Towards an Open Education Model for Mauritius

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ABSTRACT

In Mauritius, during the 2000-2005 period, the government came up with the idea of an open-learning institute which would have the mandate of promoting open education in the country. The idea later evolved into that of an Open University in 2005 but it never came into operation, until a revamped bill was presented in 2010 in Parliament. The question of distance learning as it regains momentum when the concept of Open University is debated retains the attention. The Open Education concept in the context of a small island like Mauritius is discussed in this paper using as frame of reference the Open University of Mauritius Act and the governing legal framework and placing the debate in the wider context of existing Open Universities in the African region. The paper ends with the elaboration of a national open education model based on the experience and lessons learned during a ten-year action-oriented research and experiment in the field at the University of Mauritius.

Keywords: Open University, Open Education, Open Educational Resources, Instructional Design, e-Learning

INTRODUCTION

In between the year 2000 to 2005, the concepts of open learning and technology-enhanced learning were on the political agenda of the government. The first such initiative in terms of technology-enhanced learning was the very successful initiative called the Mass Computer Proficiency Project (CPP) that was targeted at making mass training in basic information technology in a bid to sustain the strategic objective of making Mauritius a cyber-island. The initiative was later enhanced, but within the same goal through the Universal IC3 (Internet and Computing Core Certification) in 2005. The pedagogical philosophy behind the CPP and IC3 courses was based on the "learning-by-doing" approach and "learning IT through IT" which meant that contents were made available in digitized form comprising of multimedia and hypermedia elements. At the same time during the 2000-2005 periods, the government came up with the idea of an open-learning institute which would be fundamentally absorbing the Mauritius College of the Air. The idea later evolved into that of an Open University in 2005 but it never came into operation, until a revamped bill was presented in 2010 in Parliament. A recent press article in November 2011 (Le Mauricien 2011) reported that the Open University of Mauritius would be operational before the end of the year. We are currently in 2012, yet no sight of any operationalisation of this University. A similar press article dating back in 2010 (L'Express 2010) highlighted that the said University would be operational before the end of that particular year also. A related press article (Defimedia 2011) in October 2011 revealed that Open University of Mauritius would be 'one of the best institutions which will offer distance learning courses' and that once it is operational, it will achieve the 'Government's vision of having one graduate per family'. These were reported to be the statements of the Minister of Tertiary Education and Scientific Research. The press article in 2011 (Le Mauricien 2011) talks of the collaborations with the Commonwealth of Learning and that in a first instance courses of the Open University of UK would be offered by the Open University of Mauritius. This is a first contradiction as the Open University of Mauritius has as objective to offer courses at affordable costs while the

Open University of the UK cannot really be counted as an 'affordable' institution in terms of cost for many Mauritians. Other similar press articles reporting either the Minister's statements or extracts of interviews from technical officers of the Ministry highlighted that all the plans were ready and that at least the first instance, the Open University of Mauritius will offer courses from other institutions like the Indira Gandhi National Open University (IGNOU) of India.

The very first definition of a University is that it is empowered by law as an awarding institution (Wikipedia 2012). It has the power to confer its own qualifications in its own name to its students. While the Mauritius College of the Air (MCA) exist since 1971 and its mission was precisely mass education through mainly radio and television programmes, it had over the years moved into running of more formal courses through affiliation to either local institutions like the University of Mauritius or external institutions like IGNOU. The reason for this was precisely the fact that the MCA was not an award institution. Now that the Open University has been (logically) created, the move of keeping the same operational model of the Mauritius College of the Air to run a University is not well articulated. In most of the press communiqués and other public speeches, there seem to be a confusion of the concept of open education and the distance e-learning modality. There is an amalgamation of these two concepts which to those driving the initiative, seem to be one and the same thing. This is obviously one of the main misconceptions of confused minds that have to some extent contributed towards the inability to operate the university after so long. Perraton (2000) has pointed out that the term 'distance education' captures the economic imperative of gaining benefits of scale, low cost and consistent quality, whereas 'open learning' evokes the political imperative of widening access. It is important to note that Kanwar and Daniel (2010) argued that establishing new brick and mortar institutions is not a viable option for most countries, especially developing ones. Back in 1988, there was only one Open University in Africa and there are currently four in all in Africa namely the Botswana College of Open and Distance Learning, the Open University of Tanzania, the Namibian College of Open Learning, and the National Open University of Nigeria. One can easily understand the need of open learning institutions in those countries given their geographical sizes and the dispersion of their inhabitants. The rationale of an open university in Mauritius is not so clear in terms of the size of the island. Therefore the vision and mission of such an organization should be clearly linked to the national priorities and in line with the needs of our society.

It is worth mentioning that the Open University of Mauritius is the third public University in Mauritius, although technically it is not yet operational.[1] The business model so far is not clear for the University. A quick scan of the literature available on open universities also reveals University failures in distance education initiatives due to either the inability to attract students or to expand the courses catalogue. One such case is the Malaysian Virtual University. *Malaysian Virtual University* (MVU) was conceived in 1996 as a degree-granting institution aimed at increasing the participation in commerce and industry of the indigenous Malay ethnic group. One of the country's largest commercial co-operatives was behind it and an American company was brought in to design it, but not as a web-based distance teaching institution. The MVU did not come into being, however, for lack of agreement regarding where, when or how the courses would be developed. Nor did it obtain the necessary licence to operate from the government (Ress and Sonberg 1998). *Open University of the United States* (OUUS), after three years of financial losses and low student enrolment, was closed in 2002 by the UKOU, its parent institution. It had not yet obtained full US regional accreditation (Hawkridge 2003).

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[1] The Open University of Mauritius has started in operations in February 2013. At the time of writing of the article in 2012, it was not yet operational.

In the context of the Open University of Mauritius, the following questions are pertinent:

- Is it important to have a new university if opening access and flexible learning are the main objectives to be achieved?
- What would be the operational and the business model of the Open University? Will it be funded from public funds or will it aim to achieve significant financial independence?
- What will be the pedagogical and diffusion model for the Open University and how these will be linked in an integrated framework throughout the educational process and the student life history?
- What will be the target audience and the strategy to attract local and foreign students to the University? How will it compete with the UNISA, IGNOU and other Distance Education Universities operating in Mauritius? How will international recognition of the University be achieved?
- Will the Open University of Mauritius be a real university or will it just be the Mauritius College of the Air 'operating' as a University?

POTENTIAL OPEN EDUCATION MODELS

Open universities were traditionally oriented towards the "massification'' of higher education (Kanwar 2011). Many open universities do not insist on entry qualifications, allow learners to accumulate credits at their own pace and convenience and are flexible enough to allow learners to choose the courses they wish to study towards their qualification (Kanwar and Daniel 2010). Kanwar (2011) talks of three generations of Open Education Models. The first generation according to her relied on technologies like print, radio and television. This model is still found today in a number of countries and the Mauritius College of the Air is still relying on such technologies. The second generation of open education model originates with the rise of the internet where learners could be supported through enhanced communication patters and interactivity both with peers thereby forming online communities or with their tutors or with the multimedia digital contents. However, the internet has witnessed itself two generations namely Web 1.0 (consumer driven) and Web 2.0 (consumers are co-creators) and many are even talking of Web 3.0 (semantically intelligent web). It is therefore debatable whether open education models might have been in three generations as multimedia based materials, online video streaming, and other Web 2.0 based social networks have given a new dimension to the concept of open education.

Finally the third generation as highlighted by Kanwar (2011) "*may be seen to commence at the turn of the century with the Open Education Resource movement which is based on the idea that knowledge is our common wealth and that technology can help us share, use and reuse it*". From the perspective of the evolution of technologies, one can reasonably argue whether open education models are in the 3rd or 4th generation. However from a more pedagogically oriented perspective, we would rather pitch open educational models at the second generation. If we look at the Open University of the UK model or the UNISA model in Africa, we would observe that these traditional distance education universities have taken some time to fully adopt e-learning as the main distance teaching-learning modality. Their primary mode of functioning was to have university antennas in the form of learning centres where students could attend tutorials and other face-to-face sessions to a centre located quite close to their places in terms of geographical proximity. With the rise of the internet, the world-wide web coupled with exponential increase in bandwidth and advanced communication tools, one can reasonably argue that modern open universities would be virtual, and follow the concept of schools without walls. This would only mean we are in the second (operational) generation and this will englobe a form of all the technologies that were used in the four

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(technological) generations described above. Radio and TV will take the form of podcasts and interactive multimedia, or live webcasts, while the learning centres would be virtual classrooms and paper manuals would be released as free e-books or in the form of interactive multimedia. The subject matter experts and content writers will be busy in aggregating open resources to form complete courseware that can be packaged using universal learning standards to ensure portability and interoperability across platforms.

A NATIONAL OPEN EDUCATION MODEL

The question of whether Mauritius really needs an Open University or a National Open Education model is not a mutually exclusive one. However, while the concept of a University will in essence denote autonomy, what is more important is for the Open University to have a functional open education model.

The Policy Framework

Entry Requirements, Granularity of, and enrolment on Programmes of Studies

The Open University of Mauritius although governed on the legal side by the act of Parliament, needs to have a clear Open and Distance Education policy. Different types of programmes must be identified, along with the lowest granularity level to which a programme can be broken into. There is a need to define clearly the general entry requirements at the University. The general entry requirements will define the degree and extent of openness of the institution.

The policy should define if the enrolment on its programme of studies will be bottom up or top down. This means whether all students will enrol on specific modules on an stand-alone basis and upon accumulation of enough credits, will be required to enrol on a programme of studies in case they want to pursue with the studies or the students will be able to choose a programme right at the

start as in conventional universities and then complete the programme in a highly flexible manner. There is also the issue of minimum and maximum programme duration and whether full-time programmes will be on offer. Open and Distance education programmes are very often caught up in the paradox of full-time or part-time education. In academic management terms, a full-time student will be expected to complete a particular programme of studies in the minimum duration and will enrol on a maximum number of courses. The student is also expected to be 'attending' classes in the day. A part-time student will ideally be a working student who studies after hours or during his or her own free time and normally completes a particular programme of studies on a longer time period.

With the emergence of e-learning where course contents and tutor interaction can take place at any time, the classification model for full-time and part-time education is mixed. In reality the concept of full-time and part-time does not even apply as the programme should just be set to be on flexible study mode.

Accreditation of Prior Learning

The definition of the general entry requirements will be a critical factor in defining the openness of the system as well as the future reputation of the University. This is one of the most difficult tasks as there is a need to decide on potential restrictions on age of applicant, minimum level of education achieved and relevance of work experience (Daniel 2011). Depending on the University's admission policy a National Accreditation of Prior Learning mechanism becomes of utmost importance as learners must be able to get some recognised equivalence with respect to admissions criteria. While the University can very well open its doors to occasional learners who are not seeking any formal educational qualifications, learners without the prior qualifications using the classic route might find themselves heavily penalised later on if the overall system does not follow up with

the appropriate changes. A concrete example is the recent Government policy to allow students with 3 credits at Ordinary level to proceed to Advanced Level. A student with 3 to 4 credits at Ordinary level may well perform very well at Advanced level but will be automatically disqualified for a place in a public University such as the University of Mauritius simply because the general requirements for admission on the University of Mauritius programmes is to have 5-credits at Ordinary level.

The Educational and Pedagogical Model

Courseware Engineering and Development

An Open University focusing on e-learning and modern distance education technologies need to have an underlying educational and pedagogical model for the design and development of its courses.   While Open Universities existing throughout the globe are basically very large institutions and they operate on mass education models, the one-size-fits-all approach in terms of content and underlying pedagogies are most appropriate. This means that the classic content-based approach is useful given that it is easy to disseminate and to manage the educational process.

Courseware development and authoring is also an important element to take into account. The Open University will need to have a pool of subject matter experts, instructional designers, and educational technologist for the authoring of content. The decision is whether to use a decentralised system for the subject matter experts (SMEs) or whether all SMEs will come from the establishment of the University. It seems inevitable that the University will need to have recourse to external subject matter experts for the development of its content and a pool of tutors to deliver the content.

Open Educational Resources

As highlighted by Kanwar (2011), the current open education model is based on the concept of the open educational resources movement. She highlights the growth of the OER movement within developing countries highlighting the examples of Sakshaat, the Indian Government's OER project, the China Open Resources for Education Initiative, Vietnam's Open courseware and Japan Open Courseware Consortium. However the primary concern of the Open University of Mauritius will not be one that is related to developing open education resources but rather to how can existing OERs and repositories be best used to provide a high quality learning experience to the students.

Learner Support and Tutoring

The Learner support model and tutoring framework will also be critical to the success of such an initiative. It is also important to decide on how tutoring occurs. The questions that are pertinent here are:

- Will it be mostly or only online tutoring or there will be face-to-face sessions? Face-to-face sessions will impose restrictions over the target market in case the Open University is trying to attract foreign learners.

- How will the University model the efficacy of online tutoring and the commitment of the online tutor?

- What is the cohort size that will be allocated to a tutor? What is the minimum and maximum size of a normal cohort?

The cohort size policy will determine the pedagogical model to be used. If the University wants to promote constructive learning and competency building, classic e-book approaches with drill and practice questions will not suffice. On the other hand, supporting an activity-based pedagogy requires more time and effort from the tutor and a higher degree of involvement of the learner.

The Delivery Model (Technology)

The trap of e-learning technologies misconception

The Open University of Mauritius will definitely look towards modern distance education technologies that can easily be mass-customised. There is a misconception by many IT professionals and education managers, witnessed from more than a decade of field experience that deploying an e-learning platform like MOODLE does not make an institution e-learning ready. E-learning in the context of an Open University cannot just be summarised to "*just go on Moodle.org, download and install the learning platform, put some contents, enrol your students and there you go!*". With such a recipe at hand, any new e-learning initiative in the context of Open and Distance Education is bound to be a failure. The delivery model of the Open University needs to be carefully planned especially if the front end will be an e-learning platform.

Integrated Systems and Interconnectivity

There is a need to decide on whether the IT services of the University will be an integrated platform from student application, enrolment to following online courses. This is a model that is already in use in large distance education institutions like the University of South Pacific where students have single sign-on facilities to access the different interconnected information systems throughout their student life. Integration of student information systems with the delivery front-end is an important aspect for the smooth running of an Open University where the emphasis is on e-learning technologies. However from a perspective of openness, while this is an important and desirable feature of the technological model, it might not be necessary if there is a good synchronisation of the administrative department with the department responsible for e-learning. Interconnection of the two systems will depend on the business strategy of the University. If the University wants to promote global openness like the OpenLearn initiative of the Open University of the UK, or IGNOU's portal FlexiLearn (Kanwar 2011), then keeping the flexibility of having both interconnectivity and openness of the learning platform is a wise solution.

The e-learning Platform

The management of an e-learning platform with a few courses, lecturers and students is not of the same complexity when there are hundreds of modules for different programmes of studies with thousands of users and a few hundred tutors and academics using the system. The complexity of tasks related to the technical and administrative management of the e-learning platform grows exponentially. The management of the e-learning platform in this case should not be confined only to information technology professionals or to one e-learning administrator. The University should set up the e-learning management committee to oversee the day-to-day operations and to work on the procedures for the use of the e-learning platform. The e-learning Management Committee should have an IT manager, the e-learning Platform Administrator, the e-learning Manager, and a Quality Assurance officer. There should be an e-learning implementation team led comprised of a system administrator, the e-learning platform administrator, an education technologist and a system analyst.

Backup strategies and disaster recovery plans should be worked out and at least two servers (live and backup) should exist. There should also be a production server for the development of materials and the implementation testing for new elements.

Proprietary or Open-Source?

While proprietary platforms can cost a lot of money to the institution, there are guarantees on platform uptime. On the other hand most service providers in this area use the cloud concept where the client has to migrate all its content to a third-party. On the other hand, with the surge in the Open-Source movement, and the success of the MOODLE e-learning platform, it seems that a large number of educational institutions world-wide are using this platform. However usage of MOODLE can be done in a variety of ways and in different educational settings and scenarios. Among issues with respect to

MOODLE is that development is done by a distributed community of developers and very often the embedded educational concepts in some of its functionalities might not correlate with an institution's actual procedures and processes. Another issue is that when MOODLE is implemented for large e-learning initiatives, it becomes a very sensitive issue to migrate between different versions and releases of the platform. This might imply re-training of the whole technical and academic staff for an institution and this might prove to be costly and a technically complex activity.

Course Structure on e-Learning Platform

MOODLE e-learning platform offer high flexibility in the way courses and units are arranged in terms of taxonomy and menu structure. The MOODLE front-end is basically the e-learning portal entry point, and aspects of usability and navigation are important. Simple decisions like whether a list of modules will be available, or students will see their programmes of studies on which they are enrolled first, or the highest point of entry will be Faculty/School wise and so on can have a big implications if ever we find later that things have to be changed. It is important to know how each logical online cohort will be managed in the online environment. Course versioning and cohort management are important aspects that need to be well planned in advance so that the e-learning platform front-end structure can be customised accordingly.

Compliance to Learning Standards (SCORM)

MOODLE, just as most other e-learning platforms are SCORM compliant. SCORM-compliance means that learning objects following this standard can easily be backed up and restored to any other SCORM-compliant e-learning platform. This ensures inter-operability of resources between platforms and by extension between universities and institutions. SCORM compliance also provides the additional facilities to track learner progress and completion thereby automating to some extent the monitoring process online. This allows the institution to decide on decentralised assessment systems where continuous assessment is the key towards successful learning.

Standard Course Formats

Academic freedom is a very important concept in universities where academics enjoy the freedom to conduct free inquiry and to teach according to their preferred styles using an unrestricted variety of pedagogical methods and teaching strategies. This means that academics can structure their courses and their lecture notes in the way that they perceive as the best way to deliver. However, in a virtual learning environment in an Open University setting, experience has shown that having courses structured in different formats can maximise the learning curve of the learner to familiarise with the environment and can also cause confusion throughout the semester. For instance, MOODLE allows a course to be authored in a number of formats such as weekly format, chapter-wise format, or social format (unstructured). A lecturer teaching a course online can put a number of MOODLE blocks on his course space and can organise the content in different ways. This can be acceptable in mixed-mode institutions where academics use the platform to complement their face-to-face teaching. It is advisable that the e-learning platform be customised in one particular layout and all courses that are authored on the platform use the same layout or a set of possible layout/forms that have been approved beforehand. Academics should be given limited rights so as they do not breach the agreed and approved formats for course layouts as they will be mainly tutoring the courses online and not 'teach' them online. It is recommended that the learner's visual perception is not overloaded with all sorts of unimportant MOODLE blocks that are of little pedagogical value to the learning process.

Bandwidth

Bandwidth is a very important consideration in any attempt to upscale any type of online

activity where unexpected rise in traffic or peak access hours can cause a system to crash. From past experience such scenarios can greatly undermine the initiative and the reliability of an institution and cause general frustration among students. There are a few creative ways to handle bandwidth issue as it is not pragmatic to keep increasing bandwidth with increasing number of students. From the experience of the e-learning initiative at the University of Mauritius, bandwidth issues occur mainly under the following conditions:

- The start of the semester when all students are accessing the platform practically at the same time. The recommendation is that start dates of courses can be made to vary to spread the consumption of bandwidth.

- The submission deadlines for assignments. It has been observed that students will always rush in at the last hour before closing date of assignment submission to upload their work. Coordination among programmes and a pre-defined timetable for assignment submission can ease the issue.

- Avoid overloading the platform with built-in content as there is a processing overhead with each page that the platform retrieves. Videos should not be hosted on the e-learning platform. Instead the University can have recourse to streaming services or use alternative offline media to disseminate such resources.

- At the end of the semester during revision and exam period where students practically 'sleep' online. Any loss of service or drop in service quality during that particular period will spark reaction and complaints from students. The recommendation is that students should have access to downloadable versions of course contents for revision and exam preparation purposes.

The simplest technical solution is to have distributed load balancing servers and with bandwidth of very high capacity. But this is a very costly solution unless there are guarantees about the real scale of operation of the University.

The Business Model

Unless the Open University of Mauritius will be fully financed by Government which is quite unlikely, it will have to rely on a sustainable business model. Being a public university it would definitely benefit from Government grants. On the other hand, it seems that its courses will be fee-paying. Developing high quality distance education materials is a costly process and it requires subject matter experts, educational technologists, instructional designers and IT professionals. To operate efficiently, the Open University will need to have recourse to different such teams working in parallel.

On the other hand, the Open University needs to find the means to keep the cost of courses relatively low to ensure it has the critical student mass to operate effectively. With the global competition in the Education sector, and in the midst of the prolonged economic crisis Mauritius cannot afford to keep pouring public funds to sustain initiatives that are not viable in the medium to long term. One contemporary model that is gaining momentum at least theoretically for the time being is the OER business model for open education (Downes, 2006; Dholakia et al. 2006; OECD 2007).

However, there is a need to distinguish clearly between what is perceived to be OER business models and business models for Open Universities. Some authors equate OERs and Open Education to giving away knowledge for free. When we talk of Open Universities, we cannot simply equate free knowledge to free qualification. OER business models are also very much applicable to Universities mainly in developed countries such as the Massachusetts Institute of Technology who have over decennia or even centuries produced knowledge in the form of content.

Giving the content away for free can be seen as a strategic move to better market the Universities and their qualifications in the rise of globalisation. The Open University of Mauritius is definitely not in the position to adopt such a business model in its current form. If OERs can be contributory to a business model then the model should rely on cost-effective ways to 'consume' foreign OERs that can be locally rebranded without much additional cost and embedded in qualification pathways to the students of the Open University of Mauritius.

Such a prototype model has been used at the University of Mauritius with quite positive results although at larger scales, it would be difficult to predict how the model will fare. One should not forget the sad reality of Open Educational Resources – they are not produced freely, but they are rather distributed freely. This implies massive investment and funding is needed before repositories like OpenLearn of the Open University of UK or MIT Open Courseware Repository and others such as Connexions and Curriki are developed. Even the innovative idea behind the OER University concept (WikiEducator, 2011) has to rely on funding in terms of time and money from 'donor' institutions to address the sustainability of the OERu movement.

The business model of the Open University of Mauritius will also depend on its strategic objectives. If the university wishes to operate as competitors to regional distance education universities, then it will have to choose one business model which will provide the university the competitive edge needed. On the other hand, if its mandate is to look mainly at the development of manpower in specific areas related to national priorities then it might well develop a different business model as the operation of the University can be seen as a strategic investment in itself for the country to benefit in the longer term.

REFLECTIVE DISCUSSION

The question of distance learning as it regains momentum when the concept of Open University is debated retains the attention. Why do we not call "Open" universities as "Distance" universities instead? Is open learning same as distance learning? Of course not! But many of us will no doubt find an automatic association of open-learning to distance-learning and vice-versa. The other term that is often associated with open learning and distance learning is lifelong learning. While distance learning reflects more to the mode of delivery of content and the delocalized and asynchronous type of interaction between the learner and the teacher, the terms open, lifelong and flexible learning mainly reflect of mode of education. The mode of education is often confused with the mode of delivery of learning content. The mode of delivery of content for open, lifelong and flexible learning can very much be traditional face-to-face classroom-based lectures while the mode of delivery for distance learning can be printed manuals, digitized content on CD/DVD, websites and so on.

Open learning basically puts the emphasis on two major concepts, namely that of access and flexibility. This means that access to education and training is provided to those, who in a traditional setting would not be in a position to afford (financial, professional or social constraints) getting to full-time education or to attend scheduled classes at well-defined specific times. Access is also related to those who lack formal entry requirements on courses but who have years of working experience which can be used as recognition to compensate the lack of formal entry requirements to their desired study field. Open learning also provides the flexibility to those who want to study at their own pace and who only want to get a certain specific knowledge about a specific subject without the hassle of official enrolment and sitting for exams. Over the recent years, open education has taken yet another dimension, that of free education, but mostly in an informal mode of learning. What has

emerged as open educational resources, are basically courseware released by known universities like the MIT and Open University of the UK, where anyone can 'enroll' without the payment of any fees and follow the courses on their own.

CONCLUSION

Open Universities are mainly appropriate where the base market is quite large as such universities become cost-effective by making economies of scale. India, Malaysia, South Africa, the UK and Canada, for instance, have successfully implemented such initiatives. Moreover, the customer base of these universities more precisely the UNISA (South Africa) and IGNOU (India) span internationally. The cost of access to these universities is also quite low compared to other traditional universities. The funding mechanism of these universities need to be also effective, unless they are fully funded through public funds, which in the longer term and difficult economic situations may prove to be less sustainable. Mauritius, on the other hand, with respect to its size, geographical location and economic capability will definitely face much bigger challenges than the other open universities.

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