TIME EXTEND!

The future of curating, preserving and exhibiting videogames

A White Paper

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EXECUTIVE SUMMARY

While the economic and cultural value of videogames to the UK and global creative sectors is widely recognised, the long-term sustainability of our playable heritage is under threat.

The ability to play, learn from, and interrogate the history of videogames is undermined as systems become obsolete, data becomes unreadable, servers and services go offline, and the knowledge and insights of developers, players, critics and commentators are lost.

While there are a number of projects dedicated to aspects of videogame history, there is a lack of co-ordination. Projects are of different scales with some operating from within institutions and others being the product of the passion and enthusiasm of independent groups and individuals. The lack of co-ordination and pathways to collaboration means that expertise and innovation are not effectively shared.

Quite simply, unless we act now:

- future generations will permanently lose access to their cultural heritage
- the next generation of developers will be robbed of their ability to access and learn from historical reference material
- the distinctive histories of regional game development and the cultures of play will remain untold

Our research has highlighted 8 key areas of priority for future research and practice:

1. Increase formal international collaboration & networking
2. Coordinate development of efforts to address challenges of existing IP policy on game/digital preservation
3. Audit and map current preservation and exhibition activity
4. Further develop videogame literacy programmes for a broader range of audiences
5. Support and enhance cross-sector dialogue on videogames and culture
6. Further develop and raise awareness of preservation-friendly game development practices
7. Develop and showcase innovation in exhibition and interpretation
8. Strengthen the connections between global and local videogame histories

Fully accounting for the breadth of gaming histories necessarily involves working with an extremely wide variety of complex digital, physical and hybrid objects. These include software and hardware devices, merchandising and collectibles, design documentation and fan-produced ephemera.

Given the scope of these materials, it follows that knowledge and expertise in curation, conservation and interpretation will be distributed across numerous institutions and, crucially, will exist outwith formal institutions. Private collectors, enthusiasts, independent developers and many others will have an important role to play.

As such, we argue that videogame heritage activity must be supported by a structure that is able to work with, and for, this diverse range of stakeholders regardless of whether they operate within organisations and regardless of size.

This White Paper reports on some key activity already undertaken. It concludes by detailing the launch of the Videogame Heritage Society, a new Subject Specialist Network (SSN) led by the National Videogame Museum that seeks to foster new partnerships and collaborations and deliver on the key areas of priority for research and practice.
1. INTRODUCTION

**Videogames are disappearing**

While the economic and cultural value of videogames to the UK and global creative sectors is widely recognised, the long-term sustainability of our playable heritage is under threat.

The ability to play, learn from, and interrogate the history of videogames is undermined as systems become obsolete, data becomes unreadable, servers and services go offline, and the knowledge and expertise of developers, players, critics and commentators is lost.

In addition, deep-rooted industrial practices of planned obsolescence and incompatibility leave old games and systems unsupported, undesirable and unusable,

This combination of factors means that much videogame software and hardware is already unplayable and development processes are unrecorded. This continues apace as studios go out of business without their work being documented; new systems based around digital distribution and streaming confound traditional ‘object-based’ approaches to collecting, archiving and preservation; and legal restrictions complicate (or even make impossible) preservation, collecting and exhibition work.

In short, unless we act now, future generations will lose access to their cultural heritage.

Looking forward, this will affect the talent pipeline and the production of new and innovative games and gaming experiences as the next generation of developers will be robbed of their ability to access and learn from historical reference material.

**Co-ordination and leadership is needed**

The scope of videogame collecting and curation activity is extremely broad and encompasses the digital preservation and migration of code and bitstreams, the conservation of hardware and peripherals, the collection of merchandising, ephemera and design documentation among many other activities.

A number of museums and galleries as well as a plethora of grassroots projects initiated and operated by fans and enthusiasts around the world have dedicated themselves to preserving, curating and interpreting videogames. The activity of each project and organisation reflects their different interests, resources and expertise.

In some cases, projects are connected through networks such as the European Federation of Games Archives and Museums Projects (EFGAMP) which brings together some formal collections across Europe. However, in general, game collecting, curation and preservation activity is not effectively joined up.

**Connecting Collecting and Knowledge Exchange**

A particular area of concern that our research highlighted is the considerable absence of collaboration and knowledge exchange between heritage and memory institutions, the videogames development and publishing industries, and private collectors and videogame historians.

We identify this lack of cross-sector and inter-project connections and dialogue as a key issue because the scope of videogame preservation, curation and collection activity is necessarily broad.
Videogame preservation requires the collection, care, conservation and interpretation of objects as diverse as hardware and software, ephemera and merchandising, the documentation of design and development processes, and fan and player-produced materials in textual and audiovisual formats.

It is our assertion that the overall project of ‘videogame preservation’ cannot be undertaken by any single institution, organisation or group. Nor will any one approach be sufficient in accounting for the complex technological, social and cultural histories and contexts of videogame design, development and the cultures of play.

It follows that, the overarching project of videogame preservation will need to be broad-ranging and, crucially, distributed.

As such, there is a clear opportunity and, we would argue, an urgent need, to create pathways that connect stakeholders including institutional and non-institutional collectors and industry partners.

Given the distributed nature of the project we outline, it is essential that co-ordination and leadership exists to ensure these activities are complementary to avoid duplication, to identify areas of priority and to share best practice and knowledge.

**Developing and showcasing innovation in curation, preservation and exhibition**

Our research reveals note that there are significant opportunities for innovation in videogame exhibition and interpretation.

For instance, we note that maintaining the long-term playability of videogames may not be the only, most useful, or most significant property. As such, while work on future playability must continue, in order to continue to innovate and push the boundaries of videogame exhibition and interpretation, it is essential that collection and interpretation activity should focus on the uses of materials that locate game making and playing in their social, cultural and temporal contexts.

Such work may include, but is certainly not limited to, the preservation and exhibition of design documentation. Both the National Videogame Museum and Ritsumeikan Center for Game Studies (RCGS) have staged exhibitions showcasing the artefacts and process of paper-based, hand-drawn game design.

Foregrounding the domestic contexts of play, RCGS’s ‘1986’ room setting places the Nintendo Famicom in a Japanese room setting complete with assorted contemporary ephemera and context. Similar examples of non-playable materials forming the cornerstone of exhibits and interpretative strategies are found in ‘Ralph Baer’s workshop’ at The Strong National Museum of Play; the room settings at the Computerspielemuseum in Berlin and the National Videogame Museum’s ‘Dizzy Room’.

**Rethinking emulation, interpretation and access**

The potentially transformative use of emulation is another key area we identify as a priority for future research and practice. While recognising the continued need to explore legal and licensing issues, it is essential that further research is conducted into how emulation and savestates can offer new interpretative strategies and transform access to videogames.

Our research suggests that there are significant opportunities to move the discussion of emulation beyond references to originals and the authenticity of reproduction. Rather than focusing on the adverse effects of the imperfections of emulator performance, we suggest a harnessing of the transformative potential of
emulation. Here, then, we wish to promote the idea of the ways in which videogame emulators allow games and gameplay to be altered from the original experience.

For instance, key among the challenges involved in exhibiting videogames is that they are typically lengthy (perhaps many tens or hundreds of hours in duration); they require a high degree of knowledge and skill to navigate; game structures often mean that without being proficient, a player will not be able to progress; non-linearity means that not all parts of a game can be accessed in a single playing by even an adept player.

As many emulators offer the ability to arbitrarily save progress - effectively freezing the game and allowing the exact state to be recalled - it is possible to create new routes through complex, challenging, non-linear, sprawling games.

In positively utilising these new ways of using games, curators and exhibition designers are presented with a new set of tools to imaginatively present gameplay in new and different ways.

Revealing regional, local and hyper-local videogame histories
A large amount of current videogame history is written with a US focus that effectively silences the important local histories of other regions. By way of example, the ‘great videogame crash’ will be familiar even to those with but a fleeting interest in videogame history. A marketplace decimated by low-quality products (with the blame often unfairly laid at the door of the Atari 2600 conversion of E.T. and Pac-Man) and shattered consumer and retail confidence is reborn as Nintendo releases its NES console.

While this is already an oversimplification, it is also a narrative that describes the distinctive North American situation and not that in the UK and Japan where different market, retail and consumption practices meant there simply was no crash.

Across the world, there are countless online and offline projects dedicated to documenting and revealing the hidden histories of specific regions, periods and platforms. Many of these projects are driven by the passion and enthusiasm of small groups and individuals and often operate with limited access to funds or through the continued support of communities of similarly committed supporters.

Of course, as videogaming is global, it is essential that we are also able to account for the flows of designs, playing practices, and products across and between national boundaries, contexts and markets. It is through the practices of localisation and transition to differing national broadcast standards that some of the most important and under-researched transformations of videogames take place.

The existing work of the RCGS and Computerspielemuseum on recovering domestic contexts of play immediately suggests opportunities for international collaboration, co-curation and the showcasing of distinctive regional patterns and histories.

In order to develop a truly global approach to videogame history, it is essential that mapping and co-ordination occurs at both national and international levels.
2. KEY PROJECT PARTNERS

The National Videogame Museum
The NVM is based in Sheffield, UK. Originally established as the National Videogame Arcade in Nottingham in 2015, it is now working toward accreditation as a Nationally-styled UK museum.

Our mission is to collect, preserve, exhibit and interpret videogames for everyone. Connecting the past, present and future of videogames, the NVM will inspire creative play and learning experiences which facilitate emotional, intellectual, social and creative development. Our aim is to create innovative and inclusive ways to engage audiences in the collection, and in doing so confront many of the accessibility challenges that videogames present. Recognising the lack of diversity present in both the workforce and content of the industry as a whole, the NVM seeks to inspire new people to make new kinds of games. We will do this positively, evangelising the making of videogames as an activity that’s intrinsically valuable as a means of self-expression.

Bath Spa University
Bath Spa University is where creative minds meet. We teach and research across art, sciences, education, social science, and business. The University employs outstanding creative professionals who support its aim to be a leading educational institution in creativity, culture and enterprise.

Ritsumeikan Center for Game Studies
The Ritsumeikan Center for Game Studies (RCGS) was founded in April 2011, as the only academic research institute for the field of game studies in Japan. The Center conducts technical and general research on a wide range of games and types of playing, from traditional toys to games using the latest technology. It aims to form a network of game study locations both domestically and overseas, taking advantage of our strength as a large comprehensive university and being located in Kyoto, which is the birthplace of the Japanese videogame industry. The Center’s mission is to take a leading role in mediating with governmental agencies, public institutions, game-related corporations and relevant organizations in order to further promote industry/academia/government collaboration. To achieve this mission, researchers from a wide range of fields such as humanities, social sciences and informatics promote the research projects.

Funding and Support
The collaboration between the National Videogame Museum, Bath Spa University and the Ritsumeikan Center for Game Studies, the underpinning research and publication of this White Paper is supported by a SSH Connections award from the ESRC through 2019-20.
3. BACKGROUND

Although there are a large number of groups, organisations, private individuals and enthusiasts all dedicated to the history and future of videogames, some foundational issues still require consideration.

The scope of game preservation
There is no clear consensus on what game preservation means.

- What is the scope of the activity?
- What could or should be collected and preserved?
- How can these materials be exhibited and made accessible?

At present, the answers to these questions are shaped by a combination of institutional priorities and individual interests. A product design collection might be most interested in specific hardware objects such as joysticks, control pads, consoles and computers. Yet, for musicians concerned with soundchip designs, access to physical gaming hardware might be comparatively unimportant.

For researchers, future developers and historians interested in programming, access to sourcecode may be of utmost importance while such materials may be of less value to projects showcasing the development of visual art or animation, for instance.

For those wishing to better understand the ways games have been written about or advertised, collections of print and online gaming magazines will be essential, while cultural historians looking at the phenomenon of gameplay spectating and celebrity on Twitch or YouTube will wish for archival collections of recorded and livestreamed gameplay and comments channels.

Alongside, there are completist collectors seeking to uncover and document every game for a given platform including those that were cancelled while in production and prior to commercial release.

Inclusive and distributed
Game preservation is almost by nature a distributed project. The sheer range of beneficiaries and users and the variety of materials that potentially fall within the scope of game preservation make it clear that we must be broad and inclusive in our strategising and planning, with no single approach or area of interest taking precedence.

How to play?
Play and interaction seem so central to defining what videogames are as a form that it is often taken for granted that maintaining long term playability should be the objective of game preservation.

For longterm play, there are presently two options: original hardware or emulation.

Original hardware
Using original hardware might appeal to the purist in providing access to the look and feel of specific systems and controllers or even to the experience of protracted waiting times as games slowly load from cassette tape.
The problem is that the original hardware simply will not last forever. Controller microswitches, solenoids for vibration functions, and plastic housings, along with the cartridge contacts and connectors used for removable software or memory backup systems are all subject to wear and tear and failure over time and through normal usage. The unavoidable fact is that, in time, it is inevitable that present and previous generations of gaming hardware will wear out, malfunction and cease to operate.

And it is not just the consoles and computers that are at risk: the games themselves are vulnerable, too. All that data is stored on physical media like cassettes, CDs, DVDs and cartridges. Semiconductors and EEPROMS used to store program data in game cartridges or on arcade boards may fail due to the effects of thermal conditions over time. Battery-backed memory used to store player progress is volatile with data lost as batteries expire. As anybody who has experienced a hard disk failure or a chewed up tape will know, the reliability of physical media or ‘data carriers’ mean that data are, in fact, remarkably fragile. The Software Preservation Society estimate a 20-year lifespan for the 3.5” floppy disks that were the mainstay of amateur and professional game distribution throughout the 1990s.

The history of computing is a history of hardware systems and physical media that are all well-passed their expiry date. The original hardware is living on borrowed time and simply cannot be relied on in the long term.

**Emulation**

Emulation offers one solution to the limited lifespan of original hardware, data carriers and software. Essentially, emulation involves creating software for one computing platform that mimics the behaviour of another. A Sony PlayStation emulator allows a modern PC to run a copy of wipEout without the need for the original console or CD-ROM disc.

And if that sounds almost too good to be true, then perhaps it is! Although the creation of emulators has not been successfully challenged in law and is typically considered a fair use act of reverse engineering, operation of an emulated system may require access to code that is protected under copyright.

This may include - as in the case of the PlayStation - proprietary ‘BIOS’ code required for the original system/emulator to run. And getting the game data from a CD-ROM, or DVD, Blu-Ray or cartridge, very often involves circumventing Technological Prevention Measures (aka ‘copy protection’).

While much of the existing discussion around videogame emulation has tended to focus either on the authenticity of the reproduction of an original experience or the legality of its use, we note that there are significant opportunities for innovation in exhibition and interpretation offered by emulation. By allowing access to videogames and play in entirely new ways, e.g. by allowing players to effectively ‘fast forward’ or ‘rewind’ through lengthy, non-linear game structures by using saved game data, emulation offers curators and exhibition designers a new set of tools to push forward their practice and rethink videogame exhibition.

**Which systems?**

It is important to remember that many emulators are developed by amateurs, fans and enthusiasts. This means that coverage and quality can vary considerably. Some systems are well-covered with multiple emulators offering compatibility with all or different subsets of game libraries, while other systems have extremely limited compatibility or have no functioning emulators at all.
This is important because, since the first home console, the Magnavox Odyssey, was released in 1972, there has been a steady stream of new systems coming to market. There are presently nearly 100 discrete home console systems (not including minor variations or clones). Adding handheld systems, dedicated consoles hardwired to play a single game, home computers, PCs, tablets, mobile devices and coin-operated arcade systems, we soon see the potential for platforms to be forgotten.

**Remembering and forgetting**
In recent years, a number of manufacturers have released new versions of old gaming hardware. Nintendo’s NES/Famicom Classics, Sony’s PlayStation Classic, SNK’s Neo Geo mini, Capcom’s Home Arcade Retro Console, each offer the promise of solving the problem of keeping old games playable.

While from a consumer’s perspective, they offer value and the convenience of modern digital connections such as HDMI, from a preservation and game history perspective, they crystallise many of the issues above. These systems run on emulation and, as such, are approximations of the original experience. The hardware is physically different and usually smaller. Not only are these already mainstream, popular and commercially successful systems, they offer only a small fraction of the total number of games available for the original platforms. As such, they reaffirm the success and popularity of the already successful and popular while continuing to silence the obscure and less well-known.

**Videogame preservation as an active crime scene: Action on IP**
Notwithstanding the limitations above, removing the reliance on dwindling supplies of increasingly fragile consoles and data carriers means that emulation is considered by many to be the only viable long-term approach to maintaining playability. Of course, the open secret is that accessing games is trivially easy for those so-minded and there are numerous sites on the open Internet that host vast collections of illegally ripped game files. As such, it is essential to facilitate dialogue between intellectual property rights holders and game preservation practitioners to develop frameworks for the legal use of games under emulation.

**The role of play**
Of course, although it is the unstated foundation of much current game preservation and exhibition work, being able to play games in the future is not essential for all use cases and stakeholders. For some groups, having access to archival recordings, replays and commentaries on styles of gameplay may be of more value than the continued ability to play those same games.

Some stakeholders will be interested in how games were played, the meanings made of them by players, and the social interactions that support and sustain gameplay. Here, documentation of the ways social media are used alongside games to create collaborative spaces for building and sharing will be essential.

If one’s interest in an online space such as World of Warcraft is in social dynamics, the staging of events and protests, or the spread of in-game viruses, documentation such as gameplay captures, archived blog posts, and news reports provide the only access to events already passed.

For those concerned with design processes or the management of large-scale development projects, the value of access to development documentation, oral histories and interviews with creators and makers may well outweigh that of continued playability of the games themselves.

As such, we suggest that, while certain techniques and approaches based around maintaining or reconstructing long-term playability have dominated the early stages of game preservation, it is essential to
move beyond software preservation alone. It is important that we continue to innovate in the exhibition and interpretation of videogames and that we remain sensitive to the diversity of use cases for historical game materials.
4. PRIORITIES AND KEY AREAS OF FOCUS

At the culmination of the first phase of our research in 2018, we published a White Paper entitled Game Over? Curating, Preserving and Exhibiting Videogames. In the document, we identified six priorities for future research and practice.

Through our continued work and the vital collaborative partnership between the National Videogame Museum, Bath Spa University and the Ritsumeikan Center for Game Studies, as well as with colleagues across the US and Europe, we have identified two further priorities.

These new priorities focus on nurturing and showcasing innovation in the curation and exhibition of videogames; and the revelation of the ‘hidden histories’ of regional, local and hyperlocal videogaming and gaming culture.

PRIORITY 1
Increase formal international collaboration & networking
Best practice in curation and interpretation needs to be shared in a coordinated way. The potential for international knowledge exchange is vast and largely untapped outside of academic journals.

The means for aggregating, curating and distributing the knowledge and experiences of the varying participants needs to be published in a means that is accessible to all organisations. Whilst academic mailing lists (such as that operated by the International Game Developers Association (IGDA) Game Preservation Special Interest Group) and journals (such as Game Studies and the International Journal of Digital Curation) exist and enjoy rich participation, they are not only focused on game history, heritage and preservation and are not primarily intended for consumption beyond the academy. Similarly, the message boards of enthusiast collectors do not always reach the more specialist institutional audiences.

We think a role exists for a group curated, online publication that can aggregate relevant materials for the community at large and provide a point of focus for discussion.

Additionally, if the community can support it, we suggest using real-time messaging (slack / twitter) to nurture further interest groups and grow relationships. Whilst not suitable for all, such groups can be a powerful site for seeding new collaborations.

KEY ACTIONS

- (inter)national collaboration and networking activity should ideally be facilitated by a national coordinating body in each territory.

- Establish digital networking groups (real-time messaging / slack / twitter) and streaming events to instigate more informal activity.

- Having established working groups, nurture the development of cross-sector events, bringing practitioners into direct contact with each other.
PRIORITY 2
Coordinate development of efforts to address challenges of existing IP policy on game/digital preservation

Given the complex state of copyright legislation and the paucity of understanding of its application (both from rights-holders and the exhibition/preservation community) it is of little surprise that a clear approach is lacking.

Concepts such as ‘abandonware’ and a lack of clear understanding around exhibition have led to confusion and to the danger of large projects being based around assumptions of presumed goodwill rather than clear legal agreements.

Stakeholders need to collaborate to address the challenges and restrictions raised by current copyright legislation.

There is a need to document and understand current legislation in IP/copyright as it pertains to game and digital preservation and exhibition work in individual territories. This should draw on experience from other media legislation and practice.

International advocacy groups such as EFGAMP should play a lead role in driving this debate, education and associated lobbying activity.

KEY ACTIONS
- Research and document the current IP arrangements in participating territories.
- Establish resources to advise both rights holders and exhibitors on IP best practice.
- Support, extend and develop the EFGAMP network to co-ordinate reform lobbying across Europe (and beyond) involving a representative collection of stakeholders.

PRIORITY 3
Audit and map current preservation and exhibition activity

There should exist a definitive repository or map of videogame history projects and collections.

There is no shortage of collection, exhibition and cataloguing work in progress around the world. This activity needs to be mapped and collated with emerging processes and established standards shared.

We propose a wide-scale audit of game preservation, curation and collecting activity that will lay the foundations for the coordination of efforts. This audit exercise should act as a catalyst for new collaborations across and between projects, institutions and private collections.

In addition to capturing the holdings of different groups and their cataloguing processes and standards, it is essential that this audit accounts for different institutional/organisation/personal motivations and collecting priorities, funding and sustainability, and the frameworks (e.g. legal, administrative) within which they currently operate.

KEY ACTIONS
- Establish partner groups to coordinate this activity, securing funding to drive this forward.
This funding should include significant contribution from the current, commercial games sector, creating a formalised stake for the sector in its own historic value.

This audit should reflect the activity of all kinds of collectors.

The results of this should be open-access.

It is crucial that robust, extensible and open cataloguing and metadata schemas are developed alongside this activity.

The audit should include case studies and documentary materials to aid interpretation.

PRIORITY 4
Further develop videogame literacy programmes for a broader range of audiences
Since the 2011 Livingstone-Hope ‘Next-Gen’ review commissioned by NESTA, ‘games literacy’ has often been conflated with STEM / STEAM studies. Here we use it in a different, but complementary sense. We suggest games literacy is concerned with the understanding and appreciation of games, both in their playing and their making. Furthermore, we see games literacy as being a project that must address multiple audiences. Parents, young people, professionals from other aligned creative industries and the culturally curious general public are key.

It is imperative that a way is found to share and develop the understanding of videogames beyond the worlds of development, academia and ‘gamer’ culture. There exists an opportunity to explore creating a number of different ‘trusted voices’ across a variety of different media forms. These might include magazines or broadcast and online media. It is vital that the collective understanding of videogames not be limited to specialists.

This heightened understanding can also lead to increased commercial opportunities as commissioning bodies from other creative sectors grow to understand how they can work with videogames in their respective fields.

Coordination in the development of these efforts, particularly in the avoidance of duplication, would be of enormous benefit.

KEY ACTIONS

- Stakeholders should coordinate where appropriate to develop and deliver further game literacy materials to support their collections and activities. These should address differentiated audiences and their distinct concerns (e.g. potential commissioners, funders, parents, teachers, young people).
- Develop approaches across different media forms in order to maximise reach. These might include periodical magazine/journal, traditional or online broadcast media, podcast, for instance, or combinations thereof.

PRIORITY 5
Support and enhance cross-sector dialogue on videogames and culture
There is an increasing diversity of makers, audiences and applications for videogames outside the mainstream, yet there is an absence of fora within which the games industry and broader creative sectors
can communicate. A mutual lack of understanding is leading to missed opportunities. Stakeholders need to proactively conference, network and drive dialogue with one another in order to discover and leverage opportunities for collaboration.

Institutions should support and encourage grass-roots organisations already instigating such activities. Strategic activity needs to be coordinated and include representation from a diverse range of stakeholders.

KEY ACTIONS

- Stakeholders should coordinate to create a programme of networking events. These should maintain a regularity such that they can reflect current concerns and begin to create new, persistent organisational links. Where possible, such events should include international representation.

- All activity should be captured and published, feeding into ongoing development and discourse. In turn, this activity could feed the publication activity cited in Recommendation 4 above.

- Any such activity should include diverse representation from all groups.

- Stakeholders should coordinate to create an annual conference of record, with best practice and current thinking being formally recorded and disseminated.

PRIORITY 6
Further develop and raise awareness of preservation-friendly game development practices

An awareness of the importance and value of preservation within the development community of videogames needs to be developed in a number of ways. Whilst some progress has been made in the last few years around acknowledging the cultural value of the work that has been created, this needs supporting with actionable guidance.

Developers and publishers need to be given toolkits to help them preserve the work they have created in sustainable, extensible ways. These might build on the kinds of cultural games literacies espoused in recommendation 4, but importantly extend to providing practical processes that they can implement.

Both in training and in professional practice, we need to encourage game developers to preserve not just their codebase, but other surrounding artefacts and documentation from the process of their work. By creating preservation-friendly development pipelines and processes, the development community can begin to internalise the value of its work and greatly assist in heritage efforts and actively prepare and plan for the future.

KEY ACTIONS

- Identify a preservation framework that will document the range of materials of value in the preservation of videogames. Importantly, extending the scope of these materials beyond the software product to include production ephemera, fan materials, newly created critical reflections, for instance.

- Develop and promote best practice in preservation-friendly game development across practitioners and training providers at all levels.

- Create training tools for use by the professional community to upskill in best-practice in this area.
In addition to these, we have added two new areas of priority for research and practice in videogame history and heritage.

**PRIORITY 7**

**Develop and showcase innovation in exhibition and interpretation**

Given the range of potential use cases for historical videogame materials, and the scope and variety of those materials that we note above, it is essential that further research is focused on the development of new modes of exhibition and interpretation.

As we have noted, for many stakeholders, the long-term playability of videogames may not be the only, most useful, or most significant property. Indeed, there are already many examples of videogame exhibitions that make effective use of non-playable materials including design documentation (RCGS and Bandai Namco’s ‘Galaxian-Galaga-Gaplus’ exhibition) and the domestic contexts of play (NVM’s Dizzy Room; RCGS’ ‘1986’ room setting).

While work on future playability must continue, in order to continue to innovate and push the boundaries of videogame exhibition and interpretation, it is essential that collection and interpretation activity should focus on the uses of materials that locate game making and playing in their social, cultural and temporal contexts.

The potentially transformative use of emulation is another key area we identify as a priority for future research and practice. While recognising the continued need to explore legal and licensing issues, it is essential that further research is conducted into how emulation and savestates can offer new interpretative strategies and transform access to videogames.

**KEY ACTIONS**

- Conduct further research on the current and future users of historical videogame materials in order to identify the scope of significant materials
- Develop a shared resource showcasing innovative approaches to the interpretation of historical videogame materials
- Enhance connections and collaboration between videogame collecting, exhibition and interpretation projects and related socio-cultural collections for shared context

**PRIORITY 8**

**Strengthen the connections between global and local videogame histories**

Much existing game history is written with a US focus that silences the important local histories of key players like the UK and Japan. It is essential that we find ways to ensure that the hidden histories of national, local and hyper-local videogame development and gaming culture, are effectively collected.

Of course, there are projects, groups and individuals dedicated to recording these histories. The Play It Again Archive project, for instance, seeks to recover the histories of the 1980s ‘digital games that make up a significant but little known chapter in the history of the moving image in Australia and New Zealand’.

Similarly, projects such as the Game Preservation Society turn their attentions to the histories and hardware
of Japanese arcade machines as well as platforms such the CD-ROM based home computers that are typically overlooked in favour of the more commercially successful and visible consoles.

However, while our research has uncovered a plethora of projects of different scales, the simple truth is that, even if we take the UK alone, it is currently impossible to account for the range of videogame history, heritage, interpretation and collection projects operating within and outwith the heritage sector.

Mapping and connecting these projects is an urgent priority. This will allow the recognition and sharing of the knowledge and expertise of stakeholders; the identification of collections, resources and potential gaps in knowledge and collecting activity; and will help build a critical mass to support attracting further funding for projects.

KEY ACTIONS

- Identify, develop and connect local and area-specific game history and heritage projects
- Enhance international collaborations to explore both domestic markets, production and consumption and the transnational flow of videogames and practices of making and playing
5. NEXT STEPS

VHS: Videogame Heritage Society
A Subject Specialist Network for videogame preservation
Our research leaves us convinced of the value of clearly actionable, easy to access activities that can tangibly forge links, develop understanding and foster collaboration between stakeholders in this area.

Fully accounting for the breadth of gaming histories necessarily involves working with an extremely wide variety of complex digital, physical and hybrid objects. These include software and hardware devices, merchandising and collectibles, design documentation and fan-produced ephemera.

Given the scope of these materials, it follows that knowledge and expertise in curation, conservation and interpretation will be distributed across numerous institutions and, crucially, will exist outwith formal institutions. Private collectors, enthusiasts, independent developers and many others will have an important role to play.

As such, we argue that videogame heritage activity must be supported by a structure that is able to work with, and for, this diverse range of stakeholders regardless of whether they operate within organisations and regardless of size.

This White Paper reports on some key activity already undertaken. It concludes by detailing the launch of the Videogame Heritage Society, a new Subject Specialist Network (SSN) led by the National Videogame Museum that seeks to foster new partnerships and collaborations and deliver on the key areas of priority for research and practice.

A new network for videogame heritage
In February 2020, with the collaboration of a number of institutions and independent collectors, we are launching a Subject Specialist Network (SSN) focusing on videogame preservation, exhibition and interpretation.

The Videogame Heritage Society (VHS) will be led by the National Videogame Museum and open to any organisation or individual with an interest in the preservation, curation, exhibition and interpretation of videogames and gaming history.

Surprisingly, the VHS network is not only the first SSN in the UK dedicated to videogames, but also the first SSN with an expressly digital focus. Indeed, as the SSN Consortium note, there are no other digital-specific SSNs operating in the UK presently.

SSNs provide a helpful, agile and open structure for convening interested parties and for sharing best practice, knowledge and expertise. Whilst maintaining a lightweight structure, and requiring no legal constitution, SSNs are recognised by a number of bodies as fundable organisations.

Perhaps most usefully, the model of the SSN is fundamentally inclusive by design. An SSN aims to include not just funded, established memory institutions, but also smaller independent collectors within whom much knowledge is kept.
What is a Subject Specialist Network?

According to the SSN Consortium (2020),

‘The remit of SSNs is not limited to museum activity – the majority work across a multitude of sectors, including archives, libraries, and community organisations, allowing for a rich tapestry of knowledge and interpretation skills sharing.

SSN activity extends widely across areas including advocacy, professional development, conservation and wider collections management skills, funding, organisational development, in addition to the important roles of networking and training. Finally, SSNs support activity from grass-roots level upwards, engaging with professionals and volunteers on the ground, and supporting the diversification of collections activity and access.

SSNs are about people – those who deliver services and who access and work with collections.

As a collective, the SSNs respond to the needs of thousands of professionals and volunteers working across many different sectors. We provide those working with collections a voice and access to the best available specialist support. Our strengths lie in our diversity and ability to work from grassroots upwards through many different mechanisms including advocacy, professional development opportunities, research, and digital access.

Ultimately, SSNs strive to ensure that the workforce has the skills and knowledge to deliver their remits, providing better care for collections and increasing access and use of those collections. Although our relationship is with individuals, our impact is at organisational and policy level.’

In our view, it is essential that the membership of the VHS should be as inclusive and wide-ranging as possible. It is our aim that the VHS should include members from the heritage sector; mainstream and independent videogame publishing and development; journalism, criticism and commentary, game development and game studies education at all levels; game collecting and archiving, and beyond.

Our intention is that the VHS will act as a convening point, bridging the knowledge gap between institutional and independent collecting organisations and cultures and facilitating a free-flow of knowledge and expertise. Fostering new partnerships and collaborative action is central to the mission of the VHS.

In our 2018 White Paper, we foregrounded the potentially adverse impact of uncertainty and a lack of knowledge about the legal issues surrounding the collection, preservation and public exhibition of videogames material. Our continued research has served only to amplify the significance of tackling this situation. Indeed, we recognise that the inclusive, cross-sector composition of the SSN might, in itself, present a challenge as there can be ‘formal’ bodies interacting with the independent community. Tensions around copyright, covenant and the perceived legitimacy of activities can sometimes paralyse meaningful conversation before it can begin.

We believe that communication and developing a shared set of common interests and objectives is key and that the SSN, with its emphasis on openness, collaboration and knowledge transfer, is an effective way of enabling such discussion without compromising individual institutions.

What the VHS will do

At launch, the VHS will provide a website as a centre for the network. initially supported by a part-time network coordinator, it will publish and provide the following:
Invited articles from SSN members
Aggregated articles of interest from the wider videogame history and preservation community
A collaboratively-authored bibliography and resource list for videogame history and heritage materials
A forum for registered members to communicate and share ideas
An event schedule, coordinated with members
An email newsletter aggregating key information

The VHS will also drive priority activities within specific areas. At launch, a key example of this is a project that the NVM is leading with colleagues from Queens University, London and the broader videogame sector.

**Developing a Toolkit for legal /IP issues**

One of the thorniest and most ambiguous areas surrounding collaborations between videogame developers / rights holders and museums / collectors is that of IP. Our research has taken us across the world and we have conducted interviews with curators, collectors, academics and practitioners from the UK, Europe, Japan and the US. Of course, each project and individual identified a range of challenges and opportunities relevant, and sometimes specific, to them and their context. However, one consistent theme raised by each and every stakeholder was the urgent need to tackle the myriad legal issues involved in the preservation, collection and interpretation of videogames.

For decades, numerous videogame preservation and exhibition activities have operated in a variety of legal contexts and frameworks ranging from full license agreements to tacit ‘don’t ask, don’t tell’ arrangements.

On many occasions, we heard the frustrations of curators, collectors and exhibition designers that there were no standard licensing agreements in place covering such activity. One consequence of this is that negotiations between those wishing to exhibit games and the owners of IP effectively start from square one each time.

As such, a key area of activity for the SSN is commencing the development of a legal framework for exhibition. In order to drive this forward, the SSN is already benefiting from the expertise of colleagues from the Law School at Queens University, London, and with members of the videogames industry.

By creating an inclusive, cross-sector working group representing the interests all the widest range of stakeholders, we hope to be able to develop a toolkit of practical guidance, advice and documentation that will support collaborative preservation activity.

For more further information, downloadable resources, news about forthcoming events and details on how to join the Videogame Heritage Society, please visit:

vhs.thenvm.org