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IP Office of the Future:
Digital Transformation

By the IPO of the Future Think Tank

International Trademark Association

Executive Summary: Checklist for Heads of IP Offices on Digital Transformation

Digital modernization or transformation of systems and operations underpinning Intellectual Property Office (IPO) operations is complex. These systems span extensive front-office e-filing portals, back-office examination, and records management systems. Modernizing such critical and complex infrastructure is a formidable task, technically, operationally, and strategically. Looking to the future of developing and applying emerging technologies can be equally daunting.

This report is motivated by the recognition that Heads of IP Offices can benefit greatly from exchanging best practices to drive digital modernization and transformation effectively within their tenure and beyond. For many who have led major projects, a common reflection has been, ***"What I wish I had known about digital modernization or transformation in an IPO before getting started."*** This report seeks to bridge knowledge gaps by:

- Identifying the specific operational and organizational characteristics of IP Offices;
- Showcasing experiences of digital modernization and transformation efforts;
- Synthesizing lessons learned; and,
- Preparing IPOs for modern and emerging technologies.

Checklist

This checklist synthesizes the knowledge, takeaways, and lessons learned from Heads of IP Offices who have undertaken or are pursuing digital transformation. It is designed as a quick-reference guide for a CEO, Director General, or Head of an IP Office to consult when planning and executing such important programs. Each item in this checklist captures an essential aspect of digital modernization or transformation, providing a concise reminder of what leaders should focus on. While not every item will apply equally to every office, together they form a framework to inform decision-making and strategy. The bullets in italics are paraphrased quotes that capture some hard-earned lessons.

1. **Take Action:** Resistance to change is real, the stakes are high, and digital transformation could happen only once in a generation for an IPO. There may be strong forces to either *"not start this right now"* or spend more time analyzing the costs and benefits. Likewise, there have been some spectacular failures in government digital modernization projects which amplify risk aversion. To determine when appropriate action is necessary, IPO leaders need to strategically balance these resisting views against increasing legacy risks and costs, cybersecurity risk, and client and partner needs.

   "Hoping your legacy front and back-office IP systems continue performing indefinitely is not an advisable strategy."

2. **Set the Vision**: Articulate a clear vision for a modern, future-ready IP Office. In a complex IP Office transformation, a clearly articulated destination helps prevent strategic drift and keeps difficult trade-offs anchored to purpose. Digitization and any other digital initiatives are not just IT projects; they normally become organizational transformations.

   "We are here to serve the most innovative and creative people in our countries; we owe it to them to have robust systems in place to help them meet their aspirations."

3. **Own the Governance:** Stay actively involved in the transformation initiative from start to finish. Lead governance that keeps you informed and in control of strategic direction.

   "The IP system is highly complex and dynamic; continual oversight will help you lead through ever-evolving scope, costs, and timing considerations. You cannot delegate governance leadership."

4. **Budget Accordingly:** Leaders should be realistic about budget from the outset. If resource constraints are serious, they need to be confronted early; otherwise, there is a real risk of starting something that cannot be finished.

   "Have some humility about the ability to forecast overall project costs and scope before the modernization is launched, and budget accordingly."

5. **Collaborate and Benchmark Internationally:** Don't plan in isolation. Engage with IPO counterparts to gather the latest developments, best practices, and lessons learned. Likewise, international engagement is also a safeguard against false uniqueness. IP systems are highly regulated and internationally aligned, so there is often less room for unilateral change than leaders initially assume.

   "Don't reinvent the wheel. Lean on your IPO counterparts, we are all here to share experiences. While "one size does not fit all," and there are no universal solutions, there are many commonalities across IP Offices resulting in shareable, insightful, and hard-earned lessons learned."

6. **Decide on Big Bang Versus Minimum Viable Product (MVP):** Perfection is the enemy of progress. Your clients and staff may demand complete functionality on day one, replacing legacy IP system functionality that might have been developed over decades. Negotiating the MVP will be intensive and trade-offs will need to be made. Moreover, should delivery challenges emerge, there will be pressure to reduce scope below even the "minimum" threshold which should be fully considered.

"Aiming for perfection may mean that customers and staff wait a very long time before they see anything launched. The most frequent cause of program failure is excessive duration, as support wanes, leadership changes, government priorities or pressures evolve, funds dissipate, and talented people may want to move on."

"MVP trade-offs will lead to workarounds and operational implications, plan accordingly and build the resources to address workarounds."

7. **Engage Stakeholders Early and Continuously:** Along with IP Offices, IP professionals are an integral part of the IP ecosystem, and clients are served well when we work together. Proactively involve both internal and external stakeholders throughout the process. Start with early consultations; ask your examiners, IP attorneys, support staff, frequent applicants, and even occasional users what they need from a new system. It is much better to incorporate feedback during development than to face resistance at or post launch.

   "IP stakeholders can be your greatest champion…or harshest critic."

8. **Build Cross-Functional Teams:** Break down silos within your office. Transformation requires expertise from IT, examination, business operations, legal, client service, finance, procurement, HR, and communications. It also helps the organization learn and adapt as a whole. This supports change leadership, mitigates difficulties arising elsewhere with the office, and builds a sense of belonging and joint ownership, it's "our system."

   "Modernization projects are transformational and affect all parts of the IPO, therefore, everyone should be involved as we all own the outcomes."

9. **Champion Transformation:** Address fear, cynicism, and inertia by allowing space for teams to adapt and by celebrating incremental progress.

   "There will be some long stretches of development, starts and stops, and the feeling of 'running continual, successive marathons.' Everyone will be looking for steadfast engagement and leadership."

10. **Operate in a Dynamic Environment:** We are operating in a world of continual change, international processes as well as IP laws and jurisprudence will not stand still throughout an entire program. Likewise, new technologies will inevitably emerge that may cast doubt on earlier decisions. That should not become a reason to delay action, as waiting indefinitely will only prolong dependence on outdated systems.

    "The world will not stop spinning for you, IP policies will shift, and new technology will always be released; you must embrace this dynamic environment and move forward."

11. **Prioritize Foundational Systems and Architecture:** Ensure you first modernize the core, foundational systems and architecture. This includes the primary IP rights management system (patent/trademark database and workflow), document management, and classification/search systems. In doing so, ensure that the system is built to support future innovations, such as AI, data access, etc.

    "Don't continually chase after the latest technological trends, get the foundations right first, the rest of the 'new stuff' will benefit from and build on this solid backbone. Move forward but be digital-first and AI-ready."

12. **Embrace Artificial Intelligence… with appropriate caution:** AI has gained traction in recent years and is now being applied extensively in the innovation ecosystem, by the IP professional community, and by IP Offices. Building and retaining the technical skills necessary for transformation is a persistent challenge. IPO leaders must invest in continuous learning, upskilling internal teams, and developing new roles that bridge legal and technical expertise. Likewise, institutional memory and domain-specific knowledge must be preserved while integrating new capabilities in AI, data science, cybersecurity, and user-centric design. Adapt your organization to the new processes and tasks.

    "With AI, the future is now; new leadership skills are required at all levels of the IPO to serve clients, many of whom are deploying AI quicker than the IPO. While we don't know what the future will bring with continually evolving technology such as AI, we can build adaptable teams who will embrace new technologies for the benefit of clients and staff. Even if you are taking incremental steps now, they need to be digital by design and AI-ready."

    "The international IPO community is experimenting and deploying AI at an increasing pace; many are in a position to share experiences. Stay connected."

13. **Plan for Long-Term Resourcing Beyond Your Term:** Heads of IP Offices usually have fixed terms. Assume that the transformation program will outlast your tenure and plan for that reality. Secure commitments for long-term funding, perhaps secure a multi-year budget allocation or a ring-fenced fund from accumulated fees if possible. Long-term planning should assume that digital transformation is never truly finished. Even after the initial program is complete, leaders will need to preserve capacity and funding for continuous improvement, new capabilities, and the responsible adoption of emerging technologies.

    "Transformation will likely outlast your leadership term, plan accordingly and build sustainable teams, resources, and structures that will continue."

14. **Master Data Management:** Recognize that IPOs generate and are stewards of vast amounts of data, both for the public good and to manage IP rights that could last for a lengthy term or indefinitely. Develop a detailed data migration plan early. Understand that migration might be one of the longest lead-time activities; allocate sufficient time and expert resources to it. Also critical is that you need operational performance data from day one to be able to monitor and manage through what might be a prolonged and disruptive stabilization period.

    "Data is the new gold, fueling the digital economy, technological evolution, and internal operational excellence; treat it accordingly."

    "Ensure you as a leader have unfettered access to production data to help you through the stabilization period and beyond, and that your clients also have access to their files and data."

15. **Manage Risk:** Embed risk management into the project culture. Identify major risks (technology, operational, financial, and legal) at the outset and continuously update the risk register. Consider a third-party, arms-length assessment of the entire system, training, operations, and engagement before making the final decision on launching. Another common source of program failure is excessive duration. As timelines stretch, support can weaken and attention can drift. Leaders should keep the cost-quality-time balance under constant review and guard against avoidable delay.

    "Surround yourself with honest advisors who are capable of providing all news, good or bad; welcome the auditors, assessors, and neigh-sayers before launching."

16. **Plan for Sustained Investment and Scaling:** Develop a long-term strategy for sustaining and scaling the new systems. New systems will require new ways of working, planning, and strategizing.

    "Modernization doesn't end at go-live, it's just a new beginning. Be prepared for the fact that you will never finish developing your systems."

17. **The Moment of Truth:** With all of the governance, planning, development, risk mitigation, testing, training, change leadership, third-party assessment, etc., there is a moment of truth when you will have to decide on when and how to launch.

    "Balance multiple lines of evidence, advice, recommendations, and points of view to determine the launch strategy."

    "No amount of testing can fully simulate the complexity and variability of live environments. Early deployment, even if imperfect, enables faster learning and more effective long-term outcomes."

    "There will invariably be challenges post-launch. Expect the unexpected, focus on stabilization, track productivity closely, don't let your backlogs grow, and focus on returning to business as usual."

18. **Pay It Forward:** Do not keep hard-earned lessons to yourself. As you go through your transformation journey, capture the insights, the missteps, the surprises, and the wins, and share them with other Heads of IP Offices. Chances are they are wrestling with many of the same issues. A little candor and generosity can save someone else time, money, and frustration, and strengthen the wider IP community in the process.

    "It is good to learn from your own mistakes, but better still to avoid them by learning from someone else's mistakes. That is, in many ways, the purpose of this report."

1: Introduction and Context

Digital modernization or transformation of systems and operations underpinning IP Office (IPO) operations are complex. These systems span extensive front-office e-filing portals, back-office examination, and records management systems. Modernizing such critical and complex infrastructure is a formidable task, technically, operationally, and strategically. Looking to the future of developing and applying emerging technologies can be equally daunting.

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Most importantly, the sum total of the project team's deliberations, shared experiences, survey results, and lessons learned are synthesized in the above **Executive Summary** that provides a practical Checklist for those planning, initiating, or in the midst of a digital transformation journey.

Crucially, the report acknowledges that ***"one size does not fit all."*** Each IP Office has a unique starting point and context:

- Offices vary by size and workload;
- Some offices are fully independent, others operate within regional IPOs (e.g., EUIPO, EPO, ARIPO);
- Some offices have greater control over resources and decision making while others are part of broader government agencies or have different funding sources;
- Some are well-resourced while others have limited funding or infrastructure; and
- As demonstrated in a survey of IPOs participating in this project, there is a wide range of approaches and capabilities concerning digital transformation and preparing for the future with emerging technologies.

The analysis in this report provides general lessons learned from which individual IPOs could tailor digital transformation strategies.

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Key Definitions: Digitization, Digital Modernization, and Digital Transformation

Term	Definition	Example in an IPO
Digitization	Converting analog/paper-based information into digital format. **Focus**: Data & documents.	Scanning paper patent files into PDFs; accepting e-filings instead of paper.
Digital Modernization	Replacing or upgrading outdated (legacy) IT systems, infrastructure, and tools with current technologies to improve efficiency, reliability, and security. **Focus**: Technology & infrastructure.	Migrating a 1990s patent database to a cloud-based platform; refreshing the front-office e-filing portal.
Digital Transformation	A broader, strategic organizational change that uses digital technologies to fundamentally redesign processes, services, culture, and stakeholder engagement. **Focus**: Organization, strategy & culture.	Redesigning the entire patent examination workflow around AI-assisted search, user-centric design, and real-time data analytics.

Note on terminology: While *digitization*, *digital modernization*, and *digital transformation* are conceptually distinct, as outlined in the above table, this Report adopts a pragmatic approach to terminology. For readability and consistency, these terms are at times used interchangeably, or collectively referred to as "digital modernization," In all cases, the intended meaning should be interpreted in context, recognizing that initiatives often span multiple dimensions (data, technology, and organizational change).

Report Context

This Report is the latest in a series developed by and for Heads of IP Offices.

In April 2019, INTA launched the Intellectual Property Office (IPO) of the Future Think Tank, bringing together twelve current and former IPO leaders to explore how IPOs may evolve over the next 10–20 years.

The resulting report, shared with more than 100 IPO representatives at the INTA Annual and Leadership Meeting, identified key priorities both within core IPO mandates—such as harmonization, pendency, technology adaptation, and resources—and beyond, including stakeholder relationships, service quality, innovation support, research, education, market efficiency, and IP valuation.

Subsequently, the topics addressed by the Report have been the subject of reflection by several IPOs in different regions, and the basis for creating a follow-on project called the IPO of the Future Checklist Project. The resulting IPO of the Future Checklist (Checklist) is a companion piece to the Report and attempts to distill its recommendations into a concise format that can be applied and discussed readily in a range of formats, such as setting medium- and longer-term strategies, onboarding of new leadership, management reviews, time-series comparisons, department comparisons, risk assessment and mitigation, and the like.

In February 2024, INTA published another in the IPO of the Future Report series entitled "Financial Sustainability Considerations for the Intellectual Property Office of the Future Report." This Report examines how IPOs can achieve and maintain financial sustainability, while recognizing the existence of different IPO operating models. The report was intended to answer questions such as what are the strategic components of leadership in the financial domain, and what are the staff skills that need to be built out for an IPO to become financially sustainable. It highlights how IPOs should consider economic cycles and industry trends.

This new report seeks to address one of the main tasks that the Intellectual Property Office of the Future must undertake within its core function: the adoption of new technologies to fulfill one of its principal missions—administering IP registrations. It does so with the understanding that demand for services is steadily increasing and that offices are required to deliver these services in a digital, agile, and consistent manner.

2: Current State of Play for Surveyed IPOs

i. Level of IPO Effort for IT System Management

A survey conducted of working group members revealed important insights on the level of effort directed toward IT management and digital transformation, for example:

- 64 percent of respondents had over 21 IT staff;
- Half of respondents spend 10 to –20 percent of their budget on IT; one fifth spend over 30 percent;
- 93 percent indicated that digitization affected their organizational setup in recent years;
- 100 percent had a national, custom-built system, and half also had WIPO or EPO systems;
- 69 percent had an over-10-year refresh cycle or no fixed refresh cycle.

This level of investment and activity demonstrates how critical digital systems are to IPOs, and the level of effort required by Heads of IPOs to ensure that this vital infrastructure and enabling technologies remain current and fit for purpose.

ii. IT Service Delivery Model

There is a diversity of approaches taken by offices in terms of building internal capacity and/or relying on external vendors for digital transformation. All respondents indicated that they have entirely or to a large extent a national custom-built system, with some also having regional systems such as through the EUIPO and EPO, or through WIPO IPAS. This in-house versus vendor engagement varies widely across offices depending on the specific functionality examined, including infrastructure, application development, security, finance, human resources, and emerging technology development, with emerging technology development and application development more largely reliant on outsourcing.

iii. Biggest Challenges Faced During IT or Digital Transformation

Based on survey results, working group members ranked the challenges that were or could be faced during their IT or digital transformation, from most important:

1. Outdated (legacy) IT infrastructure and systems that are not easily integrated with newer technologies
2. Budget constraints for digital transformation and similar capital investments
3. Limited institutional knowledge to undertake such a large, multidisciplinary, and multi-year transformation
4. Inefficient information and communication technology (ICT) governance, presenting difficulties in aligning ICT strategies and priorities with the overall organizational or government goals
5. Difficulty in finding and retaining qualified ICT experts
6. Navigating evolving complex laws, regulations, and compliance requirements
7. Inability to forecast overall scope, time, and cost of entire project
8. Internal resistance to change, or change fatigue
9. Ensuring compliance and maintaining consistent service delivery for clients
10. Challenges engaging clients and the professional community
11. Establishing effective communication and data-sharing with other national or regional IP offices, and private sector stakeholders

This sets the overall context of challenges faced and the importance of sharing experiences and lessons learned as IPOs consider and work through digital transformation.

3: Specific Challenges Faced by IPOs in Digital Transformation

Not all digital modernization efforts are created equal. Modernizing the IT systems of an IPO presents distinct challenges. These differences arise from the specialized nature of IP operations, including national (and international) legal and procedural frameworks that differentiate IPOs from other government agencies and even from IPO to IPO. Additionally, the absence of commercial off-the-shelf solutions that fully meet the complex and specific requirements of an IP Office means that systems often need to be custom-built or heavily adapted, adding layers of complexity, time, and risk to the transformation journey. Importantly, digital modernization or transformation should be seen as a continual focus of IPOs, there is no end to transformation, but continual improvement.

The remainder of this section highlights distinctive features of digital modernization within IPOs and makes linkages to strategic leadership considerations that Heads of IPOs could consider. Understanding what sets IP Offices apart is fundamental as it will position Heads of IPOs to focus priorities, seek advice from credible and experienced sources, anticipate challenges, and potentially avoid some common pitfalls.

i) IP Offices worldwide share more similarities with each other than with other agencies domestically. Patent and trademark offices operate under analogous substantive principles and international treaties. As a result, their IT systems support similar core capabilities: electronic filing for applications, databases of rights, examination and workflow management systems, publication, and gazette or registration systems.

For an IP Office, there are examples around the world of organizations conducting essentially *similar* business. This international commonality means that an IP Office undergoing digital transformation can potentially learn from or adapt solutions implemented by its foreign counterparts. In addition, interoperability across offices is a real consideration: applicants often file in multiple countries (jurisdictions) and can expect a certain level of consistency or connectivity. International interoperability is therefore a key requirement; systems need to align with WIPO data standards and be able to securely and efficiently exchange information globally. IP systems are highly regulated and shaped by international norms. There may be limited scope for unilateral change to core rules, and customers may prefer alignment with other countries (jurisdictions) over novel approaches.

ii) Some Heads of IP Offices have tenure lengths (often four to five years) that could be shorter than the timeline required for a full digital modernization initiative. This means that one leader might initiate a project, while their successor is left to complete, reset or re-scope the modernization. This leadership tenure could pose a significant risk in IP Offices. To mitigate this risk, continuity planning and institutional commitment must be built into the governance structure, project planning, and change management strategies.

iii) Consider the specialization and complexity of IP processes. The legal frameworks governing IP (patent and trademark laws, international agreements like the Patent Cooperation Treaty or Madrid Protocol) are specialized and often complex, with continual change. While each country (jurisdiction) has its own laws and administrative practices, there is a significant degree of harmonization or synchronization considering the need for international cooperation and interoperability between IP Offices.

An IP Office IT system must encapsulate complex and procedural requirements. For instance, it must calculate patent term, including annuities, and manage different examination timelines based on different applicable law; additionally, patents, trademarks, industrial designs, and copyright each has unique workflows, statutes, and legal obligations. IP processes are inherently multi-year and iterative: a patent application can span multiple years, progressing through application, requests, examination, amendments, publication, oppositions, grant, and post-grant maintenance. Unlike standard, short-lived transactional systems, IP systems manage *life cycles* of rights that can span 20 years (patents) or can even last indefinitely (trademarks with renewals). Additionally, users and stakeholders interact with the same office differently, depending on the kind of services they are requesting from the IP Office. Some firms assign different attorneys per the same type of right, but for different "transactions" (filings, oppositions, appeals, maintenance). Moreover, laws, regulations, treaties, and court decisions can change practices, and digital systems must be able to treat applications differently whether they were filed before or after the change. As many IPOs have experienced, modernization is often a moving target: by the time a new system is implemented, some rules will have changed, requiring further adaptation of systems in flight. Legislative reform is often complex, time-consuming, and difficult to align with delivery schedules. In some cases, the full extent of legislative change required may only become clear after substantial design work has been completed. This evolving legal landscape makes IP Office related digital transformation projects more complex and risk-prone than static systems. IP Offices must consider *legal, technical, and operational complexity simultaneously,* which is a formidable task.

Moreover, IP Offices were traditionally structured around IP rights (the world of patents or trademarks), digitization requires bringing these two worlds together, at least to a certain degree. While the material examination is still very different, front office, client service, and fee management present similarities. Where an Office is responsible for multiple forms of IP, a strategic decision will be required as to whether they should all be managed within a single system. A common platform may support rationalized costs, coherent technologies, and a more consistent customer experience, but it may also make the program longer and more expensive.

iv) Legacy or bespoke IT systems pose significant challenges for IPOs. Many IP Offices currently operate bespoke, legacy IT systems developed in-house over many years (some dating back to the 1990s or early 2000s). These systems were tailored to specific national laws and grew over time to handle large volumes. However, they are typically now inefficient, costly to maintain, and increasingly inflexible in terms of integrating new and emerging technologies. In addition, these systems while still performing a real function can have a paralyzing effect on decision making. They are still working, and difficult and costly to change. Getting the right balance and timing is essential. In addition, in many instances, systems were intertwined; changing something in the front-office system might have significant impacts on back-office systems and vice versa. Moreover, there is an absence of commercial off-the-shelf solutions tailored to the needs of IP Offices. Large enterprise software vendors do not target niche functions such as patent examination workflows or trademarks registry management. Some relief has come from WIPO and regional bodies, which offer platforms for IP administration (like WIPO's IPAS system for patents/trademarks used by many developing country offices). However, it remains that the market for IP Office-related IT is somewhat limited, making these projects more pioneering in nature than replicative.

v) The **external stakeholder environment** for IP Offices also sets them apart:

- IP Offices serve **a highly skilled and engaged user base**. Users of IP IT systems include patent attorneys, trademark agents, and corporate IP teams (for filing and tracking applications). These users interact with the IT systems regularly and in high volumes, often managing large and multiple portfolios of IP rights. These stakeholders expect systems that are efficient, reliable, and user-centric. As such, IP Office modernization efforts must involve these professionals early and often through co-design, user acceptance testing, and training sessions to ensure the system is truly user-friendly and functional. In contrast, a generic e-government portal for citizen services might not have such a concentrated and engaged group of expert users. Customers may be reluctant to change established ways of working, especially where processes have remained unchanged for long periods. This starting point may inhibit modernization unless the organization is prepared to introduce changes that may initially be unpopular. Clients may have their own systems and preferences, but modernization efforts are unlikely to succeed if they attempt to accommodate every individual variation.

- At the same time, IP Offices also serve **novice users** (individual inventors, small businesses, and members of the public searching IP databases). Systems must be intuitive and accessible for these users as well. This duality of user base (i.e., expert professionals and laypersons) has implications for user-interface design, support services, and communication strategies.

- **External stakeholders beyond applicants.** IP data is also of interest to academics and researchers (e.g., economists studying patent trends or scientists looking at state of the art in patents) who need bulk data or analytics. IP Offices need to consider data dissemination platforms as part of modernization. Other government agencies or international entities, such as WIPO or other IP Offices, are stakeholders in terms of data exchange and interoperability. Likewise, the general public, with an interest in transparency in IP (i.e., being able to see who owns a patent, or whether a trademark is registered), depends on open and searchable data portals to verify the status of patents and trademarks. Meeting the diverse needs of this extended stakeholder ecosystem adds complexity and breadth to modernization programs. In addition, organizations may be expected to build services that align in look and feel with other government services and use shared components, such as common log-in or authentication tools. Consideration may also need to be given to how the IP system connects with other public services in a broader innovation ecosystem.

vi) The Internal Stakeholder environment: IP Offices are fortunate to have technical experts in IP subject matter (many patent examiners are scientists or engineers by training). This technical literacy means that some staff have a propensity or ability to contribute directly to digital projects. For example, an electrical engineer patent examiner might be able to effectively articulate requirements for a patent search system or even help test it deeply.

4: Shared Insights and Lessons Learned

As IP Offices around the world undertake ambitious digital transformation programs, many have encountered similar challenges and breakthroughs. By sharing their experiences, Heads of IP Offices can make more informed decisions, better anticipate risks, and avoid common pitfalls or the need to "reinvent the wheel." In short, collective learning strengthens the global IP community and accelerates progress. The insights presented below are intended as suggested guidance for those IP Offices that are planning, initiating or currently undergoing digital modernization efforts.

i) Benchmarking and IPO Exchanges on Best Practices

Some fundamental questions Heads of IP Offices face at the outset are:

- *When should we start?*
- *How long will my legacy system last?*
- *What level of oversight is required?*
- *What is the scope and scale of the modernization?*
- *How much will it cost?*
- *How long will it take?*
- *Do I have the required internal expertise?*
- *How do I access external experts?*
- *What will be the impact or benefit for staff and clients?"*
- *What is the return on investment?*
- *What are the "unknown unknowns"?*
- *What does success look like?*

To navigate these questions, it would be immensely helpful to have comparators from other IP Offices. However, detailed analysis and lessons learned are rarely published, creating a gap that this report aims to address. Consequently, it is imperative for Heads of IPOs to connect directly with their counterparts to exchange experience and insights that may not be available elsewhere.

ii) Weighing the Drivers of Change: When to Take Action

Given the many challenges listed above such as cost, complexity, risk, institutional knowledge and capabilities, there can be resistance to change or continual postponement of taking necessary action. However, at some point, there will be a convergence of a multitude of internal and external pressures or opportunities that make deliberate action necessary, these could include:

- Inefficient interface with clients' systems and service delivery;
- Increasing fragility and risk of operating legacy systems;
- Growing costs of maintaining legacy systems;
- Inefficient traditional processes that are no longer cost-effective;
- Imminent cybersecurity threats than cannot effectively be mitigated through legacy systems;
- Risk of non-compliance with other, broader government standards;
- Decline in the number of people able to maintain older systems whose expertise may be critical to a lower-risk transition;
- Increasing incompatibility with international systems; and
- Limitations of legacy systems that impede other areas of operations, or regulation or policy development.

Each office needs to weigh these compounding pressures to inform deliberate choices about when to start a digital transformation.

A note on dynamic developments: Once a program starts, new technologies will inevitably emerge that may cast doubt on earlier decisions. That should not become a reason to delay action, as waiting indefinitely will only prolong dependence on outdated systems, deepening the risks listed above.

iii) Leadership and Governance Oversight

Effective governance is the backbone of any successful digital modernization. It is important to establish governance from the onset, based on best practices, and not develop it along the way or as gaps arise. Key governance practices include:

United Kingdom Intellectual Property Office Approach

A successful digital transformation begins long before technology is procured or systems are redesigned. It begins with leadership discipline: a clear sense of purpose, a realistic appreciation of institutional constraints, and a sustained commitment to seeing the programme through. For IPOs, this is especially important given the complexity of IP rights administration, the expectations of sophisticated users, and the need to preserve confidence in the integrity of the IP system.

The first requirement is a well-defined vision. An organization must be clear about what it is trying to achieve and what success will look like. That vision becomes especially important when the programme encounters inevitable pressures, delays, competing priorities, and difficult trade-offs. It serves as the strategic anchor throughout the transformation. In the context of an IP Office, that vision should reflect not only internal efficiency, but also the broader objective of delivering reliable, modern, and trusted services for innovators, businesses, creators, and rights holders.

Leadership must also make an early choice about ambition. There is a material difference between digitizing an existing process and redesigning it for a digital environment. Similar realism is required in relation to budget, expected benefits, and timelines. These programmes frequently cost more than initially projected, and delay only increases risk as legacy systems become more fragile and harder to maintain.

Transformation also requires a willingness to challenge established habits. Resistance is to be expected, particularly in highly regulated and risk-sensitive environments such as intellectual property. Yet meaningful modernization may require changes that disrupt existing practices in order to serve longer-term national and institutional objectives.

- **Setting the Vision:** Time should be taken to define clearly what the organization is seeking to achieve. This vision should serve as a consistent reference point throughout the program, particularly when challenges arise, and should remain a stable guide for decision making.

- **Senior Level Ownership:** There is a need to maintain strategic oversight at the highest level throughout the project. The Head of the IP Office (or equivalent top executive) cannot afford to be hands-off, or assume the IT department, business owner, or a vendor will “take care of it.” No matter how competent the project team, the complexity and high stakes of IP systems require ongoing involvement and guidance from senior leadership, in particular as it affects the entire organization.

- **Securing Broad Support:** All stakeholders should understand what the organization is trying to achieve and why. This includes customers, staff who will use the new systems, senior leadership, the executive team, and delivery teams. Sustained support across these groups will be essential throughout the program.

- **Continual Steering:** Form a steering committee or governance board chaired by top management (the CEO, Director General or Heads of IPOs) and include the CIO (or equivalent) and heads of key business units (patents, trademarks, finance, communications, etc.). This body should meet regularly (e.g., monthly), and with other required government agencies, to review progress, address major risks, and make high-level decisions. Its existence ensures the project remains aligned with the strategic goals of the IPO and signals to the organization that the transformation is a top priority, not just another IT project.

- **Define Roles and Authorities:** Clearly define who has the authority to approve scope changes, velocity and drawdown of budgets, or timeline adjustments. For example, the steering committee might approve major scope additions, whereas the project manager could administer minor changes within a certain tolerance level, with appropriate controls and transparency. This is particularly important in an IPO when the level of expertise of owners runs deep and the number of engaged stakeholders might be large. By clarifying delegated authorities early, the project could avoid governance paralysis or conflicts downstream.

Canadian Intellectual Property Office (CIPO) Experience

CIPO's Next Generation Patents (NGP) initiative was a comprehensive, multi-year IT transformation aimed at overhauling aging patent systems dating back to 1997 with a modern, scalable, and user-centric platform, including back-office, front-office and financial systems. The program began in 2020 and delivered a minimal operational product in October 2024, with stabilization and functionality additions continuing through to 2026.

NGP illustrates that large scale transformations are possible in the IP domain, provided that the approach and strategy are rooted in sound governance, and key decisions on minimum operational product, including when and how to launch. Traditional governance models, often aligned to waterfall delivery, can introduce rigidity through infrequent decision points, and lengthy approval cycles. These characteristics hinder responsiveness, delay issue resolution, and constrain iterative progress in modern digital programs.

To address this, NGP implemented a fit-for-purpose governance model that balanced oversight with agility. Governance was set at the CEO level, with direct oversight via monthly steering committee meetings, increasing in frequency and intensity as issues arose and launch neared. This ensured accountability, transparency and swift decision-making. High-level sponsorship and executive steering proved critical in keeping the program on track and aligned with business goals.

The project adopted an Agile delivery model to allow iterative development of a Minimum Operational Product (MOP) (i.e., the essential features required to go live). Reaching agreement on the MOP was critical; it required accepting that some important yet not essential features would be postponed, requiring significant workarounds, and some "nice-to-have" features would be deferred until after launch. The decision to proceed once the MOP goals were met, even though additional polishing was possible, reflected a calculated, informed risk tolerance approach.

CIPO chose a "soft launch" strategy. The new system went live first to a limited group of certified patent agents in July 2024, with tightly controlled scope and support, and then opened to all users in October 2024. During this soft launch period, project leadership co-located business and IT teams in a command centre to rapidly respond to issues. This phased approach allowed the team to monitor real usage, fix critical bugs, and gradually scale up, thereby mitigating risks at full launch.

- **Understand External Governance:** Consider any external oversight accountabilities or bodies. If the IP Office resides within a larger government ministry, reports to a board, or is subject to central IT authorities, aligning with these oversight requirements is critical, as is developing the appropriate method to inform each type of stakeholder.

- **Elevate Visibility:** Visibility is required across the organization and goes hand-in-hand with governance. Transparency in communication can prevent the project from being seen as an isolated IT endeavor.

iv) Project Management and Scope Control

- **Building the Team:** A transformation of this scale is likely to exceed the size and complexity of any program the organization has previously undertaken. Strong delivery professionals will therefore be essential to plan, coordinate, and manage dependencies across the program.

- **Estimating Costs:** A major lesson learned is the need for humility about initial cost and timeline estimates. Budget assumptions should be realistic. Programs of this nature will almost always cost more than initially anticipated. Initial estimates for a large-scale IP system modernization are often incomplete. As development progresses, the true scope tends to evolve beyond what might have been previously envisioned. New requirements emerge, technological complexities surface, or external factors (like legal changes or new international standards) arise. It is, therefore, prudent to build a contingency into both budget and schedule at the onset. It is also important to avoid over-investing in early phases at the expense of later stages and to allocate resources in a disciplined and consistent way throughout the program.

- **Level of ambition:** A fundamental question is whether the organization is aiming simply to digitize existing processes or to redesign them comprehensively for a digital environment. The former may be easier to deliver, but it may also represent a missed opportunity for deeper transformation.

- **Big bang versus "step-by-step" or incremental approach:** In some instances, an incremental approach could be followed to focus on one business area at a time. For example, swap out specific technologies or functionalities, focus on just the back office of trademarks, followed by the back-office for another IP right, then adapt the finance system, and conclude with the front office for some IP rights, or any sequence relevant for an IPO's specific circumstances. An incremental or sequential approach could take a long period, and it means having new systems and legacy systems working in parallel, but it could also reduce certain risks and make the transition manageable for the organization. This issue is particularly significant for patents, where application pendency periods are long. For trademarks and designs, a "big bang" approach may be more feasible, but for patents a prolonged period of dual running may be costly, risky, and confusing.

Swiss Intellectual Property Office Experience

The Swiss Intellectual Property Office undertook a step-by-step digitization approach, beginning with smaller IP rights and gradually expanding to others. This incremental strategy allowed to manage organizational change and significantly reduce risks, as smaller, focused projects enabled teams to concentrate on specific areas. This approach, however, required the parallel use of new and legacy systems, thus creating complexity in certain areas. As a concrete example, management reports had to be adapted to include information from both the new and legacy systems to give management a comprehensive view. At the same time, this update in the management reports prompted a valuable reassessment of performance metrics and management controls.

A deliberate separation between projects and operations was used to ensure continuity while modernization progressed. Successful digitization required rethinking processes from a digital-first perspective regarding automating, simplifying, omitting unnecessary steps, and defining new tasks, rather than replicating paper-based workflows. Transition back to operations is often more complex than anticipated and needs to be planned early. New digital workflows often demand new roles, skills, and organizational structures. Addressing this early, allows to free the project teams quickly, thus freeing capacity to continue the development of new systems and launch new initiatives.

- **Minimum Operational Product:** It is important to achieve an early consensus on the Minimum Operational Product (MOP) or Minimum Viable Product (MVP) for the new and modern system. A recurring challenge is scope control. IP office legacy systems are usually decades-old and steeped with features (some critical, and some nice –to have). There might be an inclination to promise that the new system will do everything the old one did, plus additional improvements, from day one. However, this is often unrealistic as delivering an MOP first is a risk-aware approach that prioritizes early value, iterative improvements, user feedback, and manageable complexity, ensuring the modernization meets strategic goals while remaining flexible to accommodate changing business, legislative, or operational needs. How you communicate the MOP/MVP internally is key to setting realistic expectations that delivery of an MVP might in the first instance not do everything the old system could do without some manual work arounds. Perfection should not be allowed to impede progress. It is generally preferable to define a minimum viable product that is genuinely viable and then iterate over time rather than waiting to deliver a perfect solution on day one.
- It is important to define *upfront* with stakeholders what core functionality is truly essential for go-live, and what can be delivered in phases after the initial launch. Failing to define the MOP can lead to continual additions of features, which in turn can cause compounding delays and complexities. It is better to deliver a solid core system in a reasonable timeframe than to pursue a perfect system indefinitely. Users and staff may need to adapt to the MOP core system, and enhancements can be integrated once the core system is stable. One of the most common causes of program failure is excessive duration. As timelines extend, support may weaken and stakeholders may shift attention elsewhere; this makes continued discipline over cost, quality, and time essential.
- **Change Leadership:** Another project management insight is being realistic about change management and training needs. This often ties into scope, sometimes the "scope" isn't just the IT system but also preparing the organization to adopt the new solution. Some offices may have underestimated the effort to deliver the required information and training for examiners, IP agents, and support staff on the new system. Building in ample time and resources for training (and perhaps parallel run periods or sandbox environments for practice) is essential. It may extend timelines, but it can greatly improve user adoption and confidence at launch.

v) Data Strategy and Interoperability

Modernizing an IP office isn't just about modern technologies, it is fundamentally about leveraging data. IP offices manage vast and diverse datasets (patent bibliographic data, trademark images and descriptions, legal status information, etc.). Thus, a forward-looking **data strategy** must be a cornerstone of any digital modernization effort, ensuring that data is accessible and usable at the right time to drive informed decisions.

Ensuring data quality and coherence is a transformation in and of itself; getting data into one place is an enormous undertaking. Several aspects need to be considered:

- **Data for Internal Operations:** It is critical to ensure unfettered access to data in the first release of a new system. This will position IPOs to gain real-time insights into operations and the performance of complex production processes. This is vital given that during the post-launch stabilization period operations will invariably be disrupted. Having accurate and accessible data will allow IPOs to discern how operations have been affected and effectively plan for and track progress on the path "back to normal."
- **Data Security and Privacy:** With increased digitization comes greater responsibility to protect sensitive information. Patent applications, for example, are typically confidential for 18 months before publication and trademark filings might contain proprietary business details. New systems must have robust access controls, encryption, and user authentication to ensure unpublished or confidential data is not exposed.
- **Data Quality and Migration:** Many IP Offices could discover that their legacy data includes inconsistencies, for example, applicant names spelled differently in different records, missing classification codes, or duplicate entries for the same entity. If this data is migrated into the new system without cleansing or normalization, it can undermine the effectiveness of the new and modern system. Poor data quality will

negatively affect workflow efficiency, automation, and employee trust in the system. The challenge of migrating existing data should not be underestimated. Legacy data will almost certainly be less clean and more complex than initially expected, and clear decisions will be needed on format, migration, quality, retention, and deletion.

- **Interoperability and Standards Compliance:** No system can be fully future-proofed, but the risk of premature obsolescence can be reduced by aligning with international standards and capturing information in usable, structured formats. In an increasingly interconnected IP ecosystem, IP Offices benefit greatly from adhering to international data standards and ensuring their systems can "talk" to external systems. Additionally, given the numerous technological decisions required in a large and complex modernization initiative, the existence of international data standards removes the need to define data structures from scratch.

- **Modern Data Infrastructure:** Many offices are rethinking where and how their data is stored and processed. The trend is towards modern, scalable infrastructure; often cloud-based or hybrid cloud solutions. However, this transition requires careful thought and planning about data sovereignty, security, scalability, and long-term reliability. A forward-looking data infrastructure must account for future needs such as advanced analytics and AI. This means structuring databases in such a way that Offices can self-generate reports from databases wherein the data is in a form that is easily accessible, well-organized, and ready for analysis.

vi) Risk Management

- IP Office digital modernization projects are a high-risk endeavor, and as such require robust risk management practices. One standout lesson is the value of strong executive leadership in risk oversight. In projects of this magnitude, decisions are made at multiple levels (developers decide implementation details, managers at different levels decide on scope trade-offs, etc.). This distributed decision-making can lead to fragmentation. Risks arise when the cumulative effect of individual decisions aggregate into outcomes misaligned with the overall strategic vision and objectives. To counter this, executives must establish clear escalation mechanisms to ensure significant risks or divergent decisions are surfaced, reviewed, and addressed at the appropriate level.

vii) Cybersecurity

Survey Results: Cybersecurity is top of mind, survey respondents noted top concerns include: data breaches; ransomware attacks; and, phishing. The primary challenges of addressing this risk include: financial constraints; personnel constraints; technical complexity; and, regulatory requirements.

- Effective IT system and digital transformation planning for IP Offices must prioritize operational continuity and service resilience to ensure uninterrupted access to critical IP services, even during disruptions. Data integrity should be treated as a core institutional asset, underpinning trust and compliance across global IP ecosystems. Robust security strategies must address not only external cyber threats but also internal vulnerabilities, recognizing that insider risks can be as damaging as external attacks. Given the strategic value of IP information, the threat of cyber espionage requires heightened vigilance and advanced threat-detection capabilities. Finally, comprehensive crisis management and governance frameworks are essential to enable rapid, coordinated responses to major incidents, safeguarding both institutional reputation and stakeholder confidence. It is also important to build in time to conduct security testing, particularly e-service type projects prior to launch.

viii) Solution Delivery (Development, Testing, and Innovation)

When it comes to actually building and delivering a new IT system, a number of pragmatic lessons have been learned during the development and testing phases.

- **Third-Party Assessment:** One suggested practice is to consider an independent readiness evaluation before major milestones. Some IP Offices engage an outside entity, whether another government agency or a third-party consultant, to do a "pre-go-live" assessment of the system and the organization's overall level of preparedness. This neutral assessment can help determine whether: requirements have been truly met, data migration was successful, users are adequately trained, and adequate support processes are in place. Doing this can uncover potential gaps that might have been overlooked.

- **Agile vs. Waterfall:** In terms of methodology, many IP Office digital modernization projects have moved toward agile or iterative development rather than a strict waterfall model. This means delivering the system via incremental builds and perhaps demonstrating working pieces to stakeholders periodically. This approach ties in with earlier points about defining a MOP and prioritizing getting a basic version up and running and then gathering feedback and adjusting course to account for changes.

- **Test Environment:** Creating a test environment mirroring the live environment is crucial, where actual migrated data and surge testing help determine robustness of the system and areas for improvement before launch.

- **Vendor and Sourcing Strategy:** Many IP Offices do not have the in-house capacity to build an entire modern system and therefore rely on external vendors or system integrators. Choosing the right vendors and managing a program well is a make-or-break factor. IPOs can partner with large, well-known IT firms, or smaller niche companies with IP domain expertise. Alternatively, IPOs could use a mixed model (one vendor for core development, another for quality assurance, one for back office, another for front office, etc.). IPOs could use a blend of external and internal sources, for example, some IPOs have relied on in-house capacity (or partially on in-house capacity), using standard products and features in some instances (e.g., HR, finances), while developing their own when it comes to IP specific areas (back office for example). Whether a full or partial reliance on external vendors is selected, it is

important to consider open-source software to avoid dependencies. The choice between developing a bespoke system and adopting an existing one will depend on internal capability, budget, specific organizational needs, and the desired degree of control over future development. In-house delivery may initially appear less expensive, but the more important question is whether it is genuinely feasible. The organization must assess whether it has the skills and capacity required, while also considering the costs, performance, and long-term value of contractors versus permanent staff. The organization will need to develop capabilities for both negotiating contracts and delivery, particularly if an ecosystem of suppliers is involved.

ix) Go-Live Execution (Launch Phase)

The moment of truth for any digital modernization initiative is the go-live decision, when the new system is deployed and becomes the system of record. This phase has generated a wealth of lessons learned, as it is often the most intense and high-pressure phase of the project and for the Head of the IPO.

- **Deciding When to Delay the Launch:** Caution is required against being pressured by arbitrary deadlines at the expense of quality. It is better to delay a launch than to go live with a system that is not ready or reliable. Setting "go/no-go" criteria in advance helps make such decisions more objective. Delays, of course, can be challenging as they are rarely costless.

- **Soft Launch:** One approach is a phased rollout or soft launch: for example, deploying the system for internal staff use first, or for a small subset of external users, before opening it up to everyone. This can be practical for an IPO as a small number of IP firms may represent a significant amount of normal volumes of applications, thus providing both an informed user base and a representative sample of files. While the feedback from a soft launch is invaluable, it is important to keep the soft launch period short and clearly bounded. If a soft launch runs too long, an IPO can end up maintaining two systems in parallel which can lead to considerable challenges downstream or as backlogs amass.

- **Stabilization Will Take Time:** Even with a successful cutover, be prepared for a stabilization period after launch. During the immediate weeks or months post-go-live, productivity might dip and backlogs could temporarily increase as users may take time to adopt the new system and rely on traditional communication channels. This is normal, people are learning, and there may be minor fixes required along the way to improve their experience. It is prudent for leadership to set stakeholder expectations accordingly. Internally, it should be expected that staff output could drop while everyone gets used to the new interface and workflows; this should be accounted for in production forecasts. Important data points to measure performance include filings per day, formalities actioned, changes in various backlogs, number of help desk calls, proportion of service standards being met, etc. If a minimum viable product is delivered, leadership must expect too that several phases of stabilization and continuous development of functionalities will follow the system soft launch and will require capability investment and funding.

- **All Hands on Deck:** One success factor for launch is establishing a "command center" during the initial go-live period. Essentially, for the first days or weeks after launch, gather a cross-functional team that can rapidly respond to any issue. This typically involves co-locating key staff (developers, database administrators, system engineers) alongside business owners (operations managers, lead examiners, help desk reps) in a single room, working extended hours.

- **The System Will Not Be Perfect:** One often underappreciated aspect of go-live is handling production performance issues and workarounds. No matter how much testing is done, real-world usage at scale can reveal system vulnerabilities, system inefficiencies, and performance bottlenecks. No amount of testing can fully simulate the complexity and variability of live environments. Early deployment, even if imperfect, enables faster learning and more effective long-term outcomes.

- **Keep a Buffer of Funds:** IP Offices generate revenue through fees (patent filing fees, renewal fees, trademark application fees, etc.). They are often self-funded or partially funded by these fees. Modernization can disrupt this revenue flow temporarily, for example, if an office must reduce operations to build new systems, switch systems or if filings slow during a transition, fee income or revenues earned might drop. This is not just an IT issue but a financial planning issue unique to fee-funded agencies. Therefore, Heads of IP Offices need to plan budget contingencies for potential dips in revenue or increased expenses during and right after digital modernization (for instance, extra staffing to handle backlogs). As described earlier, data availability from day one is vital for effective financial planning.

Israel Patent Office Experience

The Israel Patent Office's digital transformation illustrates the value of modernizing from the ground up when legacy systems no longer meet the needs of a modern patent office. A key success factor identified early in the process was the decision to design and develop the system entirely in-house, allowing delivery by a highly experienced and professional internal team that combined deep domain expertise in patent law with strong technological capabilities. This supported the creation of a more automated, event-driven platform, with workflows streamlined to require minimal manual intervention.

At the same time, the experience underscored the importance of managing transition risk carefully. Maintaining the parallel operation of both the legacy and new filing portals reduced risk and supported business continuity, but it also delayed user adoption because many users preferred to stay with familiar workflows. Most importantly, the project showed that real-world usage is irreplaceable. No amount of testing can fully simulate the complexity and variability of live environments. Early deployment, even if imperfect, enables faster learning and more effective long-term outcomes.

x) Post-Launch Support and Continuous Improvement

The launch represents a new beginning of a new lifecycle for the system, and it requires sustained attention. It is important to recognize that work on digital systems is never truly finished. Even after the initial modernization is complete, ongoing investment will be required to introduce new features, maintain relevance, and adopt emerging technologies.

- **Knowledge Transfer:** It is critical to transfer knowledge from the project development team to the operations and maintenance team. Without deliberate handover, important know-how can be lost. The head of the office should know who will own this system once it enters support and maintenance, and whether or not the team is ready. Organizations may wish to avoid long-term dependency on commercial delivery partners for ongoing support and enhancement. Internal staff should be involved alongside contractors during the build phase, and contracts should include strong and enforceable knowledge-transfer provisions.

- **Vendor Lock-in:** It is important to avoid long-term vendor lock-in. If a particular vendor built and is maintaining the system, the office can become dependent on them for ongoing fixes or feature development and deployment. It would be important for the IPO to ensure that the code and system are accessible and editable, and could be improved by other vendors. Vendor lock-in may also be an issue when an office follows an approach at least partially reliant on in-house capacity. For example, a standard product bought on the market can be customized or adapted in such an extensive way that replacing it becomes very costly.

- **Structured Maintenance and Upgrade Process:** To avoid creating a new legacy system scenario for future leaders, it is critical to establish a continuous development and modernization plan. This will ensure that the system remains current, adaptable, and flexible to evolving business strategies.

- **Lessons Learned:** A lessons-learned session before sign-off on the project is very important to wrap up any size of project, supporting continuous institutional learning.

It is important to note that the community of IP Offices continues to serve as a support network even after individual modernization projects conclude. Many offices share updates at international meetings or through bilateral discussions about how their new systems are performing. Heads of Offices can leverage these opportunities to avoid common pitfalls and guide their own transformations more smoothly and effectively.

5: Preparing for the Future: Embracing Artificial Intelligence and Future Disruptive Technologies

As we look to the future with disruptive technologies, massive, continual improvements in computing power, large language models, Artificial Intelligence (AI) and Generative AI...*the future is now.*

The pace of change and advancement in technologies such as AI, AI agents, and code generation is increasing at an increasing rate. It is recognized by this working group that the advice in such a Report as this will be outdated before it is even published. Rather, this report examines elements of preparedness and building fundamentals to inform and allow for future technological advancements that are not even anticipated at the time of deliberations.

IPOs must look beyond legacy system replacement and begin preparing for a fundamentally different operating environment, one characterized by AI-driven decision support, blockchain-enabled security, and seamless, user-centric experiences. The role of the modern IPO is rapidly evolving. It must move past merely replicating paper processes in digital form and instead reimagine how it engages with innovation ecosystems, facilitates global IP registration, and manages data as a strategic public asset.

> **Survey Results on AI Deployment:** Based on the survey of working group participants, over 42% of respondents have partial implementation of AI in some areas and 35% are planning for AI implementation. AI development is being done through in-house capabilities, commercial solutions and many are done in partnership with other IPOs, national AI agencies and institutes of higher learning. While some offices have AI ethics guidelines or monitoring, full AI governance measures are currently under development. For those who are deploying AI, a variety of measures are pursued to measure effectiveness, including: accuracy rates; processing time improvements; cost savings; and, user satisfaction.

Innovation Culture: Similar to any technological revolution, there are threats to existing organizational structures, work arrangements, and career paths, leading to a range of responses—from early adoption by some to outright resistance from others. To succeed in the aforementioned transformation, IPOs must articulate a bold vision that positions digital transformation as a strategic asset, not merely an IT upgrade. A modern IPO must be agile, open to experimentation, and receptive to new ideas. Heads of IPOs play a key role in setting the tone, whether by supporting staff-led innovation, allocating budget for pilot projects, endorsing cross-functional collaboration, or formalizing AI experimentation and deployment in governance structures. Culture change is slow and challenging but foundational for IPOs of the future.

User Experience (UX) as a strategic driver of transformation: Historically, IP Offices have focused on internal processes and case files. Future-ready systems, however, require a shift toward a user-centric approach, including intuitive filing systems that help prevent formal errors, as well as multi-channel interaction (mobile access, real-time notifications, and API-based services), aligned with users' evolving digital expectations.

Building Digital Skill: Digital transformation is ultimately transforming the skills of a workforce. Offices that invest in training, recruitment of talent, and leadership development build stronger foundations for change. Heads of IPOs must champion workforce development, not assume it will emerge organically.

AI and Machine Learning: Several IPOs are piloting AI tools for search, classification, workflow automation, and chatbot interaction with clients/users. These tools have the potential to reduce processing times, enhance examiner productivity, and minimize errors. Heads of IPOs must understand how AI aligns with operational goals and ensure that its use is governed by ethical and legal guidelines. Also, when replacing or updating legacy systems, IPOs should prioritize technology-neutral solutions and open data structures that can more easily accommodate future innovations.

> **Re-engineering Processes for an AI-Native Future:** A common pattern in AI adoption today is treating it purely as a productivity tool and layering it onto existing workflows. Existing processes designed around human cognitive constraints and paper-based record keeping may yield limited returns even when AI is applied to them. A useful question to consider is therefore: if we were designing this process from scratch today, knowing what AI can do, would we still design it the same way? Without this reflection, there is a risk of creating AI-augmented versions of fundamentally outdated workflows, potentially accumulating a new generation of technical debt that could constrain future options. AI adoption may therefore present an opportunity not just as an operational question, but as a strategic invitation to reimagine core processes and, ultimately, the value proposition to innovators and rights holders.

Applicant Use of AI: Many applicants and law firms are increasingly using generative AI and other advanced tools to draft filings or manage portfolios. IPOs need to ensure their systems can interface with such technologies and consider the implications for examination practices. There are some reports that the number of AI generated IP applications are growing and there may be concerns about quality, which may challenge IPO capacity to deal with this influx. Heads of IPOs must stay alert to how the innovation frontier is shifting and keep their offices responsive and forward-looking. There is an opportunity for IPOs to collectively monitor the evolving use of AI and identify best practices to respond to this evolution.

Blockchain: While still in the exploratory phase for most IPOs, blockchain offers potential for secure recordkeeping, transparent audits, and smart contracts. Heads of IPOs should monitor this space and consider test-case applications that align with their national legal infrastructure.

Data-Driven Design: Data is not just an output of systems, it is a strategic resource. Offices that invest in data governance frameworks, an-

alytics capacity, and cross-functional dashboards are better positioned to make evidence-based decisions. Heads of IPOs must treat data stewardship as a core executive responsibility, developing capabilities for data stewardship, including collection, classification, analysis, and dissemination. Data governance frameworks should be established to ensure data quality, maintain security, and enable interoperability between systems.

Ethical and Strategic Risks: Emerging technologies bring complexity and risk. Bias in AI, blockchain immutability, or over-reliance on opaque algorithms all have potential legal and reputational impacts. Heads of IPOs must lead the ethical conversation internally and contribute to international consensus-building. It is important to establish ethical and transparency frameworks for the use of AI tools within IP Offices. Clear principles on transparency, explainability, accountability, bias mitigation, and human oversight are critical to preserving trust, legal certainty, and due process as AI-supported systems become more prevalent.

Norwegian Intellectual Property Office (NIPO) Experience

NIPO's experience suggests that the most sustainable value from AI comes when it is introduced carefully, governed clearly, and used as a support capability rather than as a decision-maker. The highlighted lessons emphasize that training, structured knowledge sharing, and clearer common practices are essential to support more consistent and responsible use of AI across the organization. They also point to the reality that progress is uneven between teams, that methods for turning experimentation into measurable value are still developing, and that stronger management alignment is needed on why AI is being adopted and which outcomes it is expected to deliver. Looking ahead, NIPO's strategy is focused on deeper AI integration in core processes, increased use of domain-specific and local language models, clearer measurement of impact, and continued emphasis on security, transparency, and human oversight. NIPO also points to the value of greater collaboration among IP Offices, including more open or shared-source initiatives that would allow offices to share burdens, knowledge, and results while maintaining independence and sovereignty for their services.

Global Interoperability and Standardization: Offices should emphasize the transition from static, document-based exchanges toward structured, machine-readable data (XML/JSON) in line with WIPO Standards. This is essential not only for enhanced international cooperation, but also as a prerequisite for the effective deployment of artificial intelligence tools.

You Are Not Alone: Many IPOs are experimenting, investing, testing, and developing the use of these new technologies. The IPO community can be relied on to share best practices, including successes and failures in the deployment of new technologies.

Modernizing IPOs effectively means leveraging emerging technologies like AI, machine learning, natural language processing, and process automation in ways that align with their regulatory obligations and institutional values. The goal is not to pursue innovation for its own sake, but to harness it to reduce backlogs, improve search quality, simplify user interactions, and optimize internal workflows. In essence, becoming an IPO of the future requires not only new tools, but new mindsets, competencies, and relationships.

Bureau for Intellectual Property of Curaçao (BIP)

BIP combines a trademark system dating back to 1893, shaped by constitutional transitions within the Kingdom of the Netherlands, with modern ambitions driven by participation in the Madrid System since 2003 and the launch of a digital filing portal in 2022. The introduction of the portal was preceded by more than five years within the legislative process to establish the legal basis for electronic filing. Only a few years later, rapid advances in AI-assisted software development are already reshaping expectations around system design and development timelines. According to software developers, a comparable platform could today be developed significantly faster using AI-supported programming methods. Meanwhile, internal hardware and software upgrades originally introduced to support electronic filing are expected to require renewal sooner than anticipated. While BIP does not yet use AI internally, it is exploring its potential. Within a relatively small-scale, multilingual registry centered on formal and absolute grounds examination, without an opposition procedure, AI is viewed primarily as a tool for operational support and workflow modernization. Globally developed AI tools, however, do not always align directly with the operational needs, linguistic context, and scale of BIP. A proxy-based system for non-resident applicants fosters strong client relationships through professional representatives. In this environment, rapid technological change requires continuous adaptation, with AI envisioned as a supportive tool complementing human-centered legal and administrative workflows.

6: Conclusion

Digital modernization of an IP Office is undeniably challenging but also immensely rewarding. Digital modernization and transformation are strategic endeavors, and not merely a technical exercise. As such, it requires IPO leaders to take active ownership of the process, not only through governance but through vision, communication, and strategic alignment.

For a Head of an IP Office embarking on or midway through this journey, we hope this Report has provided some insights, sparked ideas, and offered reassurance that others have walked this road and succeeded, or *eventually* succeeded. The **Executive Summary** of this Report distills these insights into a practical **Checklist**—a reference that can be kept on hand to guide strategic decision-making and to ensure that, in the push for technological advancement, critical elements are considered. With vision, collaboration, and steadfast leadership, the IP Office of the Future is within reach.

Annex A: Digital Modernization Experiences

This section provides individual IP Office experiences with their digital modernization journeys, each demonstrating the unique circumstances and lessons learned, underscoring the important note at the beginning of this Report that *one size does not fit all* while at the same time demonstrating that there are shared experiences of value for all.

1. IT Modernization at the Canadian Intellectual Property Office

CIPO's Next Generation Patents (NGP) initiative was a comprehensive, multi-year IT transformation aimed at overhauling aging patent systems dating back to 1997 with a modern, scalable, and user-centric platform, including back-office, front-office, and financial systems. The program began in 2020 and delivered a minimum operational product in October 2024, with stabilization and functionality additions continuing through to 2026. The system replaced legacy software with a suite of 21 integrated technologies, migrating over 35 million patent documents and 85,000 in-flight applications to a cloud-enabled environment.

NGP illustrates that large scale transformations require an approach and strategy that are rooted in sound governance, strategic vision, and user-focused implementation.

Approach and Execution

- **Governance and Leadership:** NGP established robust governance from the outset, with direct CEO oversight via monthly steering committee meetings, increasing in frequency and intensity as launch neared. This ensured accountability, transparency, and swift decision-making. More importantly, this was not seen as just a Patents Branch initiative; rather, it built bridges, bringing in expertise and ownership from across CIPO. High-level sponsorship and executive steering proved critical in keeping the program on track and aligned with business goals.

- **Informed Ownership by Subject-Matter Expertise and Program Management:** The design, development, and implementation of NGP was managed as a program by certified program and project managers who enabled governance with documentation, managed memoranda of understanding with internal infrastructure, and technical authorities and services, and developed, monitored, and managed contract and performance with external service-providers. NGP would have not been launched without robust program and contract management and without the strong ownership of dedicated subject-matter experts who were fully embedded to design and development teams in order to ensure there is knowledge and understanding of the intellectual property and patent acts, regulations, policies, and processes and that legal, business, and service requirements are met by the new solution.

- **Stakeholder Engagement and Change Management:** NGP placed heavy emphasis on stakeholder engagement throughout design, testing, and deployment. Internal users (patent examiners and operations staff) and external stakeholders (patent agents and IP professionals) were involved via needs assessments, regular demos, feedback sessions, and a phased rollout. This co-design approach ensured that key users were not only consulted but actively participated in shaping the solution. CIPO implemented a comprehensive training strategy and created a centralized information hub to support user adoption. By the time of full launch, users were prepared for the transition, and ongoing communication (including weekly email updates and a public roadmap) kept stakeholders informed of key milestones, continual developments, and system improvements. This high degree of engagement was vital to NGP's success; users felt heard and involved in the process as their early input helped identify usability issues that were then addressed prior to deployment.

- **Scope Management (Minimum Operational Product):** The project adopted an Agile delivery model to allow iterative development and early feedback. After early planning, the team defined a Minimum Operational Product (MOP) (i.e., the essential features required to go live) and aligned stakeholders with this scope. Reaching agreement on the MOP required significant trade-offs: it required accepting that some important yet not essential features would be postponed, requiring significant workarounds, and some "nice-to-have" features would be deferred until after launch. This scope control was required to maintain momentum and ultimately paid off by enabling a timely launch, though it also meant the new system was launched with a few known gaps requiring workarounds until they were addressed post-deployment. The decision to proceed once the MOP goals were met, even though additional polishing was possible, reflected a calculated, informed risk tolerance approach. It also recognized that further pre-launch development would yield diminishing returns on risk mitigation. Instead, deploying to production was deemed the optimal way to uncover real-world issues and drive stabilization.

- **Vendor Strategy and Procurement:** The procurement approach was integral to its success. CIPO embedded procurement experts directly into the NGP program team to craft appropriate contracts and ensure vendor deliverables stayed aligned with evolving needs.

- **Technology Selection Strategy:** After extensive exploration of technology options, CIPO decided to leverage the European Union Intellectual Property Office's EUIPO Software Package as the core back-office system (originally designed for trademarks, but adaptable to patents). This adaptation of a proven platform, supplemented with customization for Canadian patent rules, saved development time and reduced implementation risk. The EUIPO also generously shared its expertise on its Software Package which further assisted development and mitigated risks.

- **Risk Management:** The team maintained continuous risk monitoring and was proactive in mitigation. Importantly, an independent third-party conducted an organizational readiness assessment before go-live, providing an objective check on the system's preparedness and identifying any last-minute concerns. Third-party assessment essentially was an ongoing, live audit during the last four months pre-launch and throughout the soft-launch period, with assessments provided directly to the CEO.

- **Deployment Strategy:** CIPO chose a "soft launch" strategy. The new system went live first to a limited group of certified patent agents in July 2024, with tightly controlled scope and support, and then opened to all users in October 2024. During this soft launch period, project leadership co-located business and IT teams in a command center to rapidly respond to issues. This phased approach allowed the team to monitor real usage, fix critical bugs, and gradually scale up, thereby mitigating risks at full launch.

While these strategies collectively enabled NGP's success, the execution was not without challenges. Notably, the three-month soft launch, although effective in validating the system, resulted in a processing backlog. Certain patent transactions and formalities could not be cleared at the normal pace during the transition, and while users were gradually adopting the new system and were using traditional communication channels to submit applications and amendments, there were still service expectations missed post-launch. Focused investment in capacity and capability was proactively made, and then significantly increased during a "blitz" period, to reduce the backlog of operational inventories and plan the return to expected service levels. In short, even with careful planning, a major modernization and cutover can strain operations, so contingency plans for backlog management and extra staffing are crucial. Leadership must prepare to invest resources for continuous development of the system and additional operational capacity during the stabilization phases.

By 2026, the Next Generation Patents system had largely stabilized, backlogs generated during soft launch were under control, and continued functionality is being added to the MOP. Equally important, NGP created a foundation for CIPO's next wave of digital transformation. With an experienced team now in place, the agency immediately began applying NGP's lessons to its Next Generation Trademarks System project. Improved estimation methods, more refined Agile collaboration models, and effective procurement strategies now make up CIPO's modernization playbook, enabling more predictable and efficient delivery of future digital transformation initiatives.

2. Transformation Considerations from the t Kingdom

Before starting a transformation journey, there are many issues to consider. Giving sufficient thought to where you want to go and how you intend to get there will be crucial to the success or failure of your program. What follows is a non-exhaustive list of questions to ask in order to maximize your chances of success.

Your vision: Take time to define what you are seeking to achieve. You will keep coming back to it, especially when the going gets tough, which it will. This is your end game, and you should not lose sight of it.

Get everyone to support that vision: Everyone needs to understand what you are trying to achieve and why. That includes your customers, staff who will use the new systems, political leaders, your executive team (who may wish the money could be spent elsewhere), and your delivery teams. You will need to maintain that support throughout the program. If you do not, it will waver.

How ambitious are you trying to be? Are you looking to digitize your current process or to redesign your processes comprehensively for a digital world? The former is easier, but it could be a lost opportunity.

What is your budget? Be realistic. This will inevitably cost more than you first predict. If your budget is genuinely constrained, you will have to confront that early. Leaving it until the end may mean you do not finish what you start. Beware of gold-plating the first things you build and then having to cut scope severely in later phases. Spread your budget thinly but consistently. Delivery teams will want to gold-plate from the start and commercial partners will have an incentive to do so. You will have to manage that very carefully.

How much can you automate? Automation has the potential to provide the greatest efficiencies and benefits, but does your legislation allow it?

Legislation takes time: Getting legislation through parliament is complex and difficult, and it will increase scheduling complexity. You may not know what legislation is needed until you have completed extensive user design work, by which point it may be too late to change the law to implement what you want to achieve. At the very least, you may want to remove unnecessary inconsistencies between the legislation for patents, trademarks, and designs that may once have made sense. IP is also highly regulated and internationally aligned. There is limited scope for changing anything fundamental unilaterally, and your customers will likely prefer alignment, even to imperfect rules, rather than having you act as first mover on an improvement. That can be highly frustrating.

When to start: You will have to accept that new technology options will emerge once you have started and may cause you to question whether you made the right choices. You cannot allow that to delay you from starting. It would be like delaying the purchase of a new television simply because you know a better model will inevitably come along. No one wants to still be watching a 12-inch black-and-white television set.

Similarly, do not wait until you have a burning platform. You cannot wait for your existing technology to fail or succumb to a cyberattack. People with the knowledge to maintain your legacy systems will become less available, and more expensive, over time. You will need their expertise to reduce the risk of transitioning to new technologies. You will not be able to predict and future-proof your systems for every technological development. But you can minimize the risk of premature obsolescence by aligning to international standards, for example on data formats, and by capturing information in as usable a form as possible.

Are you prepared to upset customers? Your customers will not want to change their ways of working. The longer it has been since your processes changed, the more resistance you will encounter. That will inhibit your ability to transform if you are not willing to upset a few people along the way. Their preference may be for consistency with other countries (jurisdictions), but that can inhibit improvement and may not meet your national needs. IP customers are incredibly risk averse.

Coherent government services: You may be expected to develop services that have a similar look and feel to other government services and that use common tools, components, and features, such as a government log-in or authenticator tool. That will reduce your ability to provide consistency with other IP offices. You may also need to consider how to connect with other government services, such as company registration, within a wider innovation-support ecosystem.

Need, not want: The process of registering IP should be relatively straightforward. But every option you provide adds complexity to the build. Customers will have their own systems and ways of working. You will fail if you try to build something that caters to all their individual characteristics. That will not stop them demanding that you cater to their preferences, but they will need to change too.

Big Bang vs. MVP and iterate? Perfection is the enemy of progress. Your customers and staff will want perfect functionality on day one. Aiming for perfection will mean they wait a very long time before they see anything land on their desks. Define your minimum viable product, or MVP, that is good enough to launch and then iterate. The "V" (for "viable") is important, though, because when delivery gets tough there will be pressure to reduce scope below even that threshold.

The complexity of in-flight rights: This is a particular problem for patents, where the pendency period is so long. For trademarks and designs, you will probably be able to go big bang, where all rights filed up to a particular date are always dealt with in legacy systems and all applications filed after that date are dealt with in your new system. But if you do that for patents, you may face a very long period of dual running, which is expensive, risky, and confusing for customers and staff. You will need to consider how and when you transition in-flight rights to your new system in order to minimize this.

Single or separate systems for patents, trademarks, and designs? If you are responsible for multiple forms of IP, you will need to decide whether you want them all on a single system. That will enable you to rationalize your costs and technologies and provide a common experience for customers who hold patents, trademarks, and designs. While they differ in timescales, the basic processes are the same for all registered rights: file, take payment, collect bibliographic data, publish, correspond, amend, renew, and change ownership. A single system makes sense, but transforming them all together will make the program longer and more expensive.

What is your lens: customer portfolio or individual pieces of IP? Most existing systems are based on individual items of IP, individual patents or trademarks. But most customers want to manage entire portfolios. Are you aiming to facilitate that, for example through an authenticated user account? You will need a strategy to link customers to their existing rights and add new ones, while ensuring they can access and transact only on the rights to which they are entitled.

Ongoing development: Be prepared for the fact that you will never finish developing your systems. Even once the initial work is complete, you will need to continue investing in your services and systems to provide new features and capabilities for your customers and staff, and to incorporate new technologies. You will need to set aside sufficient capacity and budget for this continuous improvement. You owe it to your successors to make sure you do not force them to go through what you are going through by neglecting ongoing improvement.

You will likely not want to be tied to commercial delivery partners for ongoing support and enhancement of your new systems. Do not allow them to develop systems in isolation. Make sure you involve some of your own people in the initial development work alongside contractors and suppliers, so they are ready to take responsibility once the contract ends. Build in, and enforce, knowledge-transfer clauses in your contracts.

Do it yourself or use someone else's system? This will depend on your team's capabilities, your budget, your specific needs, and the amount of control you want over immediate and future development. Do you have needs that are materially different from those of other offices?Use your Office's resources or contract out to a supplier? Be realistic. In-house delivery might appear to be the cheaper option, but is it really feasible? Do you genuinely have the capability, in skills and in number of people, to deliver without external help? Contractors are more expensive, but potentially higher performing. If you anticipate an enduring need, permanent staff might be the better option. Will you be able to recruit people with the right skills on government salaries?

Program management capability: A complex transformation will most likely be bigger than any program your organization has ever attempted before. You will need delivery professionals to help you plan and coordinate the complex dependencies. Do not leave this to gifted amateurs. You will need high-quality program management capability at all stages of the program, not just at the start or at delivery.

Commercial capability: Suppliers are likely to have access to top-quality commercial advice. You will need to be able to match that, both when negotiating contracts and during delivery phases. Anticipate disputes and make sure you have the experience on hand to deal with them.

This will be even more important if you use an ecosystem of suppliers who may blame each other, and you, for delays. Your government might be able to help, but you will need access to advice quickly and regularly.

Data: Do not underestimate the challenge of migrating your existing data. This will likely be a transformation in its own right. The data will be dirtier than you realize and will require more effort to clean up than you think. Be clear on what data you want to hold, in what format, how you

will migrate it, potentially from multiple systems, how you will stop it becoming dirty again, and what your deletion and retention policy will be.

Benefits: Be clear on the benefits you are seeking to achieve. They will receive a great deal of attention in order to justify the cost of the program. Do not forget the robustness of the service you are providing when assessing benefits; you will have difficult questions to answer if your legacy system fails.

With technology advancing much more rapidly, you may need to reduce your estimates of system lifetime and pay-back period. Think how rapidly technology has advanced in the last ten to fifteen years. You are not building systems to last twenty-five years.

Beware of taking too long: The most frequent cause of program failure is excessive duration, as support wanes and people want to move on to something else. You will constantly need to consider the cost, quality, and time triangle.

Independent advice: You should consider how best to use independent advice to avoid optimism bias, bring in learning from other organizations, and provide assurance to your CEO and government department that your digital transformation program is being run effectively.

Maintenance and downtime: You will need to think about your opening hours and whether they are appropriate in a digital world. Customers expect to be able to transact outside traditional 9-to-5, Monday-to-Friday working patterns. But if you are moving to 24/7 availability, when will you perform scheduled maintenance? What will the implications be for response dates and deadlines where they are currently based on the "next working day"? Customers may want the best of both worlds.

3. Digital Transformation of Patent Filing and Operational Systems: The experience of the Israel Patent Office (ILPO)

The modernization of the patent filing ecosystem represents a comprehensive, multi-year process aimed at replacing legacy technologies and fundamentally improving how patent applications are submitted, processed, and published. By replacing legacy technologies that had served the office for years, the project sought to modernize the entire patent filing infrastructure from the ground up. The legacy submission portal functioned primarily as a document management tool rather than a decision-support system. It lacked automation, scalable workflows, standardized examination processes, and robust quality control, which led to inefficiencies, inconsistent outputs, and heavy reliance on manual oversight.

Building on this foundation of digital accessibility, the ILPO initiated the full transition to the current modern operational system. This new platform was designed with a heavy emphasis on automation, seamless integration, and advanced data handling capabilities. A key success factor identified early in the process was the decision to design and develop the system entirely in-house. This allowed the project to be delivered by a highly experienced and professional internal team, a group that combined deep domain expertise in patent law with strong technological capabilities.

The evolution of these core operational systems has enabled significant advancements that were previously out of reach. One of the most notable achievements is the end-to-end automation of the entire patent lifecycle. Processes such as the sending of notices regarding requirements for submitting prior art or notifications for future maintenance fees are handled automatically by the system. Integration between internal systems and public-facing services has been significantly improved. As a result, processes that once required manual initiation have become fully automated and event driven.

A cornerstone of this transformation was a deep commitment to stakeholder engagement and user-centric design. The entire transformation was shaped through continuous engagement with patent applicants and their professional representatives. Managing the risks of such a large-scale deployment required a sophisticated and cautious strategy. A key element of this was the decision to maintain the parallel operation of both the legacy and the new filing portals. This dual-system approach ensured business continuity and significantly reduced operational risk during the transition. However, the initial rollout was accompanied by periods of instability and operational challenges, and maintaining the legacy system in parallel slowed the adoption rate because many users preferred to stick with their familiar workflows.

A key insight gained during this phase was that real-world usage exposed scenarios and complexities that could not be fully anticipated through pre-launch testing. While launching a system that was not yet fully mature led to some temporary user dissatisfaction, it was ultimately proven essential; only exposure to real-life conditions enabled the continuous improvement and adaptation required for unforeseen situations. Reflecting on the journey, several key lessons have been learned. While maintaining parallel systems reduces risk, it may also delay user adoption. True behavioral change often requires decisive transition points. Perhaps most importantly, the project proved that real-world usage is irreplaceable; no amount of testing can fully simulate the complexity and variability of live environments. Early deployment, even if imperfect, enables faster learning and more effective long-term outcomes.

4. Advanced Technologies at the Norwegian Intellectual Property Office

Over the past few years, the Norwegian Industrial Property Office (NIPO) has made significant progress in adopting artificial intelligence (AI) as part of its broader digital transformation. AI is used as a support capability across administrative functions and core business processes related to patent, trademark, and design examination. The primary objectives have been to handle growing task volumes, improve quality and consistency in decision-making, and increase internal efficiency, while maintaining high standards of legal certainty and trust.

Late in 2024, NIPO utilized available off-the-shelf AI services in our Microsoft Azure tenant to create a Proof of Concept (PoC) using generative AI with a RAG (Retrieval-Augmented Generation) infrastructure and internal policy documents. The aim was to demonstrate potential benefits and data security while testing control of bias and hallucination. The initiative was also used to develop the first version of NIPO's AI policy and user guide. AI is already widely used across NIPO; however, adoption levels vary between departments and individual employees. At this stage, AI is mainly used to augment human work rather than to automate end-to-end processes.

NIPO's AI infrastructure is designed to enable the secure and responsible use of generative AI. The AI infrastructure consists of several specialized chatbots and agents tailored to different domains, including trademarks, patents, designs, text improvement, and internal knowledge lookup. In addition, we are currently exploring agentic AI within the trademark domain, starting with trademark examination agents designed as a modular workflow. The agents support examiners with tasks such as checking formal requirements, assessing relevant considerations for distinctiveness, searching for earlier conflicting rights, and supporting confusion-risk assessments.

We have introduced web search in our internal chatbot with zero data retention (ZDR), which can be switched on or off as needed and provides a significantly more secure search solution than ordinary web searches and open, multi-tenant AI services. An incognito mode allows use without storing conversations, which is particularly important when handling sensitive or confidential information. Clear internal guidelines emphasize that AI outputs must always be quality-checked and that AI serves as support capability, not as a decision-maker.

Within trademark examination, the typical use cases include finding relevant legal material and judgments, structuring and summarizing arguments, improving draft decisions and correspondence, and supporting legal assessments based on the examiner's professional judgment. AI is explicitly positioned as an assistant, not a substitute for legal expertise. Examiners report time savings and increased quality when using the AI infrastructure.

Training, structured knowledge sharing, and clearer common practices are important to support more consistent and responsible use of AI across the organization. Progress is uneven between teams, methods for turning experimentation into measurable value are still developing, and stronger management alignment is needed on why AI is being adopted and which outcomes it is expected to deliver. Going forward, NIPO's strategy focuses on deeper AI integration in core processes, increased use of domain-specific and local language models, clearer measurement of impact, and continued emphasis on security, transparency, and human oversight. AI is not an end in itself; it is a strategic enabler that strengthens NIPO's mission through enhanced efficiency, quality, and predictability.

5. Mexican Institute of Industrial Property

IMPI–COFEPRIS Linkage System Portal

This interagency project underscores the importance of considering data interoperability, institutional coordination, and legal or regulatory alignment. Most importantly, it highlights the need to prepare Office information for potential interactions with other institutions that may also be modernizing or transforming their systems and data.

1. **Overview**

The Mexican Institute of Industrial Property (IMPI) and the Federal Commission for the Protection against Sanitary Risks (COFEPRIS) have developed the IMPI–COFEPRIS Integration System Portal.

The linkage system is a direct coordination mechanism between the industrial property authority, IMPI, and the health authority, COFEPRIS. It enables, through an intergovernmental communication mechanism, the processing of applications for health registrations of medications and their corresponding granting, without infringing the exclusive rights conferred by patents. This mechanism helps prevent the commission of administrative infringements in the field of industrial property.

The IMPI–COFEPRIS Integration System Portal is a technological platform designed to facilitate citizens' access to information related to health registrations and patents concerning inventions that may be used in medications.

Its objective is to strengthen and enhance the transparency of technical, operational, and regulatory collaboration between both institutions.

Through this portal, users may access information on:

- Health Registrations
- Applications for Health Registrations
- Third-Party Oppositions to Applications for Health Registrations
- Patent search tools for inventions that may be used in medications, including those currently in force, those that have expired and are in the public domain, and those that are close to expiration
- Responses issued by IMPI to COFEPRIS within the framework of technical cooperation
- The official gazette issue containing the list of patents related to inventions that may be used in allopathic medications
- The regulatory framework governing the Linkage System

2. **Technological Aspects**

This platform provides a single point of access to up-to-date information on the linkage system between IMPI and COFEPRIS.

The platform integrates services from COFEPRIS and IMPI, providing a unified interface for users through the Portal, and bringing together the different technologies of both institutions.

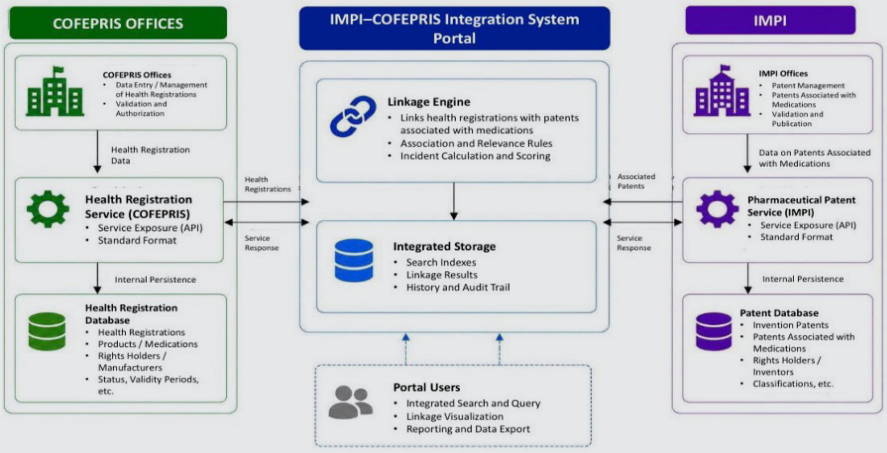


Figure 1. IMPI–COFEPRIS Linkage System Platform.

3. **Next Steps**

Through collaboration between IMPI and COFEPRIS, and with the use of technology, traceability between patents and health registrations will be ensured.

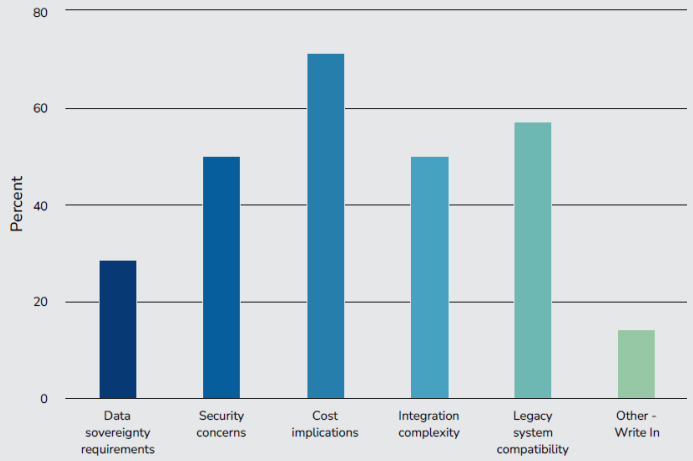
Annex B: Select Survey Results

A survey of Think Tank members was conducted in 2025, select results are presented here.

1. Digitization Status of Registry Processes

For this question: "Fully Automated" means the process is completed automatically by the system with no human intervention required. "Digital" means the process is conducted entirely through electronic means (e.g., online systems, electronic workflows) by a human officer. "Paper-based" means the process requires physical documents.	**Fully Automated**	**Digital**	**Mixed**	**Paper-Based**	**Not Applicable**
Application Submission	36.8%	21.1%	26.3%	10.5%	0%
Fee Payment	37.5%	56.3%	6.3%	0%	0%
Formalities Examination	20%	66.7%	13.3%	0%	0%
Classification of applications	14.3%	78.6%	7.1%	0%	0%
Routing/allocation of applications	15.4%	61.5%	7.7%	7.7%	7.7%
Substantive Examination	7.1%	78.6%	7.1%	0%	7.1%
Office Actions/ Correspondence	0%	72.2%	16.7%	11.1%	0%
Publication	40%	46.7%	13.3%	0%	0%
Grant/Registration Certificate Issuance	31.3%	43.8%	18.8%	6.3%	0%
Renewal	37.5%	43.8%	12.5%	6.3%	0%
Peripheral Transactions*	6.3%	68.8%	18.8%	6.3%	0%

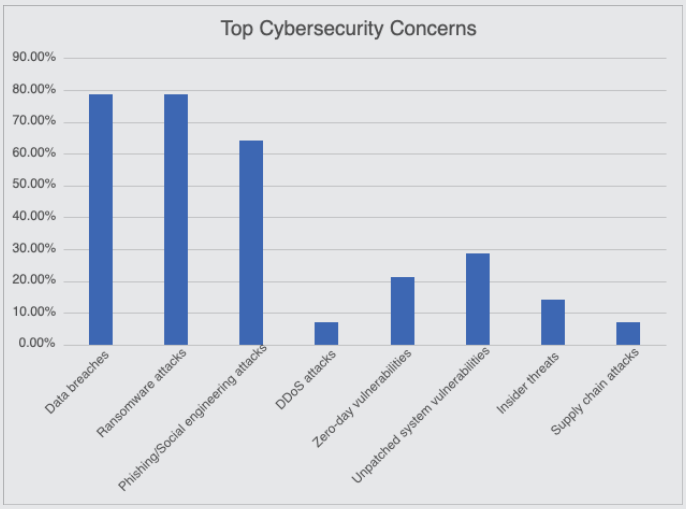
5. Main cloud adoption challenges (select all that apply):



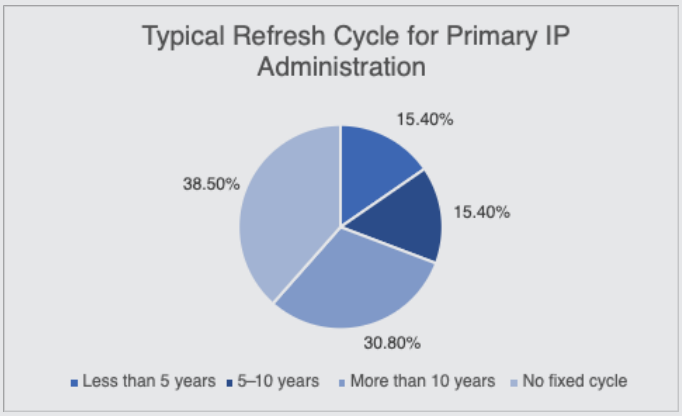
25. Current Status of AI in your Office

Value	Percent	Count
Not considering AI implementation at this time	7.1%	1
Planning/Preparing for AI implementation	37.5%	5
Initial implementation/pilot projects	7.1%	1
Partial implementation in some areas	42.9%	6
Extensive implementation across multiple areas	7.1%	1

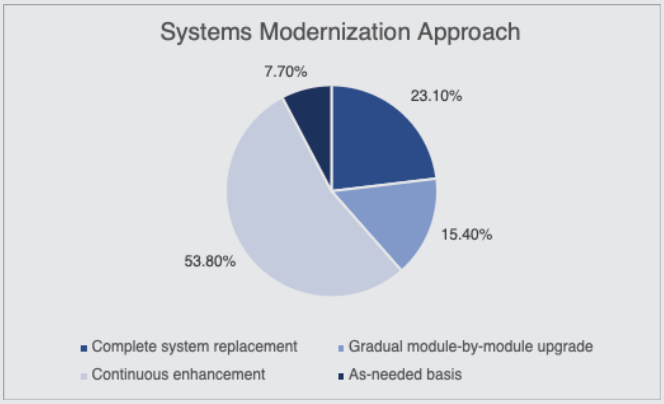
34. Top Cybersecurity Concerns (Select top 3)



42. Typical Refresh Cycle for Primary IP Administration System(s)



43. System Modernization Approach



47. IT or Digital Modernization Journey's Ranked Challenges from Most Important (1) to Least Important (11), additional challenges listed as "Other"

Item	Overall Rank	Score	Number of Rankings
Outdated (legacy) IT infrastructure and systems that are not easily integrated with newer technologies	1	109	13
Budget constraints for digital transformation and similar capital investments	2	99	13
Limited corporate knowledge to undertake such a large, multidisciplinary, and multi-year transformation	3	83	13
Inefficient ICT governance, presenting difficulties in aligning ICT strategies and priorities with the overall organizational or government goals	4	79	13
Difficulty in finding and retaining qualified ICT experts	5	75	11
Navigating evolving complex laws, regulations and compliance requirements	6	73	12
Inability to forecast overall scope, time and cost of entire project	7	68	12
Internal resistance to change, or change fatigue	8	66	12
Challenges in ensuring compliance and maintaining consistent service delivery for clients	9	65	13
Challenges engaging clients and the professional community	10	53	12
Establishing effective communication and data-sharing with other national or regional IP offices, and private sector stakeholders	11	45	11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Trademark
Association