

# For the record: the evolution of acceptable digital technology

## Introduction

In 1995, The Centre for Computing and Social Responsibility (CCSR) at De Montfort University was launched at ETHICOMP 95 conference. I was the founding director of CCSR and the creator of the ETHICOMP conference series, which quickly became an important international, interdisciplinary forum to discuss the ethical and social issues surrounding evolving digital technology. The computer ethics community, as it was then known, rapidly grew from 1995 and especially so in Europe, mainly due to ETHICOMP. These conferences were held approximately every 18 months. Nearly 400 papers were presented in the first five conferences held in 1995, 1996, 1998, 1999 and 2001. It became apparent that whilst special issues of extended versions of some of these papers were published in a variety of journals, there was no journal that had the same interdisciplinary perspective as ETHICOMP. It was time to launch a new academic journal, a journal that would capture, for the record, the broader issues surrounding digital technology and how these might be addressed; thus, resulting in acceptable digital technology.

Discussions took place with Troubadour Publishing which is an independent UK publisher based in Leicester. It was agreed that a new academic peer-reviewed journal, the Journal of Information, Communication and Ethics in Society (originally known as Information, Communication and Ethics in Society [ICES]), would be launched at ETHICOMP 2002 in Lisbon on 13–15 November. I and CCSR Research Fellow N Ben Fairweather were the founding co-editors. A supplement to the first volume was published and given to delegates at ETHICOMP 2002. In the editorial of this launch supplement, we wrote that the computer ethics “. . .community is multidisciplinary including those from computer science, information systems, law, media, philosophy, politics, psychology, sociology, and software engineering. Partnerships have been forged across disciplines in order to study and address some of the greatest challenges faced by society with the advent of the advancing information and communication technologies. Indeed, we as Editors in Chief are indicative of such partnerships. It is against this backdrop of technological advance and increasing scholarly activity that the Journal of Information, Communication and Ethics in Society (ICES) has been launched. ICES is an interdisciplinary journal which addresses the social and ethical impacts of new media, and information and communication technologies. The editorial board of ICES is drawn from eminent scholars across a wide range of disciplines. The board’s international membership aids ICES in promoting a cross cultural and global perspective. It is a top class refereed journal which appeals to a wide audience.” (Rogerson and Fairweather, 2002, p. S3).

In 2007 after four successful volumes, the journal was acquired by Emerald Publishing. It then became known by the acronym Journal of ICES (JICES). The journal’s original aims remain and are reflected in the current description on the webpage, which states, “It is vital that insight is provided into how we can harness the huge potential of future technological advances whilst avoiding the social and ethical risks. The Journal of Information, Communication and Ethics in Society has an important role in providing such insight into the social and ethical benefits and risks. Drawing from a wide authorship it provides necessary interdisciplinary, culturally and geographically diverse insight necessary to understand the pervasive new media and information and communication technologies” [1].

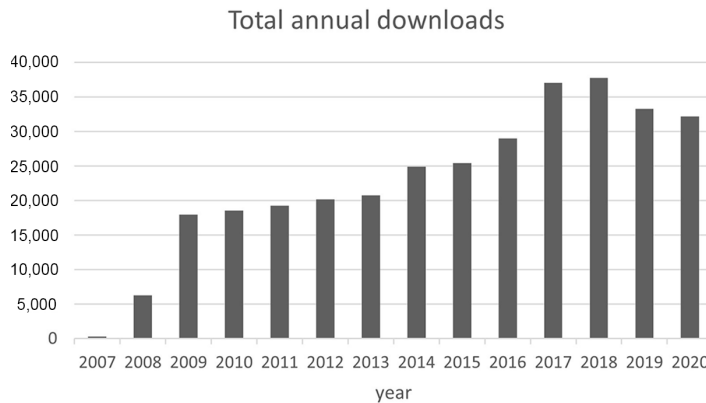


**Usage**

From 1 January 2007 to 30 June 2021, there were 341,626 downloads by customers, excluding staff, crawlers and free usage. The yearly totals are shown in Figure 1. There has been a significant and steady rise in annual downloads. The monthly downloads show peaks in March and October each year. This could be a reflection of the academic year. “In most countries, the academic year begins in late summer or early autumn and ends during the following spring or summer. In Northern Hemisphere countries, this means that the academic year lasts from August, September, or October to May, June, or July. In Southern Hemisphere countries, the academic year aligns with the calendar year, lasting from February or March to November or December” [2]. In March 2020, there was a significant drop in downloads which coincided with a major global surge of COVID-19 cases.

Between September 2007 and August 2015, the top five countries (in descending order) by the papers downloaded were: Malaysia, Australia, USA, UK and India, whereas between January 2017 and May 2021, the top five countries were: Australia, Malaysia, USA, China and UK. There were downloads during both periods from most countries across the world.

The number of papers per volume has gradually increased. Volume 1 comprised 18 papers compared with Volume 19, which has 35 papers. This reflects the increase in both the number and geographic spread of submitted manuscripts, as illustrated in a sample of data shown in Table 1. It should be noted that data is only available from the end of 2011.



**Figure 1.**  
Total annual  
downloads of papers  
by customers

**Source:** JICES performance reports compiled by Emerald Publishing

**Table 1.**  
Submitted  
manuscripts from a  
total number of  
countries

Date from	Date to	Manuscripts	Countries
1 July 2012	30 June 2013	22	12
1 July 2014	30 June 2015	50	18
1 July 2017	30 June 2018	90	29
1 July 2020	30 June 2021	126	47

**Source:** Manuscripts Received (Detailed) report on the JICES ScholarOne Manuscripts platform

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Overall, these statistics demonstrate a sustained global interest in the social and ethical issues related to digital technology.

### Scope

The supplement for Volume 2 included a paper (Rogerson *et al.*, 2004) focusing on the technologically-dependant society. The paper was a collection of opinions by some members of the editorial board from Australia, Germany, Israel, Japan and Poland. Shifra Baruchson Arbib wrote about the need to “[...] foster an information-oriented climate, and assimilate information seeking as a routine procedure for managing life issues and events. Thus, step by step, through personal encounters, people who are not computer-oriented will come to realize the hidden potential of the Internet: the chance take a step forward in their own personal growth, and manage their lives based on informed decision making. Ignoring this historical opportunity will cause not only a digital divide but a mental divide.” (Rogerson *et al.*, 2004, p. S16). John Weckert and Barney Dalgarno focussed on a major Internet problem, online child pornography. They suggested that problems were exacerbated because of the misconception by those involved that online access in the privacy of one’s home was not easy to detect. Rafael Capurro discussed the growing information society in the context of Germany. The issues he covered include: online research and education, free and open-source software, e-government and e-democracy. Kiyoshi Murata considered whether global information ethics was possible. He explained that the greatest challenge was global consensus-building. This was because “of the extensive geographical scope of the stakeholders eligible to participate in the consensus-building processes, [which means] these ethical problems must be addressed in a multinational and multicultural environment.” (Rogerson *et al.*, 2004, p. S18). Finally, Stanislaw Szejko discussed the practical ethical and societal issues related to technology dependency in the context of the changing political and economic climate within Poland. He explained that “what is now really needed is to ensure industry and administration have a better understanding of these issues and their impact on product and service delivery and ultimately on profit. This would lead to the wider participation of industry and administration in this research and the related implementation activities.” (ibid, pp. S20–S21). I concluded the piece with, “The views presented by the contributors of this article illustrate the heterogeneous nature of the information society and the diverse issues that arise from the advancing ICT. The former needs to be accepted and the latter effectively addressed if we are going to flourish in this technologically-dependant society.” (Rogerson *et al.*, 2004, p. S21). Every subsequent issue of JICES has reflected this sentiment.

This is illustrated by an analysis of the keywords used in published papers. Raw data was mined from the Scopus database for all papers published in JICES. These have been analysed and grouped under 18 categories, as shown in Table 2. The usage of each keyword grouping spreads across the 19 volumes of JICES. There have been changes. Digital technology has evolved, becoming more powerful, complex and flexible. The application areas have broadened and deepened. Therefore, groupings such as *digital technology infrastructure* and *application areas* contain some different words over time. However, the underpinning groupings such as *ethics and philosophy* and *concepts* have remained more constant. This supports the view of Johnson (1997, p. 61), who wrote, “The ethical issues surrounding computers are new species of generic moral problems [...]. When activities are mediated or implemented by computers, they have new features. The issues have a new twist that make them unusual, even though the core issue is not.”

This final issue of Volume 19 clearly demonstrates the currency, the global reach, the disciplinary breadth, the academic depth and the application variety which JICES now

**Table 2.**  
JICES Keyword  
usage from volume 1  
issue 1 to volume 19  
issue 2

Keyword groupings	Total
Ethics and philosophy	193
Privacy and security	101
Digital technology infrastructure	94
Concepts	84
Internet, the web and social media	83
Location, culture and religion	76
Techniques and approaches	46
Global	39
Application areas	32
People	30
Digital divide	27
Education and research	23
Online journalism, publishing and communication	22
Business	22
Information	21
Government, governance and politics	18
Sustainability	15
Property	10

**Source:** Raw data from Scopus database for all manuscripts published in all issues of JICES

exhibits. The authors of the papers represent Australia, Canada, Finland, Germany, Indonesia, Kazakhstan, Kenya, Russia, Thailand, UK, United Arab Emirates and USA. The topics covered include attitudes towards interactive online tools, cybersecurity perception of small businesses, online safety of young people, the place of print media in the information age, AI ethics; digital technology trustworthiness, the social impact of e-learning and COVID-19 contact tracing in the Black, Asian and Minority Ethnic community. These papers include four country-specific studies for Indonesia, Saudi Arabia, Thailand and UK.

The complete social and ethical landscape of digital technology has been explored over the 19 volumes of JICES. Some topics have been revisited over this period; thus, highlighting ongoing seriousness and concern. The digital divide is a prime example. The *emerald insight search engine* lists 164 occurrences of the phrase *digital divide* from Volume 1 Issue 1 to Volume 19 Issue 2 plus 8 EarlyCite papers. The first occurrence was by [Harris et al. \(2003\)](#) when they considered the digital divide to be one of the key ethical challenges as e-commerce moved from micro to macro activity. [Tavani \(2003\)](#) discussed this issue from a philosophical standpoint which provided a foundation on which to build future applied research and consequential practical action. He supported the use of the phrase *digital divide* for it brought to the fore the need to address the issues surrounding technological dependency. He wrote ([Tavani, 2003](#), p. 105), "If we look beyond (digital) technology itself for an alternative metaphor, we might easily underestimate, or perhaps even ignore altogether, the crucial dimension of digital technology in the problems underlying 'the divide'." This sentiment was echoed in 2020 when I wrote ([Rogerson, 2020](#), p. 321), "There have always been social divides predicated upon, for example, poverty, education, gender and status. Such divides have been challenged sometimes by governments, sometimes by radical politicians and sometimes by socially responsible individuals. Such divides have often been diminished by pragmatic people driven by justice and philanthropy [...]. With increasing technological global dependency, the digital divide has become one of the most significant social divides of our time." The importance of the digital divide is reflected in fact

there have been two JICES special issues devoted to the subject; Volume 16 Issue 3 2018: Partnership for Progress on the Digital Divide: At the Nexus of Social Justice, Media Justice, and Ethics, and Volume 18 Issue 3 2020: Digital Inequalities: Contextualizing Problems and Solutions. In the introductory editorial, Winter (2018, p. 240) wrote “This special issue on The Digital Divide at the Nexus of Social Justice, Media Justice and Ethics features a collection of scholars and practitioners from diverse disciplines and perspectives with a shared goal of mitigating the digital divide and resulting disparities. As key aspects of social, political and economic life are increasingly digitized, how can digital divide scholars best identify and address the unjust discriminatory impacts of algorithms and artificial intelligence, particularly given their opacity? What role do computer scientists, corporations, governments and citizens play in addressing these concerns? And where might fruitful partnerships emerge between these groups? What alternative sociotechnical systems and practices might be realized to better reflect all stakeholder values?” This set of questions aligns with Tavani’s position 15 years before and offers the foundation of a strategy to address the digital divide.

In 2020, the second special issue on the digital divide was compiled by guest editors Laura Robinson, Massimo Ragnedda and Jeremy Schulz. They concluded their introductory editorial with a commentary that aligns with Harris *et al.* (2003), Tavani (2003) and Winter (2018). Their call to action is worthy of repeat as they wrote (Robinson *et al.*, 2020, pp. 326–327), “In closing, we have seen that as digital inequalities proliferate and become more complex, so must our understanding of the contours of the solutions to them. At the time of writing, digital inequalities have never been more important. Solutions have never been more needed. As Simon Rogerson powerfully concludes, in the midst of the COVID-19 pandemic, digital inequalities have taken on new salience. Today, there are potential life-and-death consequences of digital inequalities in light of the pandemic: ‘The recent COVID-19 pandemic is an extreme example of the acceleration of this divide and in this situation may well have indirectly resulted in fatality. This is because information empowers those who have it; but it also disenfranchises those who do not. During the pandemic, these digital outcasts, who are not informed in a timely manner, might put themselves in grave danger. Furthermore, with physical social networks destroyed the digital outcast suffers emotionally and mentally’. Future work and scholars must examine these issues more closely as their salience grows with each new phase of the pandemic, each wave of new technologies and each opportunity for all of us to work for digital inclusion together.”

### Editorial

As explained, there are recurrent themes across the 19 volumes of JICES. This raises a number of questions: why are issues being continually investigated? Is it that practitioners and policymakers are not accessing and using research findings? Why are these messages not getting through? Is there a communication gap in terms between academia and industry in terms of language and publication outlets? Are researchers choosing topics that are likely to be published rather than choosing topics that have real-world significance? These types of questions have often been the foundation of JICES editorials. Here are some examples:

The editorial of Volume 1 Issue 1 lays out the reasons for wider engagement in addressing the broader issues of increasing dependency on digital technology. “Overall, the perfect process to arrive at authoritative guidance on the full range of issues of social responsibility, including those in fast moving fields such as ICT, is not available. Given that we have this limited moral guidance, what do we do? The world will not wait for us to develop it. In the meantime, we must make, and act on, interim proposals. Moral criticism of practices and proposals may be appropriate in its own right and also as a part of the broader

debate. Without authoritative moral guidance, these critiques may, in turn, be open to debate. The Journal of Information, Communication and Ethics in Society aims to help in this process, but is aware of its limitations. But ICES is not just about empty intellectual debate, it is also about bringing those interim proposals to a wider audience, and in that spirit, we would like to close with a proposal for social responsibility in one of the many fields of interest, the field of information technology management.” (Fairweather and Rogerson, 2003, pp. 11–12).

The editorial for Volume 4 Issue 4 calls for governments to be moral exemplars. “The moral obligations on government that accompany the adoption of citizen-facing e-government are substantial. They arise because the relationship of citizens to government is non-discretionary, government claims a monopolistic position, and because the moral basis of the state is to serve citizens present and future (and in some cases, or following some arguments, god). They are reinforced because combined they lead to a situation where other agents can reasonably expect government to set standards for good practice.” (Fairweather and Rogerson, 2006, p. 173).

Ten years later and the world is very different. The editorial for Volume 14 Issue 1 highlights the radical changes in publishing and the ramifications for all players. “Whether we are authors, publishers or readers, we have responsibilities and obligations to act in an ethically acceptable way within academic publishing. If the integrity of academic literature is to be maintained in the digital era, authors must be educated in publication ethics, publishers should actively promote ethical practice and decision makers should be mindful that strategy does not compromise ethical robustness. Only then will we have trustworthy relationships across the publishing landscape, and society will prosper.” (Rogerson, 2016, p. 3).

The dark side of digital technology is explored in the introductory editorial for Volume 15 Issue 3, which was a special issue that analysed the impact and perception of the social and ethical issues raised by the Snowden disclosures. “Once a significant level of technological interoperability was achieved big data existed. Big data is not new. At present, we simply have Even Bigger Data making possible the horrific societies which Orwell and Solzhenitsyn wrote about. In the not-too-distant future with the cloud, big data, and maybe 80–90% of the world’s population online and connected the scope for systems of oppression seems limitless. Consequently, we must consider and counter what oppressive regimes of tomorrow’s world could and might do in their drive to subjugate humankind.” (Rogerson, 2017, p. 182).

The need to have the wherewithal to address such issues is the focus of the editorial for Volume 17 Issue 4, “[. . .] all those involved in computing, albeit as provider or consumer, need to have the ethical tools, skills and confidence to identify, articulate and resist unethical aspects of IT. Moreover, they should be free to challenge the decisions of and orders issued by IT leaders where those actions are ethically questionable, without detrimental effect to themselves.” (Rogerson, 2019, p. 374).

It seems there is much work to do. “There is a need to develop a new vision for digital ethics which is theoretically grounded but pragmatic. It must exhibit phronesis and praxis, so that industry and government will engage, accept and embrace this as a *modus operandi*.” (Rogerson, 2021).

## Future

In 2015, a special double issue of JICES was published to celebrate 20 years of the ETHICOMP conference series. In my paper, *Future Vision*, I wrote (Rogerson, 2015, pp. 356–357, “When I first engaged with this community over 20 years ago, I was struck by the open-mindedness of its members. It was a far cry from the single-minded, hierarchical culture that existed and still exists in some areas of academia [. . .]. This type of collective action and individual attitude should be cherished and nurtured, for it holds the key to the future. Unfortunately, today within



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academia, there seems to be a growing trend to address the ethical and social implications in a single disciplinary manner. There is a dwindling dialogue between industry and academia about such matters. Within industry and government, the compliance culture has taken a firm hold and so strangles the opportunity for dialogue and analysis of complex multi-faceted socio-ethical issues related to ICT. The gatekeepers of past generations who provided the glue between academia, industry and government are becoming increasingly inactive and a serious void now exists [...]. The aim of Future Vision is to regenerate the relationships across the wider community so that ICT will be developed and utilised in an ethical and socially acceptable manner. It is not simply an academic initiative but a whole-world initiative which will lead to an improvement in practice. I and my generation are not the ones to drive this through. Future Vision is in the hands of the Millennials.”

In September 2021, my latest book, *The Evolving Landscape of Ethical Digital Technology* will be published. In the concluding chapter I wrote (Rogerson, 2021), “[...] it is fitting that a book about the evolving landscape of digital technology includes some thoughts of those in the next generations who are charged with ensuring digital technology is ethical.” Five scholars: Katleen Gabriels, Stéphanie Gauttier, Laura Robinson, Lachlan Urquhart and Kirsten Wahlstrom agreed to share their views of what the future landscape of digital technology might possibly look like over the next 25 years and what the associated ethical hotspots might be. Together, they have provided a fascinating glimpse of what might lie in store for the world at large. Such scholars need to be provided with supportive avenues to share their views and ideas of how to realise ethical digital technology. JICES has a key role to play in this.

Consequently, at the end of Volume 19, I will be stepping down as the editor of JICES. It has been a privilege to receive such high-quality papers for the journal from worldwide authors representing so many disciplines. They have ensured JICES has flourished. They have made a significant difference in the manner in which digital technology is researched, developed and governed to ensure it is socially and ethically acceptable. The journey of JICES is not over and so it is time to pass on the lead editorship to the next generation. I am delighted that Professor Jenifer Sunrise Winter is stepping into this role. Jenifer has been involved with JICES since 2016 as a reviewer, author, guest editor, associate editor and most recently as my co-editor for the current volume. Jenifer’s research and teaching in the School of Communications at the University of Hawai’i at Manoa focus on the intersection of information and communication technologies (ICTs) and communication policy/ethics. I am sure under her guidance JICES will continue to influence educators, researchers, developers and policymakers. I wish her well in doing so.

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## Notes

1. [www.emeraldgrouppublishing.com/journal/jices#aims-and-scope](http://www.emeraldgrouppublishing.com/journal/jices#aims-and-scope)
2. [https://en.wikipedia.org/wiki/Academic\\_term](https://en.wikipedia.org/wiki/Academic_term)

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