Webinars on demand:
• Impact Assessment and the Circular Economy
• A Rapid Tour of Emerging Technologies and IA
• Human Rights and Impact Assessment
• and more!

Online training and mentorship through the Professional Development Program

Upcoming events, including the IAIA22 annual conference and NEW online training courses

Free downloadable publications, like Best Practice Principles, IA FasTips, and more

Find these resources and more at www.iaia.org
Welcome & Introduction

Josh Fothergill
Founder & Director
Fothergill Training & Consulting Ltd

Jo Murphy
Chief Executive
Fothergill Training & Consulting Ltd
Outline

• The Project
• What is the Digital Impact Assessment?
• Benefits + Challenges Generated by IA’s Digital Transition
• The State of Digital IA Practices
• Themes + Trends in Digital IA
• Q&A Session
IAIA Innovation Grant supported Project:

Research and reporting on:  
*The State of Digital Impact Assessment Practice*  
– Perspectives, Case Examples and Future Trajectories

Objective: To help ensure IAIA (members & HQ) are able to effectively understand, engage with and aid the appropriate take up of advances in digital technology, approaches and innovations within IA practice across the globe.

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**The Project:**  
**Global Engagement**

**Interviewees (+ Case Studies)**  
- Paul Morgalla and Fiona Wilson (Atkins – a member of the SNC-Lavalin Group),  
- Etia Ndarake and John Lahu (Willend Associates Ltd), Dr Andy Aboje (Independent Consultant), Felix Olawore (RHDHV),  
- Paul Eijssen (RHDHV),  
- Timothy Peirson-Smith (Executive Counsel),  
- Nikola Nikacevic (Eon+) and Andrew Jamieson (Eon+ and LR Consultants),  
- Sebastian Elgueta (División de Seguimiento e Información Ambiental en Superintendencia del Medio Ambiente),  
- Joanne Jacyk and Vera Yin (Nuclear Waste Management Organization, Canada),  
- Ross Stewart (AECOM),  
- Chris Gentle (WABSI and WAMSI),  
- Atiyah Curmally (IFC – International Finance Corporation),  
- Matt Jury (DHI),  
- Lone Kørnøv (University of Aalborg) Ulf Kjellerup (COWI),  
- Clara U (HK EPD),

**Additional Case Studies**  
- Prem Khanal (a leading Nepalese social IA expert working with the World Bank),  
- David Burack (WorldFish), and  
- Massimo Zanasso (Wood).

**Reviewers**  
- Professor Carla Duarte and Fernanda Garcia Nobre (Universidade Federal de São Paulo),  
- Chris Gentle (Western Australian Biodiversity Science Institute (WABSI) and Western Australian Marine Science Institution (WAMSI)), and  
- Daniel Smith (Royal Haskoning DHV (RHDHV))

**Participants**  
- 182 IA professionals from across the globe who completed the survey.
What is Digital Impact Assessment?
Using Digital approaches in IA is not new...

BUT... The pace of adoption has increased significantly since 2015!

ADVANCED DIGITAL IA PRACTICES

- **Artificial Intelligence (AI)** – Machine Learning (ML) & Natural Language Processing (NLP)
- **Interactive online digital screening tools**
- **Virtual Reality (VR)** – Digital visualization of social & environmental data and IA findings
- **Within IA use of Online E&S data sources and Geographic Information Systems (GIS)**
- **Consultancy internal digital screening tools**
- **E-DNA**
- **Drone Surveys**
- **Downloadable Assessment Tools / Aids**
- **National E&S designation maps (within online system / GIS)**
- **Downloadable Screening Template**

ESTABLISHED DIGITAL IA PRACTICES

- **Screening**
- **Baseline / Scoping**
- **Assessment**
- **Stakeholder Engagement**
- **Reporting**
- **Follow-up & Monitoring**

**Copy of FIGURE 1.1 from The State of Digital IA Practice**
(Fothergill & Murphy, 2021)
Defining Digital IA...

- No adopted definition of what digital IA is considered to be.
- Lots of different views based on experience and perspective on IA practice

“The use of advances in digital technologies and their applications in the pursuit of enabling more effective IA practice.”

Fothergill & Murphy, 2021
Benefits and Challenges
Generated by IA’s Digital Transition

Digital IA
Key Areas of Change Requiring Management

Data
Access, Integration and Trust

Quality & Costs
More effective practices / loss skilled humans in IA?

Engagement
Equity, Inclusion + Reach: Digital Divide

Safety, Privacy + Security
Perspectives from our IA profession

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Barriers</th>
<th>Risks</th>
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<tbody>
<tr>
<td>Access to data</td>
<td>39% Digital skills in IA</td>
<td>17% Trust/reliability in technology &amp; data</td>
</tr>
<tr>
<td>Efficiency of IA</td>
<td>33% Standardization</td>
<td>13% Replacing traditional IA approaches</td>
</tr>
<tr>
<td>Engagement</td>
<td>33% Regulatory barriers</td>
<td>6% Digital divide / Equity</td>
</tr>
<tr>
<td>Effectiveness of IA</td>
<td>31%</td>
<td>Transparency / black box</td>
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<tr>
<td>Improved Impact Monitoring</td>
<td>8%</td>
<td>Privacy, safety &amp; security</td>
</tr>
<tr>
<td>Centralized data</td>
<td>8%</td>
<td>Increased costs</td>
</tr>
<tr>
<td>Wider application of IA</td>
<td>6%</td>
<td>Information overload</td>
</tr>
<tr>
<td>Health &amp; safety</td>
<td>5%</td>
<td>Style over substance</td>
</tr>
<tr>
<td>New data opportunities</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Reduced travel</td>
<td>5%</td>
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Webinar Poll
Benefits and Challenges in Digital IA

Which two areas of digital IA requiring change management would you most like to learn more about in the future?
A. Data
B. Quality & Cost
C. Engagement
D. Safety, Privacy & Security
The Report Explores **10 Elements** of Digital IA Practice

<table>
<thead>
<tr>
<th>Digital Impact Assessment</th>
<th>Digital Transformation within Aspects of the IA process</th>
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<tbody>
<tr>
<td>Digital Approaches &amp; Technologies enabling progress in Digital IA</td>
<td>Digital screening tools</td>
</tr>
<tr>
<td>Inter-IA and online environmental and social management systems</td>
<td>Digital IA platform / workspace</td>
</tr>
<tr>
<td>Digital baseline data capture devices</td>
<td>Digital stakeholder engagement</td>
</tr>
<tr>
<td>Artificial intelligence (AI) in IA</td>
<td>Digital EIS and web-based reporting</td>
</tr>
<tr>
<td>IA and virtual, augmented &amp; mixed realities</td>
<td>Digital follow-up: monitoring and auditing</td>
</tr>
<tr>
<td>Online learning and capacity building</td>
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</tr>
</tbody>
</table>
1. Inter-IA and online environmental and social data management systems

Online sources of E&S data and analysis that can be used in (basic) or are dedicated toward (advanced) the IA process.

Examples:

- **IRELAND**: ENVIRONMENTAL SENSITIVITY MAPPING WEBTOOL (ESM)
- **WESTERN AUSTRALIA**: SHARED ANALYTICAL FRAMEWORK FOR THE ENVIRONMENT (SAFE)
- **DENMARK**: CENTRAL EIS REPOSITORY AND ANALYSIS (DREAMS DIGITAL IA PROJECT)

2. Digital baseline data capture devices

Digital technology and approaches that influence how capture and management of baseline information is undertaken.

Key Technologies:

- **Remote Sensing**
- **Drones**
- **Remote cameras and sound traps**
- **eDNA**
3. Artificial Intelligence (AI) approaches in IA

Using a program, algorithm to do IA tasks usually undertaken by professionals – risk mapping, scoping, analysis of trends.

Examples:

- **INTERNATIONAL FINANCE CORPORATION**: MACHINE LEARNING ENVIRONMENTAL, SOCIAL AND GOVERNANCE ANALYST (MALENA)
- **DENMARK**: BUILDING PRACTICAL IA TOOLS USING AI: THE DREAMS PROJECT
- **SINGAPORE AND MALAYSIA**: COMBINING DRONES AND DIGITAL SYSTEMS TO AUTOMATE MONITORING OF WATER QUALITY ON INSHORE CONSTRUCTION PROJECTS

4. IA in multiple realities (virtual, augmented, and mixed)

The application of virtual, augmented, hybrid mixed reality and digital twins within IA across scoping, stakeholder engagement, monitoring, etc.

Approaches include:

- **VR** – Virtual Reality
- **AR** – Augmented Reality
- **H / MR** – Hybrid / Mixed Reality
5. Online learning and capacity building

The shift to online training and capacity building and the growth of e-learning across the IA profession from students, participants to specialists and IA practitioners.

Examples:
- THE EQUATOR PRINCIPLES ASSOCIATION: ESIA e-learning toolkit to enable capacity building across its membership
- IAIA: Foundation course, Webinars and IAIA21 Conference
- WIDER IA COMMUNITY: IFC, HKIEIA, AEIAN, IEMA, etc.

Webinar Poll
Digital approaches and technologies enabling progress in Digital IA

Which two areas of digital approaches and technologies would you most like to learn more about in the future?
1. Inter-IA and online ESMS
2. Digital data capture devices
3. Artificial Intelligence
4. Virtual Reality, AR + MR
5. Online IA capacity building
A. Digital Screening Tools

Tools to (help) determine whether EIA is / is not required, or is unclear and needs a determination by specialists. Tools have the potential to aid, or even automatically generating screening reports for competent authority.

Examples:
- SOUTH AFRICA: NATIONAL WEB-BASED ENVIRONMENTAL SCREENING TOOL
- GLOBAL: NEXUS ENVIRONMENTAL ASSESSMENT TOOL (NEAT+)
- CONSULTANCY: ENVIGO, TESA, ETC

B. Digital IA Workspaces (Digital IA Platform / Ecosystem)

IA and IT professionals working to create dedicated digital systems that seeks to house all/part of the collaboration and exchange activities that occur within the IA process into dedicated systems.

Examples include:
- UNITED KINGDOM: CROSSRAIL 2’S DIGITAL SCOPING WORKSPACE
- GLOBAL (via SERBIA): ENVIGO - A COMPREHENSIVE SYSTEM FOR DIGITAL ESIA
- GLOBAL: CONSULTANCIES – ROYAL HASKONING, AECOM, XODUS GROUP, ETC.
C. Digital Stakeholder Engagement

Using a program, algorithm to do IA tasks usually undertaken by professionals – risk mapping, scoping, analysis of trends.

Examples:
• CANADA: BUILDING STAKEHOLDER TRUST IN DEVELOPING A DIGITAL ENVIRONMENTAL DATABASE MANAGEMENT SYSTEM
• GLOBAL: THE SOCIAL LICENCE DATA TOOLKIT, IFC + BHP FOUNDATION
• GLOBAL: DIRECT WORKER REPORTING, AS PRESENTED BY &WIDER AT IAIA21

D. Digital EIS and web-based reporting

The development of effective digital IA reporting tools seeking to deliver more effective and proportionate IA practice.

Examples include:
• ICELAND: A STEP FORWARD IN DIGITAL EIS - BURFELL WIND FARM
• NETHERLANDS: HOUTRIJBDUK PROJECT - PILOTING A RETROSPECTIVE DIGITAL EIS TO IDENTIFY KEY LESSONS FOR FUTURE DIGITAL EIS PRACTICE
• UNITED KINGDOM: BUILDING MARKET INTEREST, AWARENESS, AND UPTAKE OF DIGITAL ES
E. Digital monitoring, follow-up, and auditing

Integrated digital systems to efficiently and transparently enable the real-world delivery of E&S commitments to be validated, poor performance and unanticipated occurrences readily identified + resolved, and lessons learned from plan/project implementation.

Examples:
- **CHILE**: The digital transformation of a nation’s approach to post-IA environmental permit compliance and monitoring
- **DENMARK**: Digital management of ESG followup by the Danish Export Credit Agency
- **CHINA (HONG KONG)**: The use of hybrid reality visualization in IA follow-up

**Webinar Poll**

**Digital transformation within the IA process**

Which two areas of digitalization within IA process steps would you most like to learn more about in the future?

A. Digital screening tools
B. Digital IA workspaces
C. Digital stakeholder engagement
D. Digital EIS + web-based reporting
E. Digital follow-up
NEXT STEPS

Enhancing the Transition to Circularity via IA

Digital EIA...

Themes and Trends

<table>
<thead>
<tr>
<th>Digital trends across IA practice</th>
<th>Trends within digital IA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital IA is a spectrum of activity across practice not a distinct sub-field</td>
<td>Making the case for digital approaches in IA is getting easier</td>
</tr>
<tr>
<td>Digital approaches are key to IA generating more value from its data</td>
<td>Effective digital IA systems embrace wider advancements in technology and software</td>
</tr>
<tr>
<td>Digital is not a silver bullet for the delivery of “perfect” IA</td>
<td>Digital approaches are becoming more integrated into the IA process</td>
</tr>
<tr>
<td></td>
<td>The skill set required to deliver IA is expanding</td>
</tr>
<tr>
<td></td>
<td>Blending established and digital approaches delivers effective outcomes</td>
</tr>
<tr>
<td></td>
<td>Increasing opportunities for truly local to global IA teams</td>
</tr>
</tbody>
</table>
**Beyond the State of Digital IA Practice**

Professional discussion needed on...

*How digital approaches + technology could change IA practice in the longer term*

Can digital IA provide new ways to demonstrate ESG outcomes?

What role will AI play in the future delivery of the IA process?

Might digital move IA from plans/projects to geographies?

Will open-source data and tools enable democratization of IA?

---

**NEXT STEPS**

Post-webinar:

- Read, reference + make use of the *State of Digital IA Practice*.
- Spread the word to other IA professionals and within project teams.
- Consider benefits, barriers and risks when considering digital approaches.
- Engage in discussion and share case examples.
This Project was supported by an IAIA Innovation Grant

• Innovation Grants are a competitive funding source from the IAIA Board to encourage members to undertake innovative projects to advance the strategic direction of IAIA.
• Grants range from $2,000 to $5,000.
• The Board awards a small number of grants that advance IAIAs direction each year (2-4), depending on available funds.
• Projects should be deliverable in 12 months.
• Projects that leverage financial / in-kind support from others are encouraged.
Thank You for Attending

The State of Digital Impact Assessment Practice
Launch Webinar
8 December 2021

E: Josh@fothergilltc.com
W: www.fothergilltc.com

Thank you!

Let's continue the discussion:

@IAIAnetwork  #iaiawebinar

IAIA
International Association for Impact Assessment