Cloud Computing
Opportunities & Challenges

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- Donny is the managing director of IntrapriseTechKnowlogies LLC, an advisory-focused CPA firm specializing in organizational development and business process outsourcing for small businesses, middle market organizations, and nonprofits. Donny is a recognized thought leader and educator in the Accounting Technology, IT Risk Management, and Performance Management fields; his dedication to helping accountants and organizations leverage strategic technologies while proactively managing their business and technical risk is paramount.

- Donny also serves as an outsourced IT & Innovation “Partner” and advisor for local & regional firms and internal audit departments who lack in-house IT leadership and IT audit expertise. He helps with IT risk assessments and IT advisory services, development of the firm’s innovation strategy, streamlining of internal firm operations, and increasing staff proficiency with IT tools supporting client engagements and service delivery.

- Donny is a past chairman of the AICPA’s Information Management and Technology Assurance Executive Committee, and former member of its Governing Council, Assurance Services Executive Committee, and numerous other AICPA committees and task forces. Donny was recognized as one of the Top Thought Leaders in Public Accounting by CPA Practice Advisor from 2012 to 2017, Top 100 Most Influential People in Accounting (2013 & 2014) by Accounting Today, received the 2009–2010 President’s Award from the Hawaii Society of CPAs, was named to CPA Technology Advisor’s 40 Under 40 list in 2007 & 2009 & 2014, and was also a Hawaii Top High Tech Leader in 2004.
Cloud Computing: Opportunities & Challenges

- The time for Change is NOW
  - Is your firm ready for exponential change?
- Developing An Innovation Strategy for Firm Sustainability
  - Understanding the Challenge of Cybersecurity
  - Confidentiality vs Privacy vs Information Security
- Cyber–enabled Transformation is a Journey

Video source: Change², Digital transformation: are you ready for exponential change? Futurist Gerd Leonhard. TFAStudios (https://youtu.be/vydfF6iN7hc)
Is your firm ready for exponential change?

Left column adapted from Leonhart’s Change², 2016; Right column: © 2017 IntrapriseTechKnowlogies LLC

- Good enough is dead.
- Change is being fueled by
  - Digitization
  - Automation & Augmentation
  - Mobilization
  - Disintermediation
- Are you driving change?
  - Or being driven by it?

- Is your firm “good enough”?
- Has your firm…
  - Gone paperless?
  - Leveraged audit data analytics?
  - Automated confirmations?
  - Leveraged tax automation?
  - Leveraged tax outsourcing?
  - Leveraged mobile/cloud?
  - Ensured that it will be relevant in the near future?

Is your firm ready for exponential change?

Left column adapted from Leonhart’s Change², 2016; Right column: © 2017 IntrapriseTechKnowlogies LLC

- The future is
  - Holistic business models
  - Opportunity to be liquid
  - Learn just in time
    ● Not just in case
  - Not single improvements, but complete transformations
  - Not individual systems, but new ecosystems

- Has your firm…
  - Moved beyond commodity audit, tax, and bookkeeping services?
  - Ensured that it has the agility to adapt as innovations in accounting technology emerge?
  - Adopted the future of learning, and moved from CPE to competency development?
  - Developed a short- and long-term innovation strategy?
  - Taken a holistic look at itself?
Is your firm ready for exponential change?

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- Big Data
  - Comes from the Internet of Things (IoT) [and easier data collection and access]
  - Drives artificial intelligence (AI) and deep learning [by machines]

- All this enables Robotics
  - [which enables increased automation and augmentation]

- Big Data, IoT, and AI will transform accounting and finance:
  - Replace estimates with actuals
    - e.g. depreciation, cost allocations)
  - Use non-financial metrics for
    - Enterprise risk indicators
    - Real-time forecasting
  - Correlate non-financial and financial data for audits
  - Continuous monitoring and continuous auditing

- What can’t be digitized will become extremely valuable
  - Focus on things that can’t be automated
  - Machines are good at simulating, but not at being

- Human-only traits:
  - Creativity & Imagination
  - Emotion
  - Intuition
  - Ethics

- Have you (re)designed your service offerings to leverage the CPA Core Competencies?
  - Communications skills
  - Leadership skills
  - Critical thinking and problem-solving skills
  - Anticipating and meeting needs
  - Synthesizing intelligence to insight
  - Integration and collaboration
Is your firm ready for exponential change?

- Technology represents the HOW of change
- Humans represent the WHY
  - Go beyond technology and data to reach human insights and wisdom
- We engage, relate and buy things because of
  - The experience they provide
  - Their transformational power

- Have you considered the WHY of your firm?
  - See Simon Sinek’s TED Talk: “Start with Why”
- Have you figured out WHY clients should work...or continue to work with you?
  - How is their experience with you different from other firms?
  - How are you transforming their organizations and impacting their success?

Developing An Innovation Strategy for Firm Sustainability

- Transforming a firm’s operations to leverage cloud innovations requires a strategic and holistic approach.
- This transformation often requires that firms revisit the way they’ve always done things and careful attention to standards and compliance requirements.
Creating a Sustainable Firm

- A shift is required in the Sustainable Value Chain of firm competencies

| Mission, business strategy, and constituent needs | Brand, values and organization positioning | Develop service offerings and value/benefit proposition | Obtain customers and source resources | Deliver services and measure impact | Constituent satisfaction and retention |

Operations driven

Mission/strategy driven impact

- Historically firms could be very operationally driven. As the need for differentiation and impact increases, firm must be more strategic to be sustainable and achieve their mission

Innovation Strategy Drivers for Accounting Firms

Business Drivers
- Economic Uncertainty
- Increased Oversight
- Client Price Pressure
- Partner & Staff Needs

Technology Drivers
- Cloud Computing
- Mobile & Apps
- Big Data
- AI & Robotics

Innovation Strategy
- Workflow & Process Efficiencies
- Staff Enablement & Work-Life Integration
- Evolution of Service Offerings
- Local to Global Opportunities

Practice Enhancement Strategies
Developing Your Innovation Strategy

Impact of the Innovation Strategy
to the Firm’s Major Service Areas and Practice Management

Key Outcomes:
- Automated & efficient processes → Improved execution/profitability
- Improved work processes → Increased employee satisfaction
- Better workflow and project management → Reduced risk
- Higher quality of service → Increased client satisfaction / impact

Case Study: Houston CPA Society – Challenges

- Traditional on-premise infrastructure
  - Some cloud (Office 365) but usage not optimized
  - Core applications (iMIS and MS Dynamics GP) several versions behind

- Self-hosted web site
  - Greater visibility and potential hacker exposure
  - Greater PCI DSS (credit card) compliance requirements and risk

- Primarily on-premise services
  - Difficult to serve members in remote areas of the region
  - Harder to engage committee members who only call into meetings

- Policies, procedures, and staff training not up-to-date
  - Outdated security policy and no information security program
  - Society staff has not been provided training on technology available
Case Study: Houston CPA Society – Opportunities

- Transition to a cloud infrastructure
  - Upgrade Office 365 plan to get access to more robust security features for e-mail, laptops, and mobile devices
  - Move core applications (AMS and GL) to either hosted or cloud apps
- Move to cloud-based web site and member portal
  - Reduce potential hacker exposure and outsource security
  - Reduce PCI DSS (credit card) compliance risk
- Revisit service delivery to leverage cloud tools
  - Redesign and revitalize web site and member portal to broaden information distribution and increase member engagement
  - Leverage Office 365 to serve members in remote areas of the region
- Update information security and staff training programs

Understanding the Challenge of Cybersecurity

- Whether on-premise or in the cloud, cybersecurity presents challenges that have wide reaching impacts throughout organizations.
- These challenges must be addressed by management, operations, and IT to effective in mitigating cybersecurity risks
Why Cybersecurity is Challenging

Why is ensuring cybersecurity a challenge?
- Unlike the certification of financial statements there is no universally accepted “principle” or “standard” for information security
- The concept of “compliance to best practice”
- Changes in technologies and IT platforms is at times too rapid for best practices to fully develop or be recognized as such
- Rapidly evolving threat landscape and increasing sophistication of attacks/attackers
- Lack of education and awareness of IT staff and end users

AICPA Cybersecurity Reporting Framework (April 2017)
- Provides principles & criteria for evaluating extent and effectiveness of an entity’s cybersecurity risk management efforts

When people say they’re worried about cybersecurity, they usually mean they’re worried about the **confidentiality** and **privacy** of their data.

Information security has two additional aspects: availability and integrity, that must be addressed in addition to confidentiality and privacy.

### Confidential vs Private Data

- **Confidential data** is generally considered to be sensitive (not for public consumption) but not necessarily private.

- **With confidential data,** the objectives usually are to:
  - Limit access to those who are authorized to view the data
  - Protect the data from accidental or purposeful unauthorized access by internal or external parties

- **Private data:**
  - Is personally identifiable (i.e., can be linked to an individual person)
  - Usually has regulatory or compliance requirements that force organizations to ensure that the data is not disclosed except in certain allowed circumstances

- **Examples of compliance requirements requiring privacy:**
  - State identity theft laws
  - Payment Card Industry Data Security Standard (PCI DSS) for credit card data
  - HIPAA for health care–related data
Privacy Compliance Requirements

• The handling of private data is often governed by the state or country of residence of the affected individual(s), not where your organization is headquartered or has offices
  - Fines, notice, and remediation requirements are also normally established by the location of affected individual’s residence(s)

• You may also be subject to additional entity-level requirements based on the state(s) in which you operate
  - There may also be entity-specific fines and remediation requirements driven by the state(s) in which you operate

• Privacy compliance can quickly become complex, especially if customers are resident in multiple jurisdictions

The Information Security (InfoSec) Triangle

• Information Security
  - Seeks to ensure that an organization’s data and access to its information systems is well managed
  - Helps prevent accidental or purposeful breaches from occurring, both from within and from outside a organization
  - Ensures that if breaches do occur, they are detected and addressed quickly

• Confidentiality is only one aspect of the Infosec triangle:
Information Security, Confidentiality, and Privacy are Complementary

- Information security
  - Also addresses availability and (data) integrity

- Confidentiality
  - May have some areas not covered by information security (e.g., paper files)

- Privacy
  - Has many other areas that are not covered by information security or confidentiality (see next slide)

Generally Accepted Privacy Principles (GAPP)

1. Management
2. Notice
3. Choice and Consent
4. Collection
5. Use and Retention
6. Access
7. Disclosure to Third Parties
8. Security for Privacy
9. Quality
10. Monitoring and Enforcement

More info is available at:

http://aicpa.org/privacy

Color key:
- Blue = Information Security
- Green = Confidentiality
Generally Accepted Privacy Principles

1. **Management**: The entity defines, documents, and communicates, and assigns accountability for its privacy policies and procedures.

2. **Notice**: The entity provides notice about its privacy policies and procedures and identifies the purposes for which personal information is collected, used, retained, and disclosed.

3. **Choice and Consent**: The entity describes the choices available to the individual and obtains implicit or explicit consent with respect to the collection, use, and disclosure of personal information.

4. **Collection**: The entity collects personal information only for the purposes identified in the notice.

5. **Use and Retention**: The entity limits the use of personal information to the purposes identified in the notice and for which the individual has provided implicit or explicit consent. The entity retains personal information for only as long as necessary to fulfill the state purposes.

6. **Access**: The entity provides individuals with access to their personal information for review and update.

7. **Disclosure**: The entity discloses personal information to third parties only for the purposes identified in the notice and with the implicit or explicit consent of the individual.

8. **Security**: The entity protects personal information against unauthorized access (both physical and logical).

9. **Quality**: The entity maintains accurate, complete, and relevant personal information for the purposes identified in the notice.

10. **Monitoring and Enforcement**: The entity monitors compliance with its privacy policies and procedures and has procedures to address privacy-related complaints and disputes.
Cloud-enabled Transformation is the start of your journey…

- With peace of mind that you have a secure and resilient foundation, you can focus more on the future.
- Let us help you look at how you can:
  - Become more innovative and get the most value from your IT.
  - Leverage IT to transform your business practices, improve performance, and ensure your future success.

Cyber-enabled Transformation is a journey…

- Start with WHY: How will you transcend the technology, to transform your organization and create meaningful experiences for your customers/clients?
- Manage cybersecurity risk
- Innovate and drive IT Value

Compliance & Operations
- Information Security Program
- Vulnerability Testing

IT Governance & Risk Management
- IT Strategy Alignment
- IT General Controls Effectiveness
- IT Performance Improvement
- Robust Vendor Management Program

IT Value Management
- Enterprise Budgeting & Forecasting
- Project Management Office (PMO)
- Run–Optimize–Innovate (R–O–I) Management

Innovation & Transformation
- Enterprise Performance Management
- Enterprise Risk Management
- Business Solutions Needs Analysis & Vendor Selection
- Organizational Development

IT Department Management Leadership & Competitive Advantage
Thank you for your attention and participation!

Any Questions?

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