Interdisciplinarity in Practice

Mapping the Outcomes of Multidisciplinary Intellectual Property Research: Lessons from the African Copyright Experience

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ABSTRACT (EN): Multidisciplinary intellectual property research often involves large-scale collaborative projects. Such projects combine not just multiple research frameworks, methods, and perspectives, but also multiple individuals, institutions, and sources of funding. Demonstrating the results of financial and human resource investments into complex multidisciplinary projects is increasingly important. Experiences from one recent multidisciplinary project — the African Copyright and Access to Knowledge project — provide lessons for other intellectual property researchers trying to map outcomes from current and future projects.

RÉSUMÉ (FR): La recherche multidisciplinaire en propriété intellectuelle exige fréquemment la création de projets collaboratifs de grande envergure. Ces projets combinent non seulement de nombreux cadres, méthodes et perspectives de recherche, mais aussi un grand nombre de personnes, institutions et sources de financement. La démonstration des résultats des investissements en ressources financières et humaines dans des projets multidisciplinaires complexes devient de plus en plus importante. Les expériences tirées

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d'un projet multidisciplinaire récent — le Projet africain sur le droit d'auteur et l'accès au savoir — peuvent fournir des leçons aux autres chercheurs en propriété intellectuelle tentant de tracer l'impact de projets actuels et futurs.

A. THE NEED TO MONITOR AND EVALUATE RESEARCH RESULTS

Research related to intellectual property often takes place in the context of large-scale projects. This is especially true of research related to the natural sciences and engineering, including such fields as genomics and related life sciences. But a similar pattern is apparent in the social sciences and humanities, involving, for example, law, philosophy, anthropology, management, economics, political science, and public policy. Common among these projects is a problem-based approach that draws heavily on multidisciplinary teams of academic researchers, as well as partners from government and industry. Rather than investigating an issue, for example copyright law, in the abstract, researchers are increasingly likely to look at legal issues applied to practical problems, such as access to scholarly publications and other learning materials. Applied research usually requires expertise beyond the capabilities of researchers in any single discipline: a multidisciplinary approach.

Multidisciplinary research projects face many challenges, from disparate literatures to methodological divides to disciplinary jargon. Another major challenge is proving that the project has made a practical difference in society. While this is perhaps an issue with all research projects, it is especially important for large-scale, multidisciplinary projects. For most multidisciplinary researchers of intellectual property issues, there is or soon will be a growing emphasis on results that demonstrate tangible returns on investments in research. The reasons vary: policy-makers are more often demanding pragmatic advice, granting councils are increasingly accountable for their use of public funds and more researchers are competing for less money.

Some funders of small- or medium-scale research programs that support multidisciplinary projects still leave researchers relatively free to administer funds without proving that they have achieved specific, promised results. Other established agencies, however, have more demanding procedures. Some hold mid-project meetings with peer reviewers, at which project managers, principal investigators, and research collaborators must report on progress, justify resource allocation, and earn satisfactory results to release further funding.

Increasingly often, multidisciplinary research projects are funded by multiple agencies or organizations, which can complicate matters considerably. Those funders include the traditional granting councils, but also new kinds of private and public sector donors, from philanthropic foundations to for-profit enterprises to government entities. For substantial investments of public funds, a result-oriented focus on applied research can be traced to the top levels of government, which clearly want to see "the translation of public research knowledge to the private sector" and "the commercialization of research into products and processes that create high-value jobs and economic growth."[2] Private-sector donors are rarely if ever less demanding.

Expectations like that might be well suited to some research in certain disciplines within the natural sciences or engineering, where the pressure to do applied research is familiar, albeit stronger now than in the past. But social sciences and humanities researchers are perhaps less accustomed to these pressures. Researchers at the boundary between natural and social sciences, for example in fields like Genomics, Economics, Ethics, Environment, Law and Society (GE³LS), have been forced to fit into the reporting and evaluation rubrics typically applicable to the "hard" scientists, so they might be slightly better prepared than other researchers for a results-oriented funding paradigm.

One problem is that funders' investments are generally made in anticipation of a social, technical, or sometimes economic return that is attributable to expenditure. On occasion researchers and funders disagree on the success or failure of a research project because they have not agreed upon expectations at the outset.

But even when there is a clear agreement on expectations, appropriate tools to assess the human impacts of research projects are too rarely used. Examples of orthodox research evaluation techniques are numerous. Among the most common is an output-oriented approach, which involves counting things that the project has produced, like a number of articles, or a number of events, or a number of highly qualified personnel (so-called "HQPs"). Formally, that approach relies on a logical framework; outputs are logically connected to project's goals, which are logically connected to a project's purpose. It is sometimes referred to as a "logic model," a "logframe" approach, or just "LFA." Some such models can encompass outputs

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2   Government of Canada, *Jobs, Growth and Long-Term Prosperity: Economic Action Plan 2012* (29 March 2012) at ch 3.1, online: Government of Canada: Budget 2012 www.budget.gc.ca/2012/plan/chap3-1-eng.html.

as well as activities and short-, medium-, and long-term outcomes. But the basic flaw in this approach is that it is held together by assumptions that certain outputs are likely to lead — in a linear and isolated way — to certain outcomes. While that might work for simple studies, it rarely does so for complex, multidisciplinary research projects. It is difficult for logical models to capture external contextual influences, non-linear complexities of connectivity, and unintended outcomes.

For these reasons, monitoring and evaluating the results of major investments of human and financial resources into multidisciplinary research is a real and substantial challenge for which the familiar methods of any particular discipline are poorly suited. General reference works are essential starting points,[3] but there is no substitute for experience mapping outcomes from multidisciplinary projects and policy interventions. This chapter, therefore, will describe practical experiences and synthesize lessons from one recent, multidisciplinary, large-scale intellectual property research project — the African Copyright and Access to Knowledge Project (ACA2K)[4] — in order to propose an effective monitoring and evaluation method that might transcend disciplinary boundaries. It explains how monitoring and evaluation principles might be used to assess the outcomes of the research project, such as actual or proposed policy interventions, as well as to assess the subject matter of the research, which for many social scientific research projects might also be a particular policy intervention. In this way, monitoring and evaluation principles can help to establish a feedback loop between researchers and subjects. Better understanding this loop might not only improve the research, it might also improve outcomes.

"Outcome mapping" is a technique that has been used for many years by Canada's International Development Research Centre (IDRC), and several other organizations, to assess the contributions of its research projects and programming to international development.[5] While it is by no means the only method that might be used for monitoring and evaluation, nor is it suit-

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3   Joseph S Wholey, Harry P Hatry, & Kathryn E Newcomer, eds, *Handbook of Practical Program Evaluation*, 3d ed (San Francisco: John Wiley & Sons, 2010); Peter H Rossi, Mark W Lipsey, & Howard E Freeman, *Evaluation: A Systematic Approach*, 7th ed (Thousand Oaks, CA: Sage Publications Inc, 2004).

4   See generally, *The African Copyright and Access to Knowledge Project (ACA2K)*, online: ACA2K www.ACA2K.org.

5   Sarah Earl, Fred Carden, & Terry Smutylo, *Outcome Mapping: Building Learning and Reflection into Development Programs* (Ottawa: International Development Research Centre, 2001), online: www.idrc.ca/en/ev-9330-201-1-DO_TOPIC.html.

able in all circumstances, it has been successfully adapted and implemented by a large group of multidisciplinary researchers to study the impacts of intellectual property laws, policies, and practices. The chapter first introduces the outcome-mapping framework, then describes how it was applied to monitor and evaluate the ACA2K research project, and concludes with lessons for assessing the impact of multidisciplinary research in general.

B. AN OUTCOME MAPPING FRAMEWORK ADAPTED FOR INTELLECTUAL PROPERTY RESEARCH

During 2005 and 2006 the IDRC recognized growing critical awareness among scholars, civil society, the private sector, and international policy-makers surrounding the untested assumptions about relationships among copyright and development. It sought to support large-scale, empirical research on this topic in order to gather evidence that could support international and national copyright policy-making processes. A proposal was received for a project to be led by several African researchers from Uganda, South Africa, and elsewhere. In consultation with IDRC staff and experts from other developing countries and from Canada, approximately eighteen months were spent custom designing a robust research methodology to implement the study project.

Implementing an ambitious, multinational research project in a relatively understudied area required the use of a robust monitoring and evaluation framework. Therefore, a custom-designed methodology was constructed using tools and systems that IDRC and other organizations had been working with for several decades. Specifically, the project was designed around the analytical framework of outcome mapping.

The distinction between "outcomes" and "impacts" is more than semantic. A variety of other words are sometimes used in this context too, such as "influence," "effect," or "consequence." Sometimes these words are synonymous, but there are sometimes subtle distinctions in meaning. Although assessing *impacts* of copyright policy research might, at a glance, seem the same as assessing *outcomes*, the term *impact* implies a but/for causal relation. Likewise, words such as *consequences* or *effects* suggest a direct causal relation (e.g., "cause and effect"), while a term such as *influence* implicitly allows consideration of multiple causal or correlated factors. Avoiding unjustifiable claims of causality is especially important in complex fields like intellectual property and development. The technique of

outcome mapping consciously avoids claiming sole credit for results that are in fact attributable to a combination of interrelated variables, and instead attempts to describe the nature and degree of outcomes fairly attributed to one or more of these specific variables. The terms used in describing the exercise of outcome mapping matter less than this underlying principle.

Relations between research and/or policy interventions and human development are multi-faceted and non-linear. Consequently, the technique of outcome mapping focuses on monitoring sustained, incremental contributions to change. Assessments map dynamic rather than static outcomes. Moreover, because the changes that matter most in a development context are those that better people's daily lives, outcome mapping is most concerned with assessing changes in behaviour, not only changes in state. To put that in practical terms, the emphasis is on subtly assessing how organizations act and people live, rather than on single events or macroeconomic snapshots.

Outcome mapping methodologies can be unfamiliar and initially seem awkward to some people. But they have been applied successfully to assess the results of policy interventions in a wide variety of contexts, often but not always related to international development. Indeed, of course, monitoring and evaluating the impacts of projects or policies is generally not the sole domain of development practitioners. Valuable lessons might also be learned from environmental impact assessments commonly led by biologists, hydrologists, and other natural scientists (and lawyers),[6] or the social impact assessments pioneered in disciplines like sociology and cultural geography.[7]

But looking at techniques from the field of international development is nevertheless helpful for multidisciplinary intellectual property (or any social sciences) researchers because, as a practical matter, both areas share similar challenges. The areas of activity are not only complex but also dynamic, relationships between events are non-linear, and budgetary pressures increasingly require demonstrating results. A recently concluded research project at the intersection of intellectual and property and development, the ACA2K project assessing copyright's relationship with access to education and learning materials, is one example of outcome mapping used as a practical monitoring and evaluation tool.

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6   Please see Chapter 4, "The Precautionary Principle and Its Application in the Intellectual Property Context: Towards a Public Domain Impact Assessment."

7   See Frank Vanclay, "International Principles for Social Impact Assessment" (2003) 21:1 Impact Assessment and Project Appraisal 5.
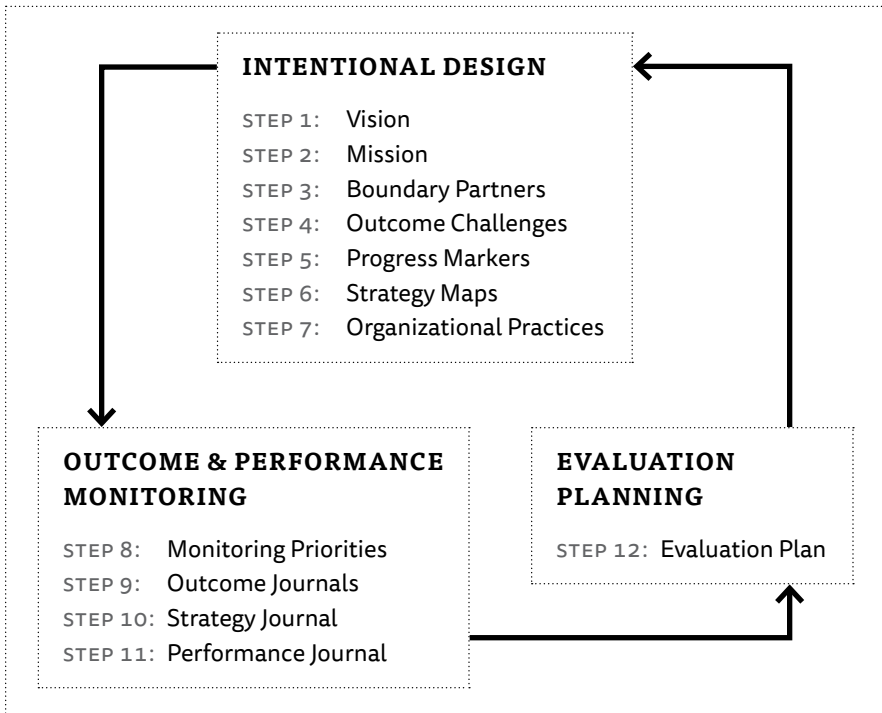
C. IMPLEMENTING OUTCOME MAPPING METHODS

Outcome mapping can be used to assess the contributions of a particular public policy intervention (such as intellectual property) on a societal issue (such as education or development). Or, on another level, outcome mapping can be used to determine the influence of an organization, program, or project (such as the ACA2K project or the IDRC) on a specific area of concern (such as copyright and educational materials, or education and development). The ACA2K project deployed outcome mapping in both ways. First, researchers used outcome mapping to assess the general influence of copyright laws, policies, and practices on education systems in Africa. Second, outcome mapping helped researchers design and monitor the contributions of the specific research project.

In those contexts, outcome mapping generally involves three elements: design, monitoring, and evaluation, depicted in Figure 20.1. The key aspects of these steps implemented by the ACA2K research project are discussed in the three subsections below.

Figure 20.1: Three Stages of Outcome Mapping

INTENTIONAL DESIGN

STEP 1: Vision
STEP 2: Mission
STEP 3: Boundary Partners
STEP 4: Outcome Challenges
STEP 5: Progress Markers
STEP 6: Strategy Maps
STEP 7: Organizational Practices

OUTCOME & PERFORMANCE MONITORING

STEP 8: Monitoring Priorities
STEP 9: Outcome Journals
STEP 10: Strategy Journal
STEP 11: Performance Journal

EVALUATION PLANNING

STEP 12: Evaluation Plan

(Source: Sarah Earl, Fred Carden, & Terry Smutylo, *Outcome Mapping: Building Learning and Reflection into Development Programs*, above note 4. Reproduced with permission.)

1) Design

The starting point for the research project was the vision of a well-functioning copyright system contributing positively to human development in its economic, cultural, and social dimensions. Exclusive, private rights over original works are a means to this end, it is usually assumed, because such rights ultimately facilitate the creation of and access to knowledge for public benefit. The project's overarching mission was to better understand and influence — based on empirical evidence — the extent to which copyright is fulfilling its purpose of facilitating the creation of and access to knowledge for development.

To do that, a series of specific objectives were identified, including:

- building and networking the research capacity of African researchers to investigate copyright environments and access to learning materials (across all formats) within and across countries;
- developing methodological best practices around the relationship between copyright environments and access to learning materials;
- increasing the amount of published scholarship, such as technical reports and peer-reviewed publications, addressing this topic;
- raising awareness of the interface between copyright and access to learning materials and supporting copyright reform processes in relation to access to learning materials and access to knowledge in Africa; and
- building capacity for copyright policy engagement in universities and related institutions of higher learning regarding the impact of copyright on scholarly and research environments in their institutions.

The project's objectives demonstrate that the intention was not to conduct abstract or theoretical research into copyright. The project was geared from the outset towards practical, applied research to assess copyright's influence on an important development-related issue.

A broad investigation into copyright and access to learning materials in general, or even throughout all levels of a country's education system risked becoming conceptually unfocused, logistically unmanageable, and practically ineffective. So, while research teams were free to consider all aspects of their country's education system if it was deemed necessary to do so, emphasis throughout the project was placed on tertiary education.

There were three main justifications for this focus. First, studying the tertiary education sector allowed investigation of not only classroom learning but also advanced scholarly research. Second, tertiary education is primarily obtained in urban settings, and in contexts where non-copyright barriers (such as the lack of physical infrastructure or extreme poverty) will typically be lower. Third, anecdotal evidence available prior to the commencement of the project pointed to increasing support for access to learning materials and education in general at lower education levels (pre-tertiary) in most African countries, with students, researchers, and faculty at tertiary institutions typically not benefiting from government interventions aimed at improving materials access.

Initially, the concept was to conduct a baseline study aimed at understanding that issue in the context of the copyright legal framework in South Africa. As the demand for and opportunity to conduct more comprehensive yet still manageable research became clearer, the project evolved into a pan-continental, comparative analysis of not only copyright legal doctrines but also real-world practices. Research network nodes were first established with teams of researchers based in five countries: Egypt, Ghana, Senegal, South Africa, and Uganda. The number of country research nodes eventually grew to eight to include Morocco, Kenya, and Mozambique.

The countries studied represent Africa's geographic diversity, as well as its economic, linguistic, religious, cultural, and legal differences. The project encompasses some of Africa's most advanced economies, like South Africa and Egypt, as well as some its least developed, such as Senegal and Mozambique. There are former colonies of, and therefore copyright laws based on systems from, England (Egypt, Ghana, Kenya, South Africa, and Uganda), France (Egypt, Morocco, and Senegal), Spain (parts of Morocco), and Portugal (Mozambique). The legal systems in the study countries reflect common law and civil law traditions, and also Sharia law in some cases. Dominant languages in study countries include a wide variety of indigenous languages as well as English, French, Portuguese, and Arabic. Researchers held diverse occupations: full-time academics, librarians, graduate students, practising lawyers, consultants, civil servants, judges, and parliamentarians. Researchers also came from diverse backgrounds: law, economics, management, political science, development studies, international relations, education, library and information sciences, anthropology, and more. Almost all of the more than thirty people participating were from or based in Africa.

The research was designed to use three interrelated techniques: legal doctrinal analysis, qualitative assessment interviews, and comparative review.

The first of these methods, legal analysis, was at the heart of the research project. The state of the law in any particular jurisdiction is determined by a combination of legislative rules and their judicial or quasi-judicial application. Consequently, the first element of the research was to conduct a review of relevant statutes and decisions interpreting or applying them in each study country. Teams of researchers in each study country examined and reported on a variety of aspects of national laws. In addition to basic information, such as the titles and dates of relevant statutes, researchers situated national laws within the international copyright context of various treaties and agreements. Researchers investigated the criteria for obtaining copyright (the nature, scope, and duration of protection) and exceptions and limitations of various sorts. They also located, catalogued, and reported on relevant cases interpreting or applying the statutory provisions.

However, laws do not operate in a vacuum. Understanding what copyright law permits or prohibits *in theory* does not shed much light on what actually happens *in practice*. Acknowledging and acting on this realization was probably the most unique and, frankly, the most valuable aspect of the ACA2K project. Investigating copyright's real-world application is especially important in the African context, where anecdotal evidence surveyed prior to commencing the project supported the intuition that there is a tremendous gap between copyright law and practice.

This led to the project's second research method: qualitative data gathering with stakeholders. To obtain empirical evidence of copyright law's impact "on the ground," researchers adopted methodologies borrowed from non-legal social sciences and humanities, such as impact assessment interviews and focus group discussions, supported by thorough desk analysis of relevant literature.

To ensure a degree of consistency in data gathering across study countries, research teams structured their impact assessment interviews using general questionnaires adapted from guidelines that were custom designed for this research project. Interview questions were designed to elicit data regarding two general issues. First, what was/is the *intended* effect of copyright on access to learning materials? And second, what is the *actual* effect of the copyright environment on access to learning materials? Teams were particularly encouraged to hone in on two more specific subtopics: gender equity and information communications technologies.

Researchers used semi-structured oral interviews rather than written surveys. This reduced the number of people it was feasible to interview, but greatly enriched the interaction with each interviewee. Researchers kept meticulous records of the interviews, including notes, audio recordings, and often transcripts, so that data collected could be organized, reviewed, archived, and verified. All researchers followed codes of ethical conduct, with clear guidelines about obtaining informed consent, guaranteeing confidentiality, avoiding undue influence, and sharing the benefits of the research with participants.

Integrating qualitative research methods into the design of the framework provided an important, early opportunity to think about the project's "boundary partners." In outcome mapping lexicon, boundary partners are individuals or organizations with whom the project or policy program interacts directly and with whom there may be opportunities for influence.[8] By definition, the interviewees involved in the project were (among) its boundary partners. Boundary partners are a slightly smaller group than conventionally conceived stakeholders, who are influenced *by*, but may not necessarily have influence *on*, the policy intervention being assessed. By identifying early in the project who the boundary partners could be, researchers were both designing the project (figuring out who to interview for the research and who to target with the research results) and at the same time developing the monitoring and evaluation framework (these same boundary partners would be key to the success of the project in achieving its intended outcomes).

At national level, the boundary partner selections varied from country to country, but most research teams decided to engage with representatives of:

- government departments responsible for copyright law and policy-making;
- government departments responsible for education, arts, or culture;
- administrative or enforcement agencies and professionals;
- authors, copyright owners, collecting societies, and industry associations;
- educators, including administrators, teachers, and librarians;
- students and researchers; and
- intermediaries such as content distributors and telecommunications providers.

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8   Earl, Carden, & Smutylo, above note 5 at 1.

Generally, most constituencies concerned about copyright and access to learning materials could be classified within one of three broad groups: (1) policy-making, government, or enforcement entities; (2) educational communities; and (3) rights holders or groups of rights holders.

The impact assessment interviews were complemented in every study country by a thorough review of relevant literature. Research teams located, catalogued, and synthesized books, academic articles, student dissertations, policy papers, newspaper reports, public relations materials, and online information. In combination, these data sources helped researchers understand how the law is being perceived and applied.

Together, the doctrinal and qualitative methods helped research teams to determine progress markers based on the behaviour changes they would expect to see, like to see, and love to see. Integrating those benchmarks into the project's design made ongoing monitoring and evaluation feasible. The next step was to develop strategies to achieve those changes. In essence, the strategies involved gathering and reporting on empirical evidence to inform better copyright-related policy-making and practices.

Conducting local-level research in the study countries was, of course, essential to this mission. But much of the value from the ACA2K research flowed from the fact that it was a pan-continental, comparative project. Results from all eight study countries (as well as scans of two more countries: Zambia and Zimbabwe) were compiled, synthesized, and analyzed in order to draw out generalizable themes and lessons from across Africa. Some of the substantive insights gleaned from the comparative review are described below in the context of project monitoring and evaluation.

2) Monitoring

Monitoring helps the project or program to conceive of itself as not simply an observer but also a part of the change process.[9] It also allows, if necessary, for responsive adjustments and improvements to ongoing interactions.

Diligence is needed to maintain effective project or policy monitoring practices. Monitoring need not be onerous, but does require work and should be regular. Processes ought to be integrated into the organization responsible for the project or policy intervention. To ensure that happens, experts point out that the system must be simple, light, useful, and rel-

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9   *Ibid*, ch 4.

evant.[10] Though time and effort is inevitably required, monitoring must be a priority if an intervention is to be effective.

Periodic (for example, quarterly) meetings among key personnel, held either face-to-face or virtually, are valuable to ensure sustained focus on the challenges and opportunities arising throughout the duration of the project or program activities. In the interims between meetings, journaling is a technique well suited to monitoring performance and outcomes. This involves regularly documenting and reflecting on observations about behaviour changes taking place. Journals can be focused on monitoring changes in behaviour among boundary partners (outcomes), the project's or program's actions to achieve those outcomes (strategies), and generally the organizational practices to maintain relevance and influence (performance). Separate journaling activities are ideal to monitor each of these aspects.

The ACA2K project emphasized the importance of ongoing monitoring early in and consistently throughout its life cycle. Work was conducted on various levels. For example, country research teams conducted local monitoring activities, assessing the behaviour of national boundary partners in response to the evidence researchers were gathering and presenting, and adjusting activities accordingly. Moreover, on a project-wide level, researchers and management were monitoring the behaviour of the project teams, identifying how these teams themselves were integrating into the copyright environments of their respective jurisdictions. And perhaps most importantly, researchers continuously monitored the ways in which the project as a whole was having influence over the general state of copyright law, policy, and practice in respect of education throughout Africa and even globally. That does not mean that project participants influenced all developments in copyright or education, let alone that project participants monitored all such developments; rather, project participants monitored *their* influence as broadly as possible.

3) Evaluation

It is possible to evaluate the results of the ACA2K research project on two interrelated levels. First, what influence did the project itself have on copyright environments in the study countries? Second, and more substantively,

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10   *Ibid.*

what does the evidence gathered suggest about the influence of copyright in the study countries on education?

Assessing *outputs* is a first step (too often the only step) in measuring a project's contributions to *outcomes*. By bringing together the findings of the doctrinal research with the findings of the qualitative interviews, each country team was able to develop a picture of the copyright environment in its country. Teams then described and analyzed that environment in a published report in each country, and later made regulatory and policy recommendations outlined in an executive policy brief. The result of just those activities was sixteen published documents reporting on copyright environments in the study countries.

Using country reports and executive policy briefs as dissemination tools, teams held national policy dialogue seminars to bring together boundary partners and other stakeholders to engage in a discussion of the evidence and recommendations for legal and practical reform. Between May 2009 and March 2010, nine national policy seminars were convened, in Nairobi, Accra, Kampala, Maputo, Marrakech, Cape Town, Johannesburg, Cairo, and Dakar. In total, hundreds of influential participants were involved in and affected by these meetings.

More broadly, the ACA2K's research into copyright and access to learning materials conducted in, and across, the eight study countries has yielded hundreds of pages reporting on statutory and doctrinal data and literature reviews, and dozens of hours of recorded engagement documenting people's and institution's actual experiences. Translating the data into meaningful conclusions and reporting those conclusions in a manner capable of achieving the project's overall objective of facilitating evidence-based policy-making were challenging tasks. Written research outputs have included:

- a detailed methodology guide to enable future research on this topic;
- comprehensive country reports documenting doctrinal and practical research results in each study country;
- executive policy briefs for each country, summarizing findings and making recommendations for legal reforms and pragmatic steps for improvement;
- briefing papers targeting official representatives, negotiators, and copyright policy-makers at key organizations working on international copyright policy issues;

- statements about ACA2K findings read to official sittings of WIPO committees (two statements at sittings of the WIPO Standing Committee on Copyright and Related Rights (SCCR) and one statement to a sitting of the WIPO Committee on Development and Intellectual Property (CDIP));
- a peer-reviewed journal article in Africa analyzing key findings across the eight countries;
- local and international media coverage of the project and its practical importance to contemporary issues and mainstream policy debates; and
- a multilingual website reporting on ACA2K activities and findings.

Project researchers have presented their research methods and findings at dozens of conferences, workshops, and symposia around the world, including the aforementioned national ACA2K policy seminars in each of the eight African study countries and forums in locations outside Africa including Quebec City, Ottawa, Milwaukee, London, Geneva, and Milan. Audiences at these events have included key representatives from international organizations, national governments, rights-holders associations, and educational communities.

Perhaps the most substantial output of all from this project is a book published by University of Cape Town Press, one of Africa's largest and most influential publishers, called *Access to Knowledge in Africa: The Role of Copyright*.[11] This book was also translated into French,[12] and distributed broadly in hard and soft copy under an open-access licence.

Outputs aside, the important thing from a project evaluation perspective is to gauge *outcomes*. This particular project has directed attention toward copyright's role in enabling or restricting access to learning materials. The project's principal contribution to the state of knowledge in this field is the rich empirical evidence generated by actually assessing the impact of copyright "on the ground" rather than merely "on the books." To the researchers' knowledge, such a pan-continental, multidisciplinary endeavour had never previously been undertaken. Empirical evidence gathered during almost three years of work by more than thirty researchers inves-

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11 Chris Armstrong et al, eds, *Access to Knowledge in Africa: The Role of Copyright* (Cape Town: IDRC/UCT Press, 2010).

12 Chris Armstrong et al, eds, *L'accès au savoir en Afrique : Le rôle du droit d'auteur* (Laval: Les Presses de l'Université Laval/CRDI, 2012).

tigating copyright laws, policies, and practices in eight African countries has provided a valuable opportunity to assess how copyright environments really impact access to learning materials in the continent.

Perhaps the most important revelation from this research is that copyright laws in all study countries comply with international copyright standards. In many cases, the African countries studied provide even greater protection than international laws require. Thus, the countries studied do not need advice or assistance in drafting legislation to bring levels of legal protection up to par. Simply put, Africa does not need stronger copyright laws. This in itself is a very important finding, which urgently needs to inform African national copyright policy-making at a time when many countries — including ACA2K study countries Kenya, Ghana, and South Africa — are in the midst of revising or planning revisions to their copyright laws.

Throughout the continent, however, there is a lack of awareness, enforcement, and exploitation of copyright. A gap exists, to varying degrees, between copyright law and on-the-ground practices in all countries studied. Empirical evidence has confirmed the intuition and impression that copyright law in Africa is widely ignored, if even known about. And many of those who are aware of the concept of copyright are apparently unable to comply with it because of their socio-economic circumstances.

Access to learning materials in the study countries is obtained mainly through copyright infringement. When copyright enforcement begins in earnest (as research indicates it will), then, without mechanisms in place to promote and ensure non-infringing channels of access to knowledge, many learners, particularly at the tertiary level, will be in a precarious position. Entire systems of education will be vulnerable. Thus, maintaining the status quo is not a sustainable policy option. As well as representing an unreliable and unsustainable access mechanism, learners' systemic infringement of copyright in order to obtain necessary access to educational materials has a detrimental effect on the integrity of the entire copyright system. Copyright laws that cannot be followed by the vast majority of society only serve to generate resentment for their underlying principles, and ultimately undermine respect for copyright and the rule of law generally.

The consequences of maintaining unrealistic copyright systems are serious. Though the ACA2K research acknowledges that there are many other barriers to access to learning materials, such as the high prices of books and student poverty, copyright is an important and under-researched barrier. The evidence suggests that an appropriate and sustainable copy-

right environment, combined with other measures to make access to materials more affordable, could be one of the key components of a holistically well-functioning tertiary education system. Though all the countries studied have other public policy matters to address, from health crises to security and political or economic stability concerns, the importance of education in addressing these and related development challenges should not be understated.

For these reasons, the project's overarching recommendation is that all stakeholders throughout and beyond Africa work towards solutions that can help to bridge the gulf between national copyright laws and the prevailing practices used for accessing learning materials. There are essentially two ways to narrow this divide: modify behaviours and/or reform laws. Expanding copyright protection even further beyond international norms is almost certain to aggravate the existing compliance challenges. It is already impractical for most members of tertiary educational communities in the ACA2K study countries to adhere to existing legal requirements; compliance with even stronger laws is clearly unattainable. Evidence from the study countries strongly suggests that the copyright environment can be improved by legal reforms that make copyright more flexible and suitable to local realities. Paradoxically, less restrictive laws could provide more effective protection. Less restrictive laws would enable entire segments of the population currently operating outside of the copyright system altogether to comply with reasonably limited, realistic rules. This could, in turn, increase awareness of, and respect for, the concept of copyright, compounding in the longer term to bolster the effectiveness of the system for all stakeholders. Middle-ground models, such as collective management of copyright and collaboratively generated statements of best practices among stakeholders, hold significant promise to bridge the divide between law and practice.

Preliminary observation of the outcomes that this new evidence has contributed to at national, regional, and international levels suggests that this should be the beginning, not the end, of engagement with the issues at the intersection between copyright and access to learning materials in Africa. Already, this empirical research has found its way into the high-level policy debates examining intellectual property issues in the development context. Collaborative relationships have been formed between ACA2K and stakeholders on all sides of the copyright debate, including rights-holder and user groups, not to mention research centres, independent think tanks

and non-governmental organizations (NGOs). The methods and findings of this project are already being taught in at least one university curriculum as a model for others to follow. National seminars have been held in every ACA2K study country, leading to meaningful engagement with lawmakers, policy-makers, and the stakeholders most directly impacted by tertiary educational access issues. The media have shown interest, with coverage of ACA2K finding its way into national and international outlets, including television, radio, print, and online. The book presenting the project's key findings has been positively reviewed by one of the world's leading scholars on the political economy of intellectual property in an influential academic journal.[13]

These outcomes demonstrate that this project has succeeded in achieving its objectives of increasing research capacity in Africa on matters of copyright and learning materials access, refining methodological practices for this kind of research, growing the body of published evidence in this area, and building researchers' awareness of the need to interrogate copyright in relation to educational development objectives and outcomes. And perhaps most importantly, it is apparent that the team that has been involved in executing this project has cross-fertilized to create a solid and sustainable human network of people who are passionate about these issues. The mission to create a network of African researchers empowered not only to study the impact of copyright environments on access to learning materials but also to use the evidence generated to assist copyright stakeholders to participate in evidence-based copyright policy-making has apparently succeeded. Some progress has thus been made towards the ultimate vision of people in Africa maximizing access to knowledge by influencing positive changes in copyright environments nationally and across the continent.

D. GENERAL LESSONS FOR LARGE-SCALE IP RESEARCH PROJECTS

Several relevant lessons from the ACA2K's project's experience can be brought to bear on the discussion and eventual design of general principles to design, monitor, and evaluate multidisciplinary intellectual property

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13   Christopher May, "Access to Knowledge in Africa: The Role of Copyright" (2011) 110:441 African Affairs 664.

research. This final section of the chapter discusses two particular issues: potential indicators and implementation challenges.

In terms of potential indicators, the outcome mapping method relies heavily on qualitative as opposed to quantitative data. In order to be successfully adopted (or adapted) in the context of other intellectual property research projects, assessors would have to accept the legitimacy of this kind of data. This requires overcoming a degree of discomfort with the lack of precision and comparability of qualitative data. Those characteristics cannot be mistakenly perceived as implying a lack of rigour or reliability. This is a common challenge in multidisciplinary research, for example in projects connecting the natural sciences and engineering on one hand with social sciences and humanities on the other. But it can be overcome with sufficient open-mindedness.

Qualitative data *can* be measurable against appropriate, predetermined indicators or benchmarks. In the ACA2K project, for example, researchers in each study country predetermined measures of success based on changes in behaviour that they would "expect," "like," and "love" to see. Put another way, researchers continuously mapped over time whether the outcomes influenced by their intervention through the project met, exceeded, or greatly exceeded expectations. What those expectations are, specifically, would depend substantially on the aims and objectives of the intervention.

A related challenge is the ability of any metrics, qualitative or quantitative, to indicate *why* such behaviour took place. Was it the result of the research project or other factors? Obtaining qualitative data through, for instance, interviews or focus groups, might yield that kind of data. In a perfect world, monitoring and evaluation would also track what would have happened without the research project. The reality in the context of much intellectual property research, however, is that counterfactuals cannot be observed. Assessors might therefore speculate what might have happened but for the intervention.

Moreover, monitoring of behavioural changes that are attributable or at least correlated to a research project's intervention is a process, not an event. In this process, there is a differentiation between performance monitoring (ongoing through a project) and evaluation (analytical snapshots that can be done at the planning stage, at points during the project or at the end). Both require a baseline and then longitudinal data collection over a period of time — at the beginning of the research, while research is underway, and after research concludes. This also presents a potential problem

for researchers, because results are not often observed until well after a project has finished, and reporting has been completed. In these circumstances, perhaps the best that researchers might do is to map trajectories of changes, looking for and reporting on signals that research stakeholders are beginning to behave differently or likely to do so in the future. Researchers, if possible, might also contemplate, at the design and proposal stage, post-project evaluation.

Generally, this entire process of data gathering about the research project itself, in addition to data about the subject matter being researched, can be labour and resource intensive. It need not be onerous, but it does require careful and deliberate thought, especially at the outset of the design phase. And it requires close monitoring by individuals, in direct contact with key stakeholders, over an extended period of time. It can generate considerable amounts of qualitative data, which requires not only collection but also organization and analysis. Those tasks can be time-consuming, and in some cases require significant investments of financial and human resources.

The general discussion of monitoring and evaluation also triggers deeper questions for multidisciplinary researchers managing the shift toward result-oriented research. One difficult issue involves research ethics. Especially on the subject of human behaviour, as is the focus of much intellectual property research, many researchers have been trained to respect a strict boundary between observation and intervention. Not only is it methodologically problematic to influence the behaviour of research subjects, it is in many circumstances unethical. Yet, that is precisely what research funders who demand demonstrable results expect. It leaves researchers in a delicate position, with potentially conflicting obligations to research funders and research subjects.

Such ethical dilemmas cannot be resolved in this chapter, but are nevertheless worth highlighting as an area where caution, and extensive discussion, is warranted. Adopting a monitoring and evaluation framework might, at least, force reflexive consideration of this sometimes-obscured issue.

Another key question moving forward is whether funders will in the future set rigid guidelines for assessments that will distill a single monitoring and evaluation methodology to be applied consistently, or rather accept a variety of methods that might be used together or separately as circumstances dictate. It may be that a single methodology better facilitates comparisons across projects, an objective that likely motivates many funding

decisions. But allowing for different methods might yield richer and more nuanced data, which could be more appropriate for the highly qualitative comparisons in a wide variety of situations.

In conclusion, outcome mapping can be a valuable tool for designing, monitoring, and evaluating the influence of research projects and policy interventions in complex environments. That makes it potentially very useful in the context of methodologies for assessing multidisciplinary intellectual property research. Even if outcome mapping *per se* is not deployed as the assessment tool of choice, its underlying principles are valuable to inform the monitoring and evaluation process. Those principles include an appreciation for the validity of both qualitative and quantitative data, a longitudinal focus on changes in behaviour over time instead of static analysis of conditions or events, and care to avoid claiming credit for causality but rather recognizing inherent complexities and uncertainties. Proven experience with the IDRC-funded ACA2K research project demonstrates that the framework can be used to map the influence of a project or a policy intervention.