CPA
Practice**Advisor**

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I my columns last year, I explored the details of various emerging technologies. For this column, I'd like to re-visit and update changes in emerging technologies for the profession.

The frenzy continues around several emerging technologies, and some of the hype is starting to be true. Startups and traditional providers to the profession are putting more AI in their products. Key emerging technologies include: Robotic Process Automation (RPA, which some people are incorrectly calling bots...both are important), Machine Learning (ML), Artificial Intelligence (AI), voice recognition, virtual reality (VR), 3D printing, as well as data analytics are included in emerging technologies. Please refer to my prior columns for more on these trends (www.cpapracticeadvisor.com/contributors/randy-johnston).

What is new now, and what should we expect in the coming year or so? As the

Vendors are working hard to produce tools worthy of use in your practice. Much admirable work is being done by start-ups. MindBridge AI, Botkeeper, Vic.AI and Receipt Bank 1tap receipts are all examples of products that apply AI/ML algorithms to tasks. Your evaluation of emerging technologies should be straightforward:

1) Does the product solve a problem in your firm?

2) Is the vendor's pricing reasonable enough that there is an ROI when the product is used? In other words, is the price paid for the product better than the alternatives?

3) Then the vetting becomes more difficult

   a. Is the product easy to use and understand?

   b. How many algorithms has the vendor developed that are proprietary vs. how many algorithms are standard? A reasonable answer is a combination of approximately twelve to fourteen public domain and proprietary algorithms with six-seven in each category of public domain and proprietary. These numbers should make you more comfortable that the vendor has developed some intellectual property in addition to leveraging algorithms in the public domain.

   c. Training algorithms for AI and ML is a big issue.

      i. How large is the training data set? Better results today come from algorithms with 1 million to 10 million records. Over time the number of records needed may drop. We've seen some evidence of adequate machine learning accomplished in 100,000 records.

      ii. Is the application trained with your firm's data? If so, how much data is required to have reasonable accuracy?

d. Does the application perform better with any proprietary hardware? For example,

    i. For example, RPA tools typically require configuration and on-going maintenance

    ii. ML tools tend to be more self-learning, but require a larger amount of data for accuracy

    iii. Artificial Intelligence tools may be self-learning or may need sensitivity settings applied

i. What integrations are available now for this tool?

    i. Audit software

    ii. Tax software

    iii. CAS software – QuickBooks Online, Xero, Sage Intacct, Gravity

    iv. DMS systems

    v. Practice Management

    vi. Dashboard/reporting integration

4) If the product survives the selection process to this point, then contracting can begin. At this stage, you should pay attention to several factors.

a. How much training is provided, how much is needed and what does training cost?

b. Check on the technology charges.

    i. Are the charges for leasing the tool only (flat rate)?

ii. Per item?

Are there any tools that are ready now, as we head into the new year? Yes, a few tools are performing as described. Consider the following:

- Receipt Bank 1tap receipts
- Checkpoint Edge
- Crowe K1 Analyzer
- Validis plus Valid8
- CCH Axcess Client Collaboration
- QuickBooks classification of transactions

If you are a vendor and think your tool should be on this list, I certainly want to hear from you!

Promoted heavily and getting better:

- MindBridge AI
- Botkeeper
- Vic.AI

Likewise, help me (and the market) understand that your tools have improved enough that you are ready to go to market as working without any reservations or caveats.

Are there downsides and upsides to jumping into emerging technologies too soon?

Absolutely! Many of the technologies simply do not work. However, when the tools perform as described by the vendor, they let your team do more with less effort. Further, there are activities being done by emerging technology automation that would be unaffordable or impossible with any other approach. Being early to market

provides a productivity advantage that will keep your competitors guessing at what

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