

DIGITAL COMPETENCY MATURITY MODEL

(DCMM)^{TM*}

For Professional Accounting Firms

Version 1.0



Digital Accounting and Assurance Board
The Institute of Chartered Accountants of India

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Digital Accounting and Assurance Board
The Institute of Chartered Accountants of India

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“Digital Competency Maturity Model (DCMM) for Professional Accounting Firms – Version 1.0” has to be used ONLY for self evaluation by accounting firms of their digital competency maturity level and taking steps to move up the maturity model.

The results of the self evaluation conducted should NOT be published/ displayed in any form/ manner, which may be deemed to be violation of Code of Ethics of the Institute of Chartered Accountants of India”.

FOREWORD



THE ACCOUNTANCY PROFESSION globally is largely Small and Medium Practitioner (SMP) based, serving the whole Small and Medium Enterprises (SME) universe which constitutes a significant part of any economy and in many cases also as niche firms serving large entities. The same trend is true in the Indian context also. Challenges of financial resources apart these firms are to be supported proactively with insights on the emerging trends in the emerging digital society and the consequent impact on the accounting function. It is also important to take note of the huge effort of Government on digitisation and the already visible changes in tax law compliance including the new transformational legislation on Goods and Services Tax where every aspect of compliance and regulation is digital and in other areas of financial services transactions, etc.

At The Institute of Chartered Accountants of India (ICAI), the Council constituted the Digital Accounting and Assurance Board (DAAB) as an enabling Board to proactively assess the impact of digitisation on accounting and audit.

DAAB was constituted to begin withdrawing experience of co-opted members and special invitees having exposure in the area of digitisation, from peer regulatory organizations, academician and accounting firms.

The instant toolkit “Digital Competency Maturity Model (DCMM) for Professional Accounting Firms – Version 1” is an endeavour to provide a recommended set of requirements which the firms can evaluate on a self assessment basis and build a strategy for up skilling, to leverage the opportunities which will unfold in the digital era.

We compliment the members and staff of DAAB for taking up this initiative for the benefit of the profession. We are sure that the Instant “Digital Competency Maturity Model (DCMM) for Professional Accounting Firms – Version 1.0” will be used by our members/firms to assess the current digital competence of their firms and building their firms competencies for their own growth and the profession at large.

(CA. Nilesh S Vikamsey)
President, ICAI

(CA. Naveen N D Gupta)
Vice-President, ICAI

New Delhi
December, 2017

PREFACE



The “Digital Competency Maturity Model (DCMM) for Professional Accounting Firms – Version 1.0” has been developed for self evaluation by accounting firms and is intended only to be a self assessment tool for rating their current digital capabilities. **This self evaluation process would be wholesome when the model questions are filled up after debate/discussion among all the partners of the firm to know the “as is where is position” of digital competency with the firm.**

The objective is that the accounting firms, irrespective of the size, assess the current level of Digital Competency and identify steps to move up the model and calibrate their functioning to the emerging context. **We recommended that each firm should develop a strategy as part of its Annual Operating Plan to move up the DCMM.**

We are encouraged to hear that this could probably be the first of its kind initiative in the accounting world and we thank CA. Nilesh S Vikamsey, President, CA. Naveen N D Gupta, Vice-President and our Council Colleagues for their thought leadership, continuous support and encouragement to the initiatives of the Board.

Our sincere thanks and heartfelt gratitude to CA. Rajaji Chandrasekhar, Chennai for converting the Board vision into an Executable model with long hours of extensive research, to prepare the Digital Competency Maturity Model. Our thanks are also due to CA Hemant Joshi, Pune and CA. Vijayender Rana, New Delhi for their inputs in making the model more robust at the first version itself.

We recommend the members/ firms to apply this Maturity Model and provide us their feedback/ responses (at insightDCMMV2.0@icai.in). This would assist us in developing a more robust and comprehensive Version 2 of the Maturity Model in the near future. This version of DCMM is simple and has set moderate competencies, with intent to encourage firms to embrace the reality of digital era. The next version is likely to have more qualitative and quantitative criteria and may define more levels of maturity with a single weighted raking across all the three sections of competency identified.

Digital Accounting and Assurance Board

New Delhi

December, 2017.

DIGITAL ACCOUNTING AND ASSURANCE BOARD OF ICAI

TO UNRAVEL the impact of Digitization on Accounting and Assurance, the Council of ICAI has constituted the Digital Accounting and Assurance Board, as a non-standing Board of the ICAI, for fostering a cohesive global strategy on aspects related to digital accounting and assurance, through sharing of knowledge and practices amongst the members. DAAB is endeavoured to identify, deliberate and highlight on issues in accounting (including valuation) and assurance (including internal audit) issues in the digital world. Digital Accounting and Assurance Board is focusing on issues in accounting and assurance arising from the high pace of digitization, including use of artificial intelligence in audit, big data analytics in audit, relevance of sampling, valuation of data as an asset, impairment, testing of digital assets, insurance of data-valuation and premium fixation, etc.

The Board is taking up initiatives to develop knowledge base through position papers and articles on issues related to impact of technology on accounting and assurance. DAAB Knowledge Page https://www.icaai.org/new_post.html?post_id=13422&c_id=432 may be referred for position papers issued and for links to relevant article on digital accounting and assurance. Technology Summits are being conducted with the theme of Empowering Chartered Accountants in digital era. DAAB has also released knowledge management videos available on ICAI Mobile App <https://www.icaai.org/mobile/>. DAAB has also conducted online survey on impact of emerging technologies on the accountancy profession and around one thousand responses have been received.

TERMS OF REFERENCE

(Board for deliberating and initiating solutions for Accounting (including valuation) and Assurance (including internal audit) issues in the Digital World)

Arising out of digital era and its consequences -

- (a) to identify, deliberate and highlight issues in Accounting (including valuation) and Assurance (including internal audit) in the Digital World, and security aspect of data and technology;
 - (b) to act as a facilitator by engaging through relevant committees of ICAI; and wherever necessary with standard setters, Government, Regulators, industry and other accounting bodies in the world; and suggest to the relevant Committee(s) in Institute, the required changes in Accounting Standards, Assurance Standards and Valuation Standards;
 - (c) to develop knowledge base through position papers, create on line platform, including an annual conference/ round table preferably, on areas identified with a view to raise awareness in all stakeholders, the issues and opportunities arising from these trends; and
 - (d) to enable setting up a Global Digital Accounting and Assurance Board, as India initiative so that ICAI gets recognition as the global thought leader in Accounting and Assurance in digital world.
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Composition of Digital Accounting and Assurance Board 2017-18



Council Members

- CA. Anil Satyanarayan Bhandari, Member
- CA. Atul Kumar Gupta, Member
- CA. Debashis Mitra, Member
- CA. Kemisha Soni, Member
- CA. Manu Agarwal, Member
- CA. Nilesh S. Vikamsey, President, ICAI (ex officio)
- CA. Naveen N.D. Gupta, Vice President, ICAI, (ex officio)
- CA. Prakash Sharma, Member
- CA. Sanjay Vasudeva, Vice-Chairman
- CA. Shiwaji Bhikaji Zaware, Member
- CA. Shyam Lal Agarwal, Member
- CA. M P Vijay Kumar, Chairman

Government Nominee

- Shri Vithayathil Kurian

Co-opted Members

- CA. Adesh Kumar Gupta
- CA. B K Patel

Special Invitees

- Shri G Raghuraj, nominee IDRBT
- CA. Hemant Joshi
- Prof. Naman Desai, nominee IIM- Ahmedabad
- Ms. Narmadha R, nominee C&AG
- CA. Subh Ghosh
- Shri T Chakravarti, nominee SEBI

INTRODUCTION



THE DIGITAL SOCIETY is bringing in a new framework of unwritten rules of the game wherein not only the way the businesses are being carried out is getting radically transformed, but its silhouette is equally evident in the related value chain and more importantly the financial reporting chain as also the assurance chain. Things like vulnerability assessment and risk mitigation thereto arising out of the analysis of financial information is radically changing since concept of data is now being replaced with big data, and the landscape of accounting and assurance function will accordingly get transformed to cover a large segment of population rather than getting confined to a sample base assessment.

One may think what does this dawn of information technology and a digitized society has to do with the profession of Chartered Accountancy. An orthodox view would be that it does not concern us, but a pragmatic and rational school of thought is that a digital society brings with it its own set of challenges and one needs to embrace the reverberations not as complexities. It is now largely seen that using the frontiers of technology is likely to positively impact and transform the landscape of the professional working of an accounting firm. If we start looking the role of accounting function with an enhanced esotericness through use of technology, it would open up new windows of professional work for accountancy firms.

Digital Competency in a generic sense of the term has two parts- **Digital**- referring to “involving or using computer technology” and **Competence**- “indicates sufficiency of knowledge and skills that enable someone to act successfully and efficiently”. **Digital Competency**, thus, is a measure of skill and competence on use of computer and related technology. Accounting and Audit Firms have had a fair bit of impact in terms of how they run their firm operations and also adapt and evolve to the ever changing technology architectures at the client side.

ICAI, through DAAB, has initiated a process of laying out a self- evaluation matrices for accounting firms to gauge their relative maturity level as regards digital competency, relating to audit and accounting related functions being rendered by firms and individuals.

The objective of this Evaluation Matrix is for Audit and Accounting firms to be able to self- evaluate their current level of maturity on digital competency, identify areas where competencies are good/ lacking, and then develop a road map for upgrading to a higher level of maturity.

Three Dimension Approach to Self Evaluate Digital Competency of Professional Accounting Firms

a. Level of Automation of the Firm’s internal processes

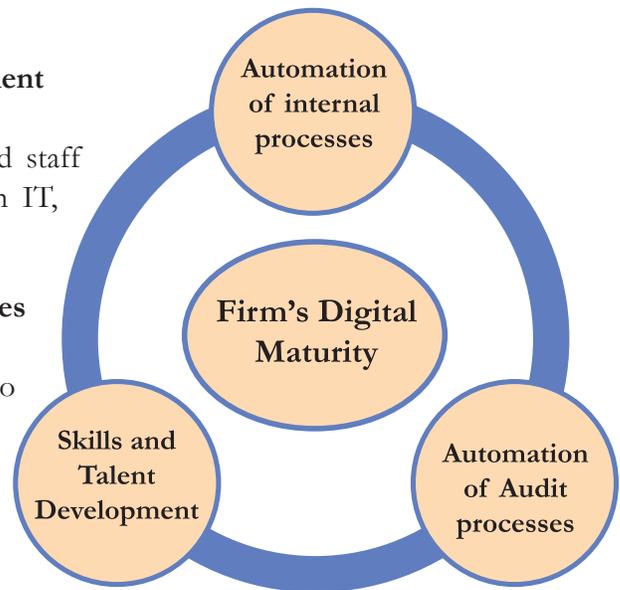
Intending to cover aspects like, level of usage of IT for it’s own internal processes like, billing, document management, employee attendance and work tracking, protecting its digital identity like, domain name, social media presence, etc.

b. Availability of Qualified Resource Pool and Talent Development relating to Digital Competencies

Intending to cover aspects like number of skilled staff with requisite qualifications, training initiatives on IT, On demand Online Training etc.

c. Level of Automation relating to Audit Processes and Nature of Audit Services being rendered

Level of automation at client's end, access to automated audit tools, training of employees on audit tools, ability to handle digital evidence, Information Technology Audits, etc.



FIRST STEPS

- To assign the task of understanding and presenting the document to all partners and senior staff, to a partner or senior staff who has relatively more interest in Audit; alternatively to one having interest in Information technology;
- To debate the model in a partners formal meet of at least 2 hours and make a conservative estimate of score for each of the elements;
- To encourage every partner and senior staff to update the check list in confidence and own assessment of score for each of the elements;
- To tabulate the score assigned by each partner and senior staff who participated in the process and finalise the rating with a consensus approach led by the Senior leadership.
- To develop a plan as part of the Annual Operating Plan, for moving up the DCMM. The next steps for this is listed at end of the document.





DIGITAL COMPETENCY MATURITY MODEL (DCMM) FOR PROFESSIONAL ACCOUNTING FIRMS – VERSION 1.0

SECTION A: LEVEL OF AUTOMATION OF THE FIRM'S INTERNAL PROCESSES

This section covers aspects relating to what extent an accounting and audit firm has leveraged Information Technology (IT) and related processes for its own operations – from automation of attendance systems to cloud based data back-up, etc. It also addresses issues of data security of client's sensitive data.

Competency Dimension	Score/Point Awarding Basis	Actual Points/Score Achieved
1.1 Managing Digital Identity The firm has registered i. Domain name, ii. Uses a corporate domain ID for mails, iii. Has a verified social media presence	For each Yes – Score 1 For each No – Score 0	Max. Possible Points= 3
1.2 Operational Process automation The firm uses automation for : i. Attendance system ii. Leave management system iii. Mobile device- laptops, PDAs, etc. tracking iv. Internal communication- chats/instant messaging systems v. Centralised file storage system/server	For each Yes – 1 Point For each No – 0 Point	Max. Possible Points= 7

Competency Dimension	Score/Point Awarding Basis	Actual Points/Score Achieved
<ul style="list-style-type: none"> vi. Internal work flow and documentation is managed on a digital work flow management system vii. Electronic database pertaining to client's and services being rendered is maintained and updated 		
1.3 High Availability <ul style="list-style-type: none"> i. Data back-up is automated process on the cloud/off-line at a different location and same is tested periodically 	For Yes – 1 Point For No – 0 Point	Max. Possible Points= 1
1.4 Mobile Devices Data Security Mobile devices and laptops: <ul style="list-style-type: none"> i. Are secured through drive encryption ii. Have end point security deployed iii. Can be remotely backed-up/ content wiped off in case of loss of device (MDM) 	For each Yes – 1 Point For each No – 0 Point	Max. Possible Points= 3
1.5 Data Security <ul style="list-style-type: none"> i. Critical communications are digitally secured (either through digital signatures or passwords/other mechanism) ii. Access to internet is restricted on need only basis and use of data cards is also routed through corporate firewalls iii. Firm has deployed end-point security on all desktops (including access control) 	For each Yes – 1 Point For each No – 0 Point	Max. Possible Points= 3
1.6 Electronic Payments Financial Transactions beyond a threshold are made through electronic means using Two Factor Authentication from designated devices only. <ul style="list-style-type: none"> i. Min of 15% and upto 40% of all payments are made through electronic means ii. 40% to 75% of all payments are made through electronic means iii. Above 75% of all payments are made through electronic means Note: % is in terms of transaction volume.	Below 15% - 0 Points 15%- 40% - 1 Point 40% to 75%- 2 Points Above 75%- 3 Points	Max. Possible Points= 3

Competency Dimension	Score/Point Awarding Basis	Actual Points/Score Achieved
1.7 Copyright and Licenses i. Software deployed are backed by appropriate licenses and inventory of licenses are maintained.	For each Yes – 1 Point For each No – 0 Point	Max. Possible Point = 1
1.8 Digital Media for Communication i. Internal employee portal is maintained with updated content relating to firm's audit programs, checklists, sample representation letters, etc and ii. E-newsletter is published to it's employees and knowledge updates are available on portal iii. Employee feedback and evaluation is done online through a portal iv. Mail server is managed in-house/third party service provider with scheduled back-ups/vaulting options enabled to retain mails for defined period of time	For each Yes – 1 Point For each No – 0 Point	Max. Possible Points= 4
1.9 Protecting Personal Data and Privacy i. Employee related personal information/ HR data in electronic form is secured from unauthorised access ii. Social media checks are carried out on key employees as part of background checks including prior or existing relationship with clients iii. Employees are sensitised on due care to be taken relating to sharing client specific information	For each Yes – 1 Point For each No – 0 Point	Max. Possible Points= 3
1.10 Online scans for adverse content i. Does the firm carry out, either through a third party or on it's own, scan of online content to track any adverse news about the firm/it's employees	For Yes – 1 Point For No – 0 Point	Max. Possible Point = 1
1.11 External Validation/Certification i. Is the firm subject to external validation/ certifications like ISO 27001 etc.,	For Yes – 2 Points For No – 0 Point	Max. Possible Points = 2
		Total Possible Points = 31

SECTION B: AVAILABILITY OF QUALIFIED RESOURCE POOL AND TALENT DEVELOPMENT RELATING TO DIGITAL COMPETENCIES



This section addresses issues relating to skills, qualification of staff (administrative and audit staff) in relation to Information and Communications Technology (ICT), and investment by the firm in providing appropriate training for skill set upgrades.

Competency Dimension	Score/Point Awarding Basis	Actual Points/ Score Achieved
<p>2.1 Skilled resource for managing internal IT infra Does the firm have trained/qualified</p> <ul style="list-style-type: none"> i. System Administrators or in case of cloud deployment- cloud administrators ii. Agreement with service providers for desktop support, hardware maintenance/AMCs 	<p>For Yes - 1 Point For No - 0 Point</p>	<p>Maximum possible points = 2</p>
<p>2.2 Training/skill of staff related to office automation How many of the firm's staff are formally trained/skilled in:</p> <ul style="list-style-type: none"> i. Word processing software skills ii. Spreadsheet software skills iii. Database/ data analytics skills iv. Presentation skills v. E-mail and internet skills vi. Use of automated work-flow systems <p>Note: Each staff will be counted only once- i.e., same staff possessing two skills cannot be counted twice.</p>	<ul style="list-style-type: none"> i. 0 to 30% of the staff – 0 Points ii. 30% to 60% of the staff- 1 Point iii. Above 60% of the staff- 2 Points 	<p>Maximum Possible Points = 2</p>
<p>2.3 Skills related to audit in a computerised environment/Information Systems Audit Do staff members possess one or more of the said qualifications</p> <ul style="list-style-type: none"> i. Diploma in Information Systems Audit (DISA) ii. Certified Information Systems Auditor (CISA) iii. Certified in Risk and Information Systems Control (CRISC) iv. Certified Fraud Examiner (CFE) v. ISO 27001 LA/Implementer vi. Any other relevant certifications <p>Note: For the above, articled clerks are to be excluded- only partners, qualified staff and paid assistants are to be factored.</p>	<ul style="list-style-type: none"> i. 0 to 30% of the staff – 0 Points ii. 30% to 60% of the staff- 1 Point iii. Above 60% of the staff- 2 Points 	<p>Maximum Possible Points 2</p>

Competency Dimension	Score/Point Awarding Basis	Actual Points/ Score Achieved
2.4 Digital Etiquette i. Does the firm provide its staff with training on drafting mail responses/any other form of digital communication factoring cultural and generational diversity of the client/recipients.	For Yes- 1 Point For No- 0 Point	Maximum possible points- 1
2.5 Protecting against digital threats Does the firm sensitizes it's employees on issues like: i. Cyberbullying ii. Phishing attacks/spear phishing attacks targeting key employees iii. Malware threat indicators	For Yes- 1 Point For No- 0 Point	Maximum Possible points- 1
2.6 Content delivery through digital platforms i. Does the firm have an online/on-demand learning portal which employees can access from anywhere ii. Are atleast 50% of the total CPEs sessions/ training sessions through webinars/podcasts are attended on an average iii. Has the firm subscribed to any digital learning platforms from professional bodies for skill development of its staff	For Yes- 1 Point For No- 0 Point	Maximum possible points = 3
2.7 Access to knowledge base, content search online and evaluating content prior to use i. Access to business knowledge database, market drivers and technology involved in the industry in which company operates ii. Are staff trained formally on content searches related to work and how to identify authenticity of the source (say of case laws, audit check lists, etc.,) iii. Are staff trained on what online content can be legally re-used without IPR infringements	For Yes- 1 Point For No- 0 Point	Maximum possible points = 3
2.8 Creative use of digital technologies i. Are staff encouraged to put IT to creative use, say building an app for statutory due date alerts, alerts relating to professional updates, automating a routine function	If atleast 1 such automation achieved- 1 Point For no such automation- 0 Points	Maximum Possible Points- 1
		Total Possible Points = 15



SECTION C

LEVEL OF AUTOMATION RELATING TO AUDIT PROCESSES AND NATURE OF AUDIT SERVICES BEING RENDERED

This section focuses on actual audit and related work being carried out by the firm, which uses automated tools to facilitate the audit process or scenarios, especially where complete audit focuses on the IT controls in the client environment.

Competency Dimension	Score/Point Awarding Basis	Actual Points/ Score Achieved
3.1 Use of Automated Audit Planning Software <ol style="list-style-type: none"> i. Does the firm uses any application software/tool for audit planning- including scheduling, resource deployment, tracking hrs/days spent vs. budgeted time, etc. ii. Is the software cloud based and secure access is provided to staff members which has facility to collaborate, digital sign off, etc. ,? 	If Yes- 1 Point If No- 0 Point	Maximum Possible Points = 2
3.2 Use of External Automated Audit Tools for Data Extraction, Sampling, Analytics, etc. <ol style="list-style-type: none"> i. Does the firm have/uses automated audit tools for data extraction, sampling (Benford's law, RSF, etc.) , analytics etc. (like ACL, IDEA etc.,) ii. Are the staff adequately trained on usage of the tools and interpretation of results thereof? iii. Are the audit staff trained on identifying, obtaining and analysing and retaining 	For Points i to iii For Each Yes- 1 Point For each No – 0 Point For Points iv i. If for > 5 out of top 10 clients manual processes are used- Negative Marking of 1	Maximum Possible Points = 3

Competency Dimension	Score/Point Awarding Basis	Actual Points/ Score Achieved
<p>relevant digital evidence pertaining to their audit work?</p> <p>iv. Are there scenarios where client's core processes are fully automated while the firm continues to use manual audit techniques rather than system driven reviews?</p>	ii. If for < 5 but greater than Zero- No negative marking	
<p>3.3 Use of in-built audit tools/capabilities in client side applications like ERPs</p> <p>i. Has the firm used in-built audit capabilities in client applications say, Audit Management Module in SAP, Oracle Financials, audit features in Tally, etc.</p>	<p>If Yes – 1 point</p> <p>If No- 0 Point</p>	Maximum Possible Point = 1
<p>3.4 Design of Application Level Controls</p> <p>Has the firm participated in the application design stage for any client to suggest internal controls to be built into software they propose to develop/use, say, maker checker controls, segregation of duties, audit logs, etc. in financial software like accounting, payroll, inventory management, etc.</p>	<p>If Yes- 1 Point</p> <p>If No- 0 Point</p>	Maximum Possible Point = 1
<p>3.5 Carrying out Risk Assessment for the purpose of audit planning</p> <p>Does the firm have a process of reviewing IT controls and risk of failures of the same vis-à-vis impact on audit planning, including but not limited to audit sample size selection, focus areas of audit, etc.</p>	<p>If Yes- 1 Point</p> <p>If No- 0 Point</p>	Maximum Possible Point = 1
<p>3.6 Information Systems Related Audits/ Reviews</p> <p>Has the firm carried out audits relating to :</p> <p>i. IT Security –General Control Reviews</p> <p>ii. Financial fraud investigation involving digital forensic reviews</p> <p>iii. Application Security Audits</p> <p>iv. Technical reviews like, Vulnerability Assessments, Web Application security testing, etc.</p> <p>v. ISO 27001: 2013 reviews</p>	<p>For each Yes- 1 Point</p> <p>For each No- 0 Point</p>	Maximum Possible Point = 5
		Total Possible Points = 13



FIRM MATURITY RATING

Section Reference	Total Possible Points	
Section A	31	<ul style="list-style-type: none"> • Less than 9 Points : Level 1 Firm • = or >9 Upto 18 Points : Level 2 Firm • >18 Points : Level 3 Firm
Section B	15	<ul style="list-style-type: none"> • Less than 5 Points : Level 1 Firm • = or >5 Points Upto 9 Points : Level 2 Firm • >9 Points : Level 3 Firm
Section C	13	<ul style="list-style-type: none"> • Less than 4 Points : Level 1 Firm • = or >4 Upto 8 Points : Level 2 Firm • >8 Points : Level 3 Firm

Level 1 Firm: Indicates that the firm is in nascent stages of adapting ICT and other digital technologies.

Recommendation: Take immediate steps to upgrade its digital competency or will be left lagging behind.

Level 2 Firm: Indicates that the firm has reasonable adaption of ICT and other digital technologies.

Recommendation: Take steps to reach the next level of digital competency.

Level 3 Firm: Indicates that the firm has significant adaption of ICT and digital technologies.

Recommendation: Focus on increasing score to full points in each of the sections and to leverage present status to be in the forefront of use of technologies like, Artificial Intelligence and innovations like, block chain, use of drones, bots, etc for conducting audit.

DCMM ROAD MAP FOR MOVING UP THE NEXT LEVEL OF MATURITY

This section focuses on actual audit and related work being carried out by the firm, which uses automated tools to facilitate the audit process or scenarios, especially where complete audit focuses on the IT controls in the client environment.

Step 1: Benchmarking	Benchmark the current maturity level of the Firm by completing the DCMM and document list of specific aspects that the Firm is currently lacking, and which needs to be initiated to move the next level of Maturity model.
Step 2: Planning Initiatives	Convert the initiative to be taken into an action plan- with timelines- quarterly/ annual.
Step 3: Identifying resources and execution plan	Identify a small cross functional team to own the execution of the plan, with a leader and make the execution of the plan, an important part of the Key Result Areas/ KPI of this team. Define accountability for reporting progress and challenges in implementation.
Step 4: Assessing progress and re-validation against the DCMM.	Assess the progress by re-evaluating against the DCMM and re-visit the execution plan half-yearly.

REFERENCES:



- i. <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>
- ii. https://tuhat.helsinki.fi/portal/files/48681684/Ilom_ki_etal_2011_What_is_digital_competence.pdf
- iii. <http://learning.gov.wales/docs/learningwales/publications/160831-dcf-your-questions-answered-en.pdf>
- iv. <https://www.digitalcpa.com/>
- v. <https://blionline.org/2015/04/anticipation-the-missing-competency-for-cpas/>
- vi. <https://www.td.org/Publications/Blogs/Career-Development-Blog/2015/03/Assessing-Digital-Literacy>
- vii. <https://www.digitalanalyticsassociation.org/self-assessment>
- viii. http://is.jrc.ec.europa.eu/pages/EAP/documents/participants_definitions.pdf
- ix. <https://www.ifac.org/system/files/meetings/files/2820.pdf>
- x. http://www.accaglobal.com/content/dam/ACCA_Global/Technical/Future/pi-highlights-professional-accountants-the-future.pdf
- xi. https://competency.aicpa.org/media_resources/211276-2017-digital-cpa-conference
- xii. https://competency.aicpa.org/media_resources/209543-10-steps-to-a-digital-office-in-the-cloud
- xiii. <http://ictineducation-gartmor.blogspot.in/2015/02/defining-digital-competence.html>
- xiv. <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>



ANNEXURE

(Scoring sheet for use by firm)

DIGITAL COMPETENCY MATURITY MODEL (DCMM) FOR PROFESSIONAL ACCOUNTING FIRMS

NAME OF FIRM	
ADDRESS OF THE FIRM	
YEAR OF ESTABLISHMENT	
NUMBER OF PARTNERS	
NUMBER OF QUALIFIED Chartered Accountants Staff	

General Instructions:

1. This self evaluation form should be filled up only after debate/discussions among all partners of the firm to assess the current digital competence of their firm.
2. It is recommended that all partners of the firm fill up individually their rating/score and then collate into a final ranking table.

SECTION A

LEVEL OF AUTOMATION OF THE FIRM'S INTERNAL PROCESSES

Competency Dimension	Score/Point Awarding Basis	Firm's Response
<p>1.1 Managing Digital Identity The firm has registered</p> <ul style="list-style-type: none"> i. Domain name, ii. Uses a corporate domain ID for mails, iii. Has a verified social media presence 	<p>For each Yes – Score 1 For each No- Score 0</p> <p>Max. Possible Points= 3</p>	
<p>1.2 Operational Process automation The firm uses automation for:</p> <ul style="list-style-type: none"> i. Attendance System ii. Leave management system iii. Mobile device- laptops, PDAs, etc. tracking iv. Internal communication- chats/instant messaging systems v. Centralised file storage system/ server vi. Internal work flow and documentation is managed on a digital work flow management system vii. Electronic database pertaining to client's and services being rendered is maintained and updated 	<p>For each Yes- 1 Point For each No- 0 Point</p> <p>Max. Possible Points= 7</p>	
<p>1.3 High Availability</p> <ul style="list-style-type: none"> i. Data back-up is automated process on the cloud/ off-line at a different location and same is tested periodically 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Max. Possible Points= 1</p>	
<p>1.4 Mobile Devices Data Security Mobile devices and laptops:</p> <ul style="list-style-type: none"> i. Are secured through drive encryption ii. Have end point security deployed iii. Can be remotely backed-up/ content wiped off in case of loss of device (MDM) 	<p>For each Yes- 1 Point For each No- 0 Point</p> <p>Max. Possible Points= 3</p>	
<p>1.5 Data Security</p> <ul style="list-style-type: none"> i. Critical communications are digitally secured (either through digital signatures or passwords/ other mechanism) ii. Access to internet is restricted on need only basis and use of data cards is also routed through corporate firewalls iii. Firm has deployed end-point security on all desktops (including access control) 	<p>For each Yes- 1 Point For each No- 0 Point</p> <p>Max. Possible Points= 3</p>	

Competency Dimension	Score/Point Awarding Basis	Firm's Response
<p>1.6 Electronic Payments</p> <p>Financial Transactions beyond a threshold are made through electronic means using Two Factor Authentication from designated devices only.</p> <ol style="list-style-type: none"> Min of 15% and Upto 40% of all payments are made through electronic means 40% to 75% of all payments are made through electronic means Above 75% of all payments are made through electronic means <p>Note: % is in terms of transaction volume.</p>	<p>Below 15% - 0 Points 15%- 40% - 1 Point 40% to 75%- 2 Points Above 75%- 3 Points</p> <p>Max. Possible Points= 3</p>	
<p>1.7 Copyright and Licenses</p> <ol style="list-style-type: none"> Software deployed are backed by appropriate licenses and inventory of licenses are maintained. 	<p>For Yes- 1 Point For No- 0 Point Max. Possible Point= 1</p>	
<p>1.8 Digital Media for Communication</p> <ol style="list-style-type: none"> Internal employee portal is maintained with updated content relating to firm's audit programs, checklists, sample representation letters, etc and E-newsletter is published to it's employees and knowledge updates are available on portal Employee feedback and evaluation is done online through a portal Mail server is managed in-house/third party service provider with scheduled back-ups/vaulting options enabled to retain mails for defined period of time 	<p>For each Yes- 1 Point For each No- 0 Point</p> <p>Max. Possible Points= 4</p>	
<p>1.9 Protecting Personal Data and Privacy</p> <ol style="list-style-type: none"> Employee related personal information/ HR data in electronic form is secured from unauthorised access Social media checks are carried out on key employees as part of background checks including prior or existing relationship with clients Employees are sensitised on due care to be taken relating to sharing client specific information 	<p>For each Yes- 1 Point For each No- 0 Point</p> <p>Max. Possible Points= 3</p>	
<p>1.10 Online scans for adverse content</p> <ol style="list-style-type: none"> Does the firm carry out, either through a third party or on it's own, scan of online content to track any adverse news about the firm/it's employees 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Max. Possible Points= 1</p>	
<p>1.11 External Validation/Certification</p> <ol style="list-style-type: none"> Is the firm subject to external validation/certifications like ISO 27001 etc., 	<p>For Yes- 2 Points For No- 0 Point Max. Possible Points= 2</p>	

SECTION B

AVAILABILITY OF QUALIFIED RESOURCE POOL AND TALENT DEVELOPMENT RELATING TO DIGITAL COMPETENCIES

Competency Dimension	Score/Point Awarding Basis	Score Assessed
<p>2.1 Skilled resource for managing internal IT infra</p> <p>Does the firm have trained/qualified</p> <ol style="list-style-type: none"> i. System Administrators or in case of cloud deployment- cloud administrators ii. Agreement with service providers for desktop support, hardware maintenance/ AMCs 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Maximum possible points = 2</p>	
<p>2.2 Training/skill of staff related to office automation</p> <p>How many of the firm's staff are formally trained/skilled in :</p> <ol style="list-style-type: none"> i. Word processing software skills ii. Spreadsheet software skills iii. Database/ data analytics skills iv. Presentation skills v. E-mail and internet skills vi. Use of automated work-flow systems <p>Note: Each staff will be counted only once- i.e., same staff possessing two skills cannot be counted twice.</p>	<ol style="list-style-type: none"> i. 0 to 30% of the staff – 0 Points ii. 30% to 60% of the staff- 1 Point iii. Above 60% of the staff- 2 Points <p>Maximum Possible Points = 2</p>	
<p>2.3 Skills related to audit in a computerised environment/Information Systems Audit</p> <p>Do staff members possess one or more of the said qualifications</p> <ol style="list-style-type: none"> i. Diploma in Information Systems Audit (DISA) ii. Certified Information Systems Auditor (CISA) iii. Certified in Risk and Information Systems Control (CRISC) iv. Certified Fraud Examiner (CFE) v. ISO 27001 LA/Implementer vi. Any other relevant certifications <p>Note: For the above, articled clerks are to be excluded- only partners, qualified staff and paid assistants are to be factored.</p>	<ol style="list-style-type: none"> i. 0 to 30% of the staff – 0 Points ii. 30% to 60% of the staff- 1 Point iii. Above 60% of the staff- 2 Points <p>Maximum Possible Points = 2</p>	
<p>2.4 Digital Etiquette</p> <ol style="list-style-type: none"> i. Does the firm provide its staff with training on drafting mail responses/any other form of digital communication factoring cultural and generational diversity of the client/recipients 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Maximum possible points = 1</p>	

Competency Dimension	Score/Point Awarding Basis	Score Assessed
<p>2.5 Protecting against digital threats</p> <p>Does the firm sensitizes it's employees on issues like:</p> <ul style="list-style-type: none"> i. Cyber bullying ii. Phishing attacks/spear phishing attacks targeting key employees iii. Malware threat indicators 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Maximum possible points = 1</p>	
<p>2.6 Content delivery through digital platforms</p> <ul style="list-style-type: none"> i. Does the firm have an online/on-demand learning portal which employees can access from anywhere ii. Are at least 50% of the total CPEs sessions/ training sessions through webinars/ podcasts are attended on an average iii. Has the firm subscribed to any digital learning platforms from professional bodies for skill development of its staff 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Maximum possible points = 3</p>	
<p>2.7 Access to knowledge base, content search online and evaluating content prior to use</p> <ul style="list-style-type: none"> i. Access to business knowledge database, market drivers and technology involved in the industry in which company operates ii. Are staff trained formally on content searches related to work and how to identify authenticity of the source (say of case laws, audit check lists, etc.,) iii. Are staff trained on what online content can be legally re-used without IPR infringements 	<p>For Yes- 1 Point For No- 0 Point</p> <p>Maximum possible points = 3</p>	
<p>2.8 Creative use of digital technologies</p> <ul style="list-style-type: none"> i. Are staff encouraged to put IT to creative use, say building an app for statutory due date alerts, alerts relating to professional updates, automating a routine function 	<p>If atleast 1 such automation achieved- 1 Point For no such automation- 0 Points</p> <p>Maximum Possible Points = 1</p>	

SECTION C

LEVEL OF AUTOMATION RELATING TO AUDIT PROCESSES AND NATURE OF AUDIT SERVICES BEING RENDERED

Competency Dimension	Score/Point Awarding Basis	Actual Points/ Score Achieved
<p>3.1 Use of Automated Audit Planning Software</p> <p>i. Does the firm uses any application software/ tool for audit planning- including scheduling, resource deployment, tracking hrs/days spent vs. budgeted time, etc.</p> <p>ii. Is the software cloud based and secure access is provided to staff members which has facility to collaborate, digital sign off, etc.,?</p>	<p>For Yes- 1 Point For No- 0 Point</p> <p>Maximum Possible Points =2</p>	
<p>3.2 Use of External Automated Audit Tools for Data Extraction, Sampling, Analytics, etc.</p> <p>i. Does the firm have/ uses automated audit tools for data extraction, sampling (Benford's law, RSF, etc.) , analytics etc. (like ACL, IDEA etc.,)</p> <p>ii. Are the staff adequately trained on usage of the tools and interpretation of results thereof?</p> <p>iii. Are the audit staff trained on identifying, obtaining and analysing and retaining relevant digital evidence pertaining to their audit work?</p> <p>iv. Are there scenarios where client's core processes are fully automated while the firm continues to use manual audit techniques rather than system driven reviews?</p>	<p>For Points i to iii For Each Yes- 1 Point For each No – 0 Point For Point iv</p> <p>i. If for > 5 out of top 10 clients manual processes are used- Negative Marking of 1</p> <p>ii. If for < 5 but greater than Zero- No negative marking</p> <p>Maximum Possible Points = 3</p>	
<p>3.3 Use of in-built audit tools/capabilities in client side applications like ERPs</p> <p>i. Has the firm used in-built audit capabilities in client applications say, Audit Management Module in SAP, Oracle Financials, audit features in Tally, etc.</p>	<p>If Yes – 1 point If No- 0 Point</p> <p>Maximum Possible Points = 1</p>	
<p>3.4 Design of Application level Controls</p> <p>i. Has the firm participated in the application design stage for any client to suggest internal controls to be built into software they propose to develop/ use, say, maker checker controls, segregation of duties, audit logs, etc. in financial software like accounting, payroll, inventory management , etc.</p>	<p>If Yes- 1 Point If No- 0 Point</p> <p>Maximum Possible Points = 1</p>	

Competency Dimension	Score/Point Awarding Basis	Actual Points/ Score Achieved
3.5 Carrying out Risk Assessment for the purpose of audit planning i. Does the firm have a process of reviewing IT Controls and risk of failures of the same vis-à-vis impact on audit planning, including but not limited to audit sample size selection, focus areas of audit, etc.	If Yes- 1 Point If No- 0 Point Maximum Possible Points = 1	
3.6 Information Systems Related Audits/Reviews Has the firm carried out audits relating to : i. IT Security –General Control Reviews ii. Financial fraud investigation involving digital forensic reviews iii. Application Security Audits iv. Technical reviews like, Vulnerability Assessments, Web Application security testing, etc. v. ISO 27001: 2013 reviews	For each Yes- 1 Point For each No- 0 Point Maximum Possible Points = 5	

Name of Partner : _____

Membership No. : _____

Date : _____

Signature : _____

