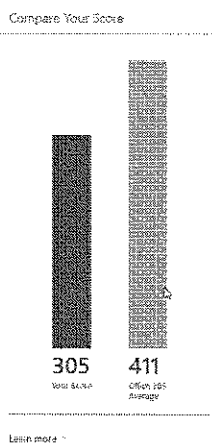
Guidance: Simple for All - Secure Score

In-product best practice guidance

Customer's configuration compared against baseline recommendations

Customer compared against others

Clear guidance on how to configure settings and improve score



325 Score

These scores are high value, and are very important to excellent start

305 Current Score | 512 Max Score

5 Actions in the queue | Your pending Security Score is 325

Recent Alerts: High M365 Examine

You might enable M365 for all of your users accounts because a bunch of your Office 365 users can lead to a breach of any of your data. We found that you have 2 accounts out of 10 that did not have M365 for all of your users. Enable M365 for these 2 accounts and your score will go up 8 points

Account Status: 2 Privileged Roles

Guidance: Deep for Sophisticated Customers

Data Resiliency 3/13 Assessed

Features and considerations for keeping information secure and recoverable

Data Leakage 6/82 Assessed

Features and considerations for preventing data leaks and methods for responding to a data leak incident

Mailbox Security

Mailbox Security Assessment

1	A	B	C	D	E	F	G
1	Identity	AzureAD	Disable identities that are not active	Reduce the number of active identities to reduce licensing costs and the identity attack surface. Periodically check for inactive users and disable accounts that are not active. For example, in Exchange Online, you can use the Get-StoreMailboxDetailReport cmdlet to view mailboxes that have not been accessed for at least the last 30 days. Identities for inactive mailboxes should be disabled.	Inactive Mailbox Report		Get-SpoActiveUserReport, Get-CsActiveUserReport, Get-StoreMailboxDetailReport
2	Identity	AzureAD	Review that identities created are approved	Use an approval process to verify that all identities created in your environment are valid. This can help you to detect suspicious and suspicious activities	New user Self-Service Mailboxes		Get-Mailbox -Filter, Get-MailboxActiveUserReport
3	Authentication	AzureAD	Enforce to MFA passwords	Reset all passwords for high-privileged accounts to complicate a continued foothold in the environment in the event of a breach.			
4	Admin	Exchange	Restrict permissions for groups of users	Verify that high-privileged roles have not been assigned to any un-authorized users. You can search the administrator audit logs to discover who made changes to organization, server, and recipient configuration. This can be helpful when you're trying to track the cause of unexpected behavior, to identify a malicious administrator, to investigate data leaks, or to verify that compliance requirements are being met.	Role Group Report	Of by Search in Office 365	Get-AdminAuditLogConfig fl AdminAuditLogEnabled, SearchAdminAuditLog
5	Users	Exchange	Detect forwarding being setup	Regularly review all email forwarding settings to detect fraudulent activity. Email forwarding lets you to set up a mailbox to forward email messages sent to that mailbox to another user's mailbox, in or outside of your organization. But it's a misnomer commonly used by hackers and malicious individuals to steal data and create and maintain a foothold in the environment.			Get-Mailbox { \$_.ForwardingSMTPAddress -ne \$null } fl ForwardingSMTPAddress, DeliveryToMailboxAndForward, Get-InboxRule

Customer Control in the Cloud



Guidance

- Secure Score
- Security control considerations

Prevention

- Data leakage protection
- Advanced threat protection

Control

- Information Protection
- Multi-factor Authentication

DATA LOSS PREVENTION IN OFFICE 365

Helps to identify, monitor, and protect sensitive data through deep content analysis



IDENTIFY



MONITOR



PROTECT



END-USER EDUCATION

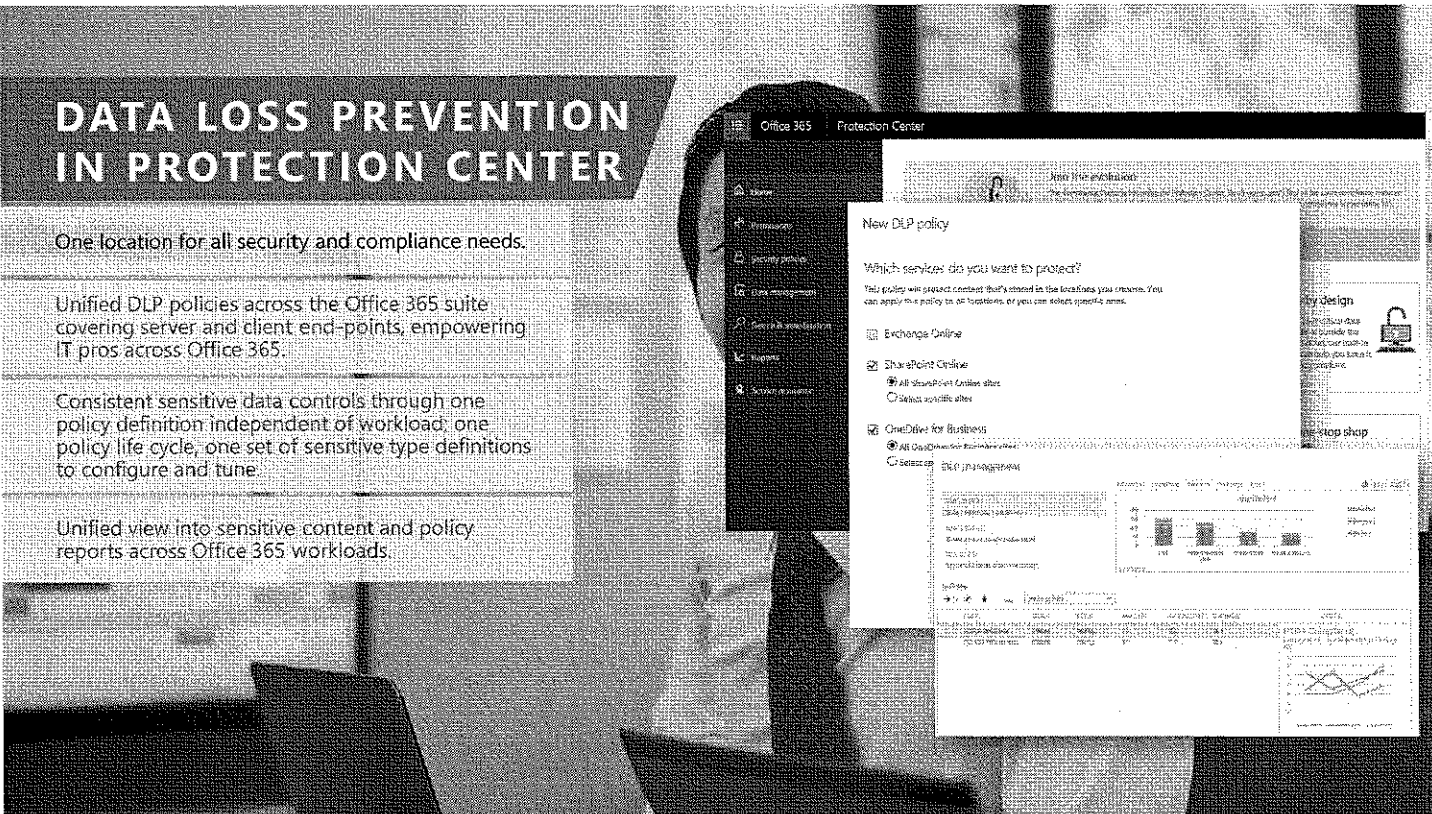
DATA LOSS PREVENTION IN PROTECTION CENTER

One location for all security and compliance needs.

Unified DLP policies across the Office 365 suite covering server and client end-points, empowering IT pros across Office 365.

Consistent sensitive data controls through one policy definition independent of workload, one policy life cycle, one set of sensitive type definitions to configure and tune.

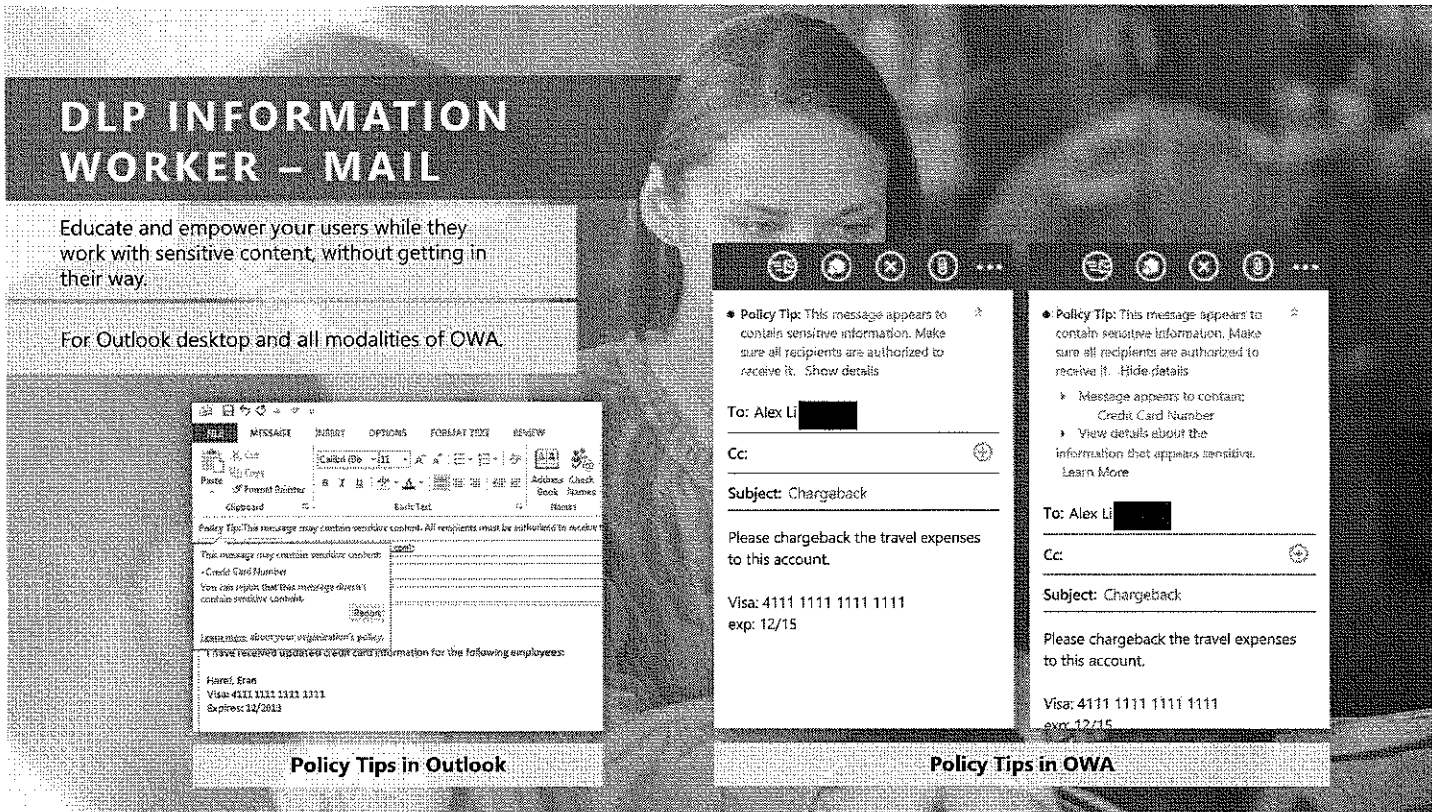
Unified view into sensitive content and policy reports across Office 365 workloads.



DLP INFORMATION WORKER – MAIL

Educate and empower your users while they work with sensitive content, without getting in their way.

For Outlook desktop and all modalities of OWA.



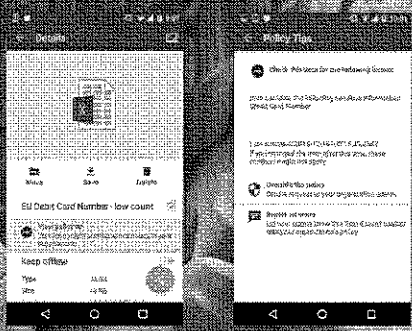
Policy Tips in Outlook

Policy Tips in OWA

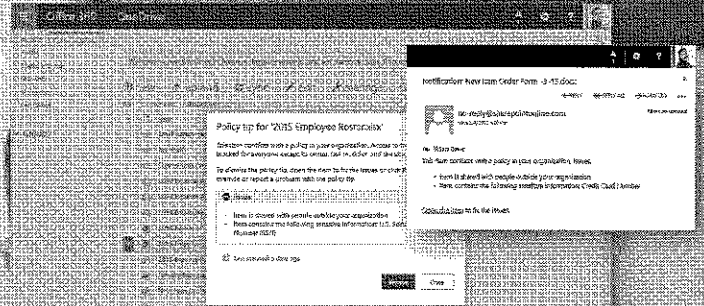
DLP INFORMATION WORKER – DOCUMENTS

Educate and empower your users while they work with sensitive content, without getting in their way.

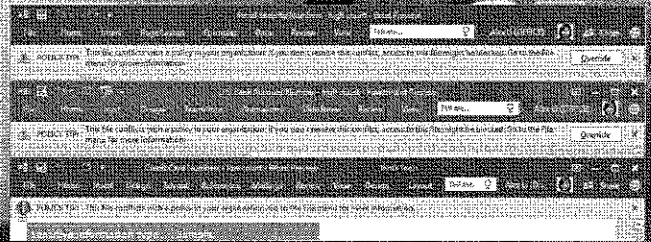
Available for Outlook desktop and aIOD4B and SPO Web access, OneDrive mobile client plus integration with desktop Excel, Word and PowerPoint modalities of OWA.



Policy Tips in OneDrive Mobile Client



Policy Tips in SharePoint and OneDrive for Business



Policy Tips in Office 2016, Word, Excel, PowerPoint

OFFICE 365 ADVANCED THREAT PROTECTION



PROTECTION AGAINST UNKNOWN MALWARE/VIRUSES

- Sandboxing technology
- Behavioral analysis with machine learning
- Dynamic Delivery to eliminate latency
- Admin alerts



TIME-OF-CLICK PROTECTION

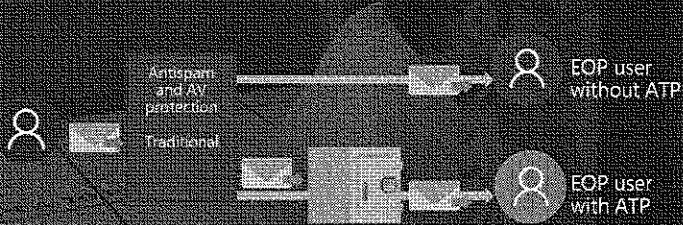
- Real-time protection against malicious URLs
- Zero-hour auto purge to correct false positives
- Growing URL coverage
- Admin visibility into compromised users



RICH REPORTING AND TRACING

- Built-in URL trace
- Reports for advanced threats
- Common administration console

OFFICE 365 ADVANCED THREAT PROTECTION

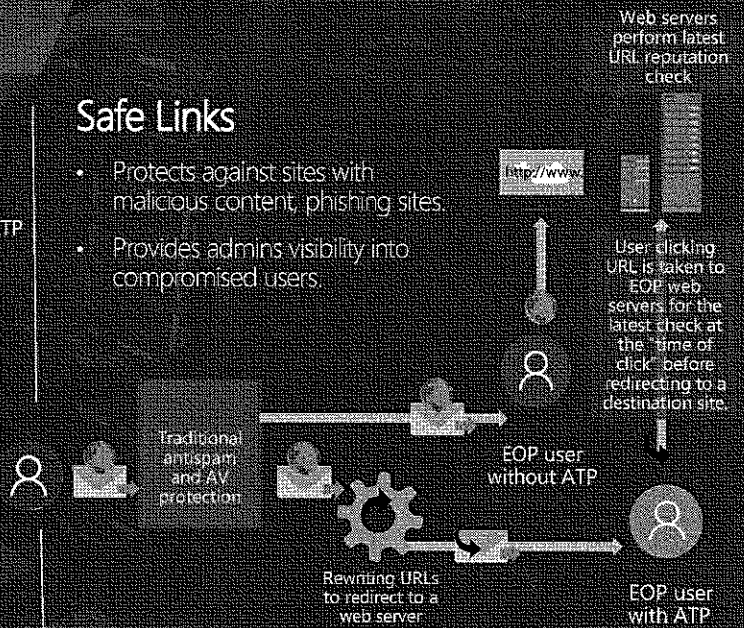


Safe Attachments

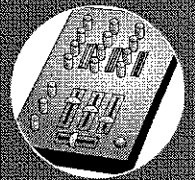
- Protects against zero-day exploits in email attachments by blocking messages.
- Provides admins visibility into compromised users.
- Uses sandboxing technology.

Safe Links

- Protects against sites with malicious content, phishing sites.
- Provides admins visibility into compromised users.



Customer Control in the Cloud



Guidance

- Secure Score
- Security control considerations

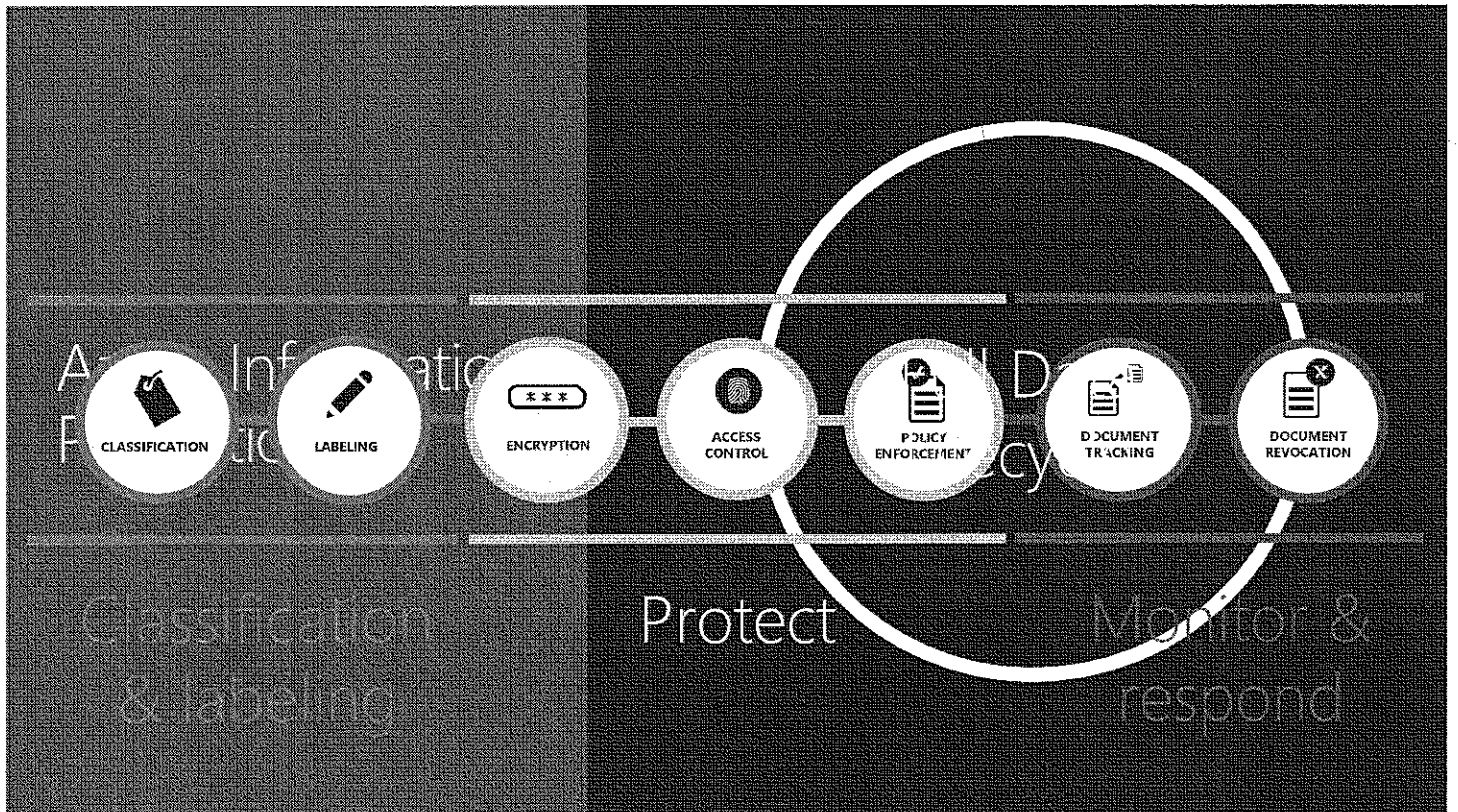
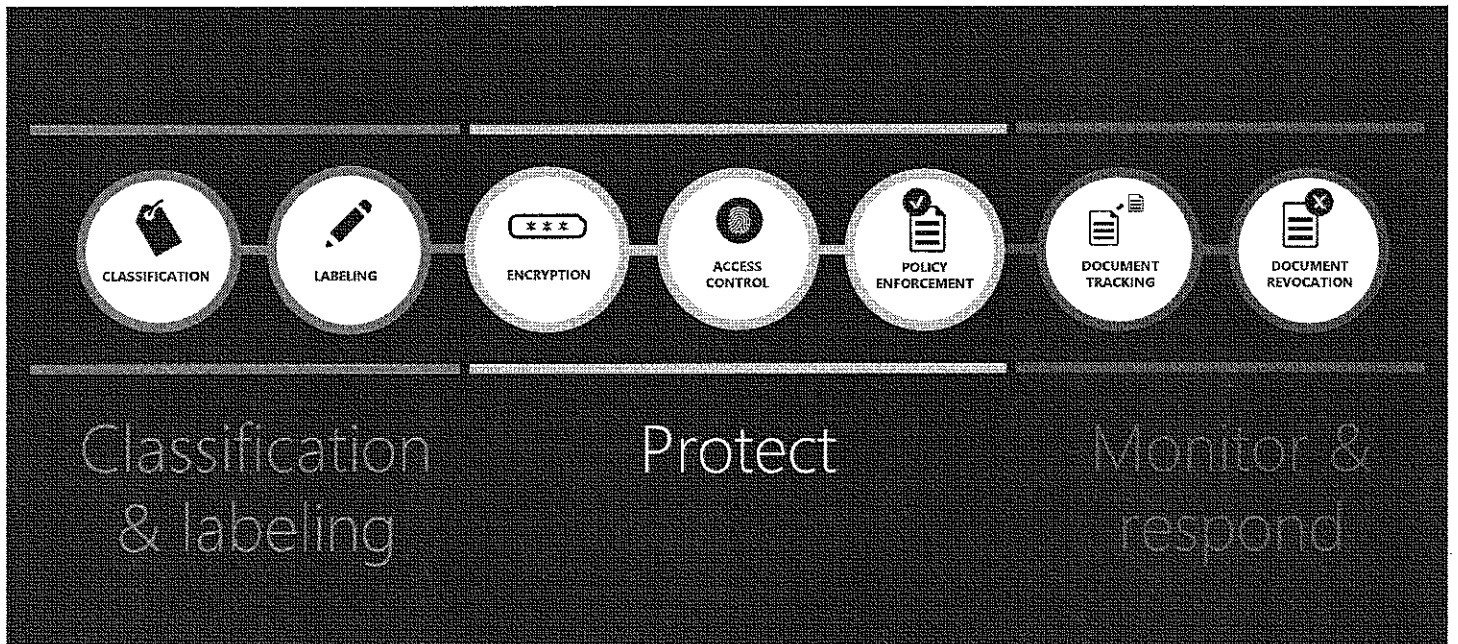
Prevention

- Data leakage protection
- Advanced threat protection

Control

- Information Protection
- Multi-factor Authentication

Azure Information Protection

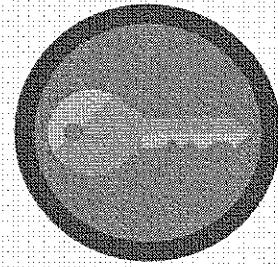


Modern authentication

Office clients now support OAuth with Azure AD

New features

- No more basic authentication for Outlook!
- Multi-factor authentication
- Support for third party STS providers
- Azure Active Directory Conditional Access



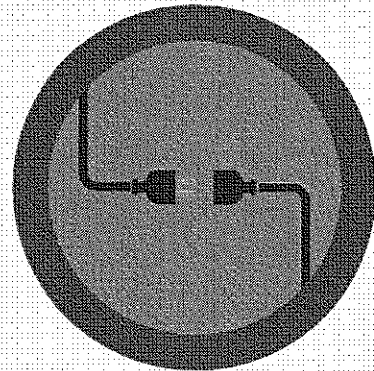
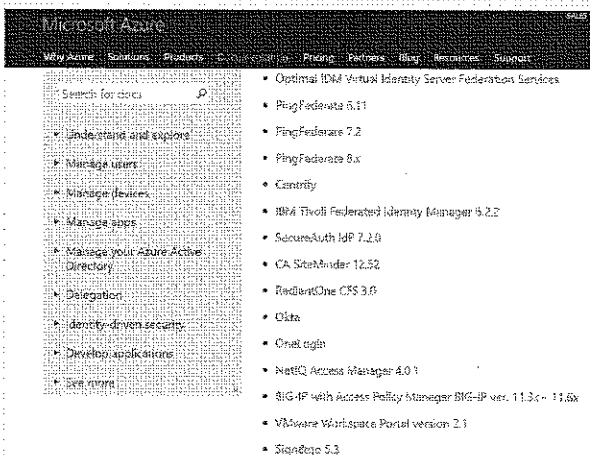
Cross-platform support

Support for 3rd party STS providers

Works with Office 365 program

Identity providers are qualified through testing

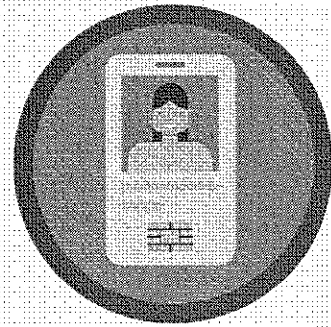
Microsoft support serves customers on Office 365 who use a provider that is qualified



Support for different form factors

If your federation provider supports other form factors for authentication, Office will also!

- Windows Hello
- Smart card
- Certificates
- Biometrics
- Key fobs
- Challenge & Response card
- Software tokens
- USB tokens
- Etc...

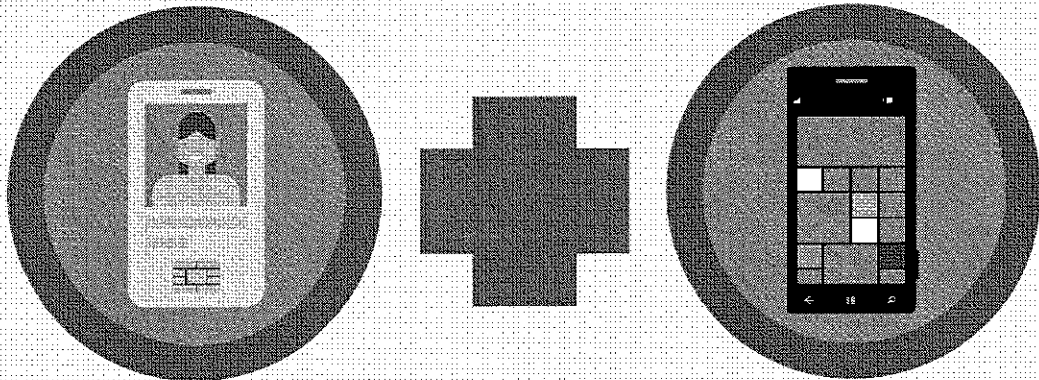


Multi-factor authentication

Requires the user to prove that they are who they say they are by

Providing something they **know** and...

Providing something they **have**



Enabling multi-factor authentication

From Office 365 Admin Portal

User experience

No change to sign-in frequency
User is prompted to setup next time they authenticate

The screenshot shows the 'multi-factor authentication' settings page in the Office 365 Admin Portal. It features a table of users with columns for 'DISPLAY NAME', 'USER NAME', and 'MULTI-FACTOR AUTH SERVICE'. The user 'Alex Darrow' is highlighted, and a 'quick start' button is visible next to his name. Below the table, there is a section for 'User's phone number' with a 'View details' link.

DISPLAY NAME	USER NAME	MULTI-FACTOR AUTH SERVICE
Alex Darrow	AlexD@M365179428.onmicrosoft.com	Enabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled
Alice Bellini	AliceB@M365179428.onmicrosoft.com	Disabled

The screenshot shows a security prompt for Alex Darrow. The text reads: 'For added security, we need to further verify your account'. Below this, there is a profile picture and the name 'Adriana'. The prompt states: 'Your admin has required that you set up this account for additional security verification.' There is a 'Set it up now' button and a 'Sign out and sign in with a different account' link. A 'More information' link is also present.

Comprehensive Risk Assurance for the Microsoft Cloud

Security
of the Cloud

Transparency
of the Cloud

Customer Control
in the Cloud

Build it well Explain it well Use it well



Microsoft

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Coffee break

Microsoft



Blockchain: The Distributed Trust Engine

Richard Knight
Business Development, Azure Advanced Workloads, Microsoft

Bob Hayward
Principal, Management Consulting, KPMG APAC






Andrew Keys
Head of Global Business Development, ConsenSys

Distributed Ledger is a Decentralized Trust Protocol

Distributed Ledger

- Confirm ownership of assets by any party to a transfer
- Confirm the value of the transfer is legitimate
- Validate transfers, agreed by all parties using a **consensus mechanism**
- Timestamp, encrypt and protect all records of every transfer
- Transparently share the results and history of transfers with appropriate parties
- Maintain privacy of counterparties to any transfer
- Prevent anyone trying to perform the same transfer more than once
- Prevent anyone later denying that they were a party to a transfer (either side)
- Ensure no one can tamper or modify the record of the transfer once validated
- Provide permanent availability of the transfer network across all borders
- Be architected in a similar fashion to the Internet, with no single point of failure

Distributed Ledger is a Disruptive Combination of 5 Concepts

CRYPTOGRAPHY	PEER TO PEER NETWORK	CONSENSUS MECHANISM	OPEN SOURCE CODE	DECENTRALIZED LEDGER
 <ul style="list-style-type: none"> • Private & Public Keys • Hash Algorithms • Merkle Tree 	 <ul style="list-style-type: none"> • Decentralized & distributed network architecture • No central governing body • Nodes linked over the Internet 	 <ul style="list-style-type: none"> • Nodes collaborate to validate information • Use various types of consensus models • Initial Bitcoin Blockchain uses 'Proof of Work' 	 <ul style="list-style-type: none"> • Source code open to review by anybody • Catalyst for wave of innovation • Many different implementations today 	 <ul style="list-style-type: none"> • Public record of all transactions • Every stakeholder has the same ledger • Avoids 'cheating' and automatically reconciles all data
Value transfer via the internet...	...without a trusted third party	...validated by nodes within a network...	...based on open source protocol...	...completely transparently

A Decentralized Trust Protocol can have a Huge Impact:

- There *might* be far less need for...
- Escrow
 - Letters of Credit
 - Underwriters
 - Notaries
 - Clearance systems
 - Settlement systems
 - Custodians
 - Reconciliations
 - Confirmations
 - Intermediaries
 - Agents
 - Brokers
 - Exchanges
 - Arbitrators

- There *might* be less work for...
- Regulators ?
 - Accountants ?
 - Auditors ?
 - Lawyers ?
 - Banks?

Emerging Distributed Ledger Use-Cases

Financial

Trading
Deal origination
POs for new securities
Equities
Fixed income
Derivatives trading
Total Return Swaps (TRS)
2nd generation derivatives
The race to a zero middle office
Collateral management
Settlements
Payments
Transferring of value
Know your client (KYC)
Anti money laundering (AML)
Client and product reference data.
Crowd Funding
Peer-to-peer lending
Compliance reporting
Trade reporting & risk visualizations
Betting & prediction markets
Insurance
Claim filings
MBS/Property payments
Claims processing & admin
Fraud prediction
Telematics & ratings
Smart contracts for policies

Media

Digital rights management
Game monetization
Art authentication
Purchase & usage monitoring
Ticket purchases
Fan tracking
Ad click fraud reduction
Resell of authentic assets
Real time auction & ad placements
Computer Science
Micronization of work (pay for algorithms, tweets, ad clicks, etc.)
Expense of marketplace
Disbursement of work
Direct to developer payments
API platform plays
Notarization & certification
P2P storage & compute sharing
DNS

Medical

Records sharing Prescription sharing Compliance
Personalized medicine DNA sequencing

Asset Titles

Diamonds
Designer brands
Car leasing & Sales
Home Mortgages & payments
Land title ownership
Digital asset records

Government

Voting
Vehicle registration
WIC, Vet, SS, benefits, distribution
Licensing & identification
Copyrights

Identity Personal

Objects
Families of objects
Digital assets tracking
Multifactor authentication
Refugee tracking
Education & badging
Purchase & review tracking
Employee reviews

IoT

Device to Device payments
Device directories
Operations (e.g. water flow) Grid monitoring
Smart home & office management
Cross-company maintenance markets

Payments

Micropayments (apps, 402)
B2B international remittance
Tax filing & collection
Rethinking wallets & banks

Consumer

Digital rewards
Uber, AirBNB, ApplePay
P2P selling, craigslist
Cross company, brand, loyalty tracking

Supply Chain

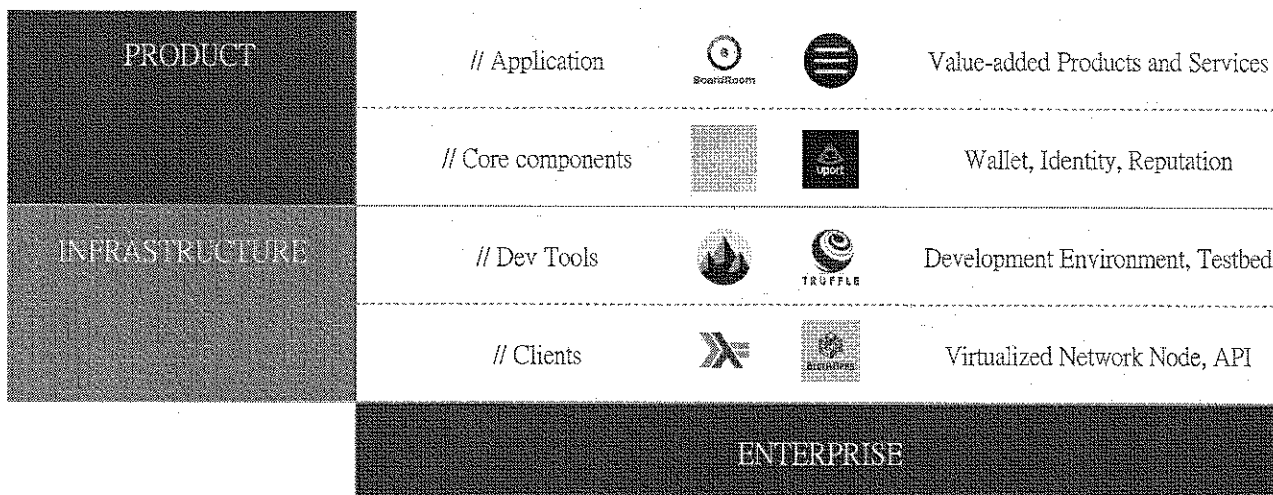
Trade finance (L/Cs)
Provenance/Chain-of-custody integrity
Dynamic ag commodities pricing
Real time auction for supply delivery
Pharmaceutical tracking & purity Agricultural food authentication
Shipping & logistics management



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ConsenSys

ConsenSys is a team of close to 150 subject matter experts in blockchain technology spread across 15 countries that offers a comprehensive suite of blockchain related products and services through a three-pillared approach.





R3 and many of their consortium members are employing Ethereum-based blockchain technology developed by ConsenSys.



John Hancock retained ConsenSys to build an AML/KYC onboarding system as well as blockchain based loyalty rewards tool.



"Using Ethereum it was a very easy thing to do, it was 200 lines of code in Solidity to write a model where it can really load up an account with fiat currency and send money between accounts," Gruban explained.
[CoinDesk](#)

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Blockchain Use Cases



Blockchain technology is the dawn of *veridical* computing

- Triple Entry Accounting
- Tokenization of Assets - Commodities, Fiat, Renewable Energy Credits, Securities - Stocks, Derivatives, Loyalty Programs - every retailer will have a token.
- Settlement latency reduction - The trade IS the settlement. Not only in capital markets, but cross border payments and core retail banking.
- Escrow / Custodian functionality - The smart contract IS the escrow / custodian.
- Provenance tracking - Following the chain of custody and authenticity of an asset.
- AML / KYC - Digital Identity
- Reference Data
- Syndicated Loans
- Bond Issuance

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- Regulators will write software specs and develop tests that compliant companies/software must pass.
- Real-time compliance, accounting and monitoring.
- Real-time comprehensive auditing, not sampled or quarterly lookback.
- Real-time risk metrics and sensitivity analyses.
- Real-time overview dashboard for companies.
- Real-time overview dashboard for regulators.
- Compliance is baked into the logic or the smart contracts that underlie all processes.
- Organizations using certified software will not be able to break or bend any rules. For 99.999% of transactions, there will be no room for interpretation of words. Code is law.
- When exceptional conditions arise outside of the anticipated scenarios, the situation can be handled using conventional regulatory and legal mechanisms.

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Regulations for Blockchain ?

Future of regulators ?

Ask your question !!

Blockchain & Public Cloud ?

Partnership with Microsoft ?

Blockchain for regulators ?

Regulators make the first move ?



Dialogue:
Ongoing Risk Assurance and Compliance



Closing Remarks

Asia Financial Regulators Roundtable

Microsoft Cybersecurity Centre
Singapore, November 16, 2016

 Microsoft



