How can you maintain long term links to Japan while developing your career at home? A case study of Otowa Electric Co. Ltd. and Mugarura Amiri in Rwanda

Study Points:

Students are expected to experience the journey of a JICA scholarship student who studied in Japan. This alumnus, who attended the Kobe Institute of Computing and completed an internship at Otowa Electric Co. Ltd. (Otowa Denki) was able to successfully maintain links to Japan and bring Otowa's products to market in Rwanda. In addition to this, he is the CTO of a technology company in Rwanda.
Through this case discussion, students will reflect on the links and networks they have developed in Japan. They will discuss the challenges, obstacles and opportunities presented by maintaining links to Japan, and how such links can be created and maintained, and how this can be balanced with their career development.

Basic Information:

- **Region:** East Africa
- **Issue:** Maintaining long term links with Japan while building a career at home.
- **Key Words:** Networking, business, localization, links with JICA, lightning protection, internships, links with Japan
- **Country:** Rwanda
- **Time Period:** 2014-present

Characters:

Character	Description
Mr. Mugarura Amiri (protagonist)	Former African Business Education Initiative (ABE Initiative) for Youth scholarship recipient, CEO of a software development company in Rwanda.
Mr. Yoshida Atsushi	CEO of Otowa Electric Co. Ltd.
Ms. Nadine Uwase	JICA Rwanda National Staff

Abbreviations and Translations of Japanese Concepts

JICA	Japan International Cooperation Agency
KIC	Kobe Institute of Computing
CTO/CEO	Chief Technical Officer/Chief Executive Officer
IoT	Internet-of-things
Tankyu	Problem-based learning
Otowa Denki	Otowa Electric Co. Ltd.
NTT	Nippon Telegraph and Telecom, a telecoms company
Radio Taiso	Morning radio exercises/calisthenics (a common practice in Japanese companies)
Takoyaki	Octopus pieces fried in balls of savory batter, a specialty of the Kansai region of Japan where Otowa is based
RURA	Rwanda Utilities and Regulatory Authority

Summary:
Mr. Mugarura Amiri, a former ABE Initiative participant, completed his program in 2016. Since returning to Rwanda, he has successfully achieved the position of Chief of the Software Development Department in a software development company, and separately to this has established a long-term relationship with Otowa Denki, a Japanese company specializing in lightning protection devices. Having successfully developed both parts of his career, he has significantly contributed to Rwanda in numerous ways. This case explores how he was able to successfully maintain and balance his relationship with Otowa while sustaining a demanding and impactful career in software development at home.

The chronology of events in this case study is as follows.

Chronology of Events:

2014	Start of Mugarura Amiri's time as an ABE Initiative student at Kobe Institute of Computing.
2016	Mugarura Amiri participates in an internship at Otowa Denki in Amagasaki, Hyogo, Japan.
Early 2017	Mugarura Amiri returns to Rwanda.
June 2017	Mugarura joins his current company
2019-2024	The JICA-Otowa Electric joint project is conducted alongside RURA.

Key Questions:

Students are required to discuss the following:

1. What were the factors in Mugarura's internship at Otowa which played a role in the long-term success of their partnership?
2. How are Mugarura's skills from Japan are being put to use in Rwanda's public sector?
3. How did Mugarura maintain a long-term relationship with Japan and JICA more generally?
4. If you were in Mugarura's position, would you want to prioritize developing the Otowa path, the software engineering path, or try to maintain the balance?
5. What Japanese technologies or companies do you think could help to address challenges in your own country?
6. What do you think would be the challenges faced in doing so, and what from Mugarura's experience could be applied to help overcome them?

Prologue:

Mr. Mugarura Amiri joined the ABE Initiative in the first intake in 2014, having previously run his own private startup company focusing on social innovation software. He had previously studied in Japan for one month as part of a training

program on *tankyu*, and after that he felt strongly motivated to pursue further study. At the time, he was interested in the US and the UK as well as Japan, but it was Japan which ultimately provided him with the opportunity to take up a place on a Masters' course at the Kobe Institute of Computing in Hyogo Prefecture.

Mugarura comes from an IT background, having earned a degree in computer engineering at the University of Rwanda. He sought to build on this knowledge in Japan, and he focused his efforts on data science and Internet-of-Things (IoT) issues, specializing in healthcare applications for his Masters' thesis. An expert in practical uses of IT through software development, his former company, which was eventually purchased by the Japanese e-service company DMM, had focused on the creation of social innovation software, giving him a strong preexisting knowledge and skillset.

Mugarura was well-prepared for KIC. KIC focuses on *tankyu* and social innovation, making him a strong fit for it as a person already familiar with both from his previous experience. He enjoyed the experience of exchanging views with and learning from people in an international environment – both with his professor, and also with other students both from other African countries and from places such as Afghanistan.

In the spirit of *tankyu* and social innovation, Mugarura wanted to focus on something practical which could be deployed remotely in low-income areas or countries, he focused on using different types of sensors for patient diagnosis. His thesis was titled "Remote Patient Monitoring Using Health Care Sensor Networks in Rural Areas in Rwanda", focused on IoT devices in healthcare. He was also able to publish some of his research in a neuroscience journal and attend an academic conference.

Mugarura's Otowa Denki Internship

Following the successful completion of his academic program, Mugarura began a six-month internship at Otowa Denki in Amagasaki, Hyogo Prefecture, which is within commutable distance of KIC. Internships are a key component of the

ABE Initiative experience, and Mugarura wanted to work in a company after it was recommended to him by his KIC supervisor for an earlier short-term internship[1]. Otowa Denki sells surge protectors to guard against lightning strikes, which Rwanda is especially prone to as a country. In fact, the Lake Kivu region, along the Rwanda-Democratic Republic of Congo border, is among the most lightning-prone regions in the world, being second only to Lake Maracaibo in Venezuela [Dauphin, 2024]. Lightning strikes cause numerous issues in Rwanda – they lead to livestock deaths, property damage, fires, and sometimes even human deaths, presenting serious economic and safety risks for residents. Having seen this first-hand, Mugarura was also attracted to Otowa for its relevance to a prevalent issue in his home country.

It is, perhaps, fair to say that this is not a widely known issue in Japan. It was certainly not known to Otowa Denki, despite an existing export business and a significant market share in Japan. Otowa's specialization, being in lightning protection, is, of course, a very strong fit for a place such as Rwanda. In Japan, the company enjoys relationships with major companies such as Japan Railways and NTT, among others [Hasegawa Electric Company, Ltd., 2025], but before Mugarura they had no significant business in Africa.

Mugarura recalled that, as an intern, it took time to build a relationship with the company's President and Executive Director, who he described as being very open minded and willing to listen. By developing these personal relationships with the senior leadership of Otowa Denki, Mugarura was able to convince the company that there was a potential business opportunity in selling the surge protection devices in his home country. This was the result of direct communication with those with decision-making power. He describes Otowa as being like a second family in Japan, and he maintains close contact even today on a frequent basis.

The then-CEO of Otowa, Mr. Yoshida Atsushi, was directly quoted as saying "I

[1] ABE Initiative participants usually complete a compulsory short-term internship mid-program and an optional long-term internship upon the completion of the academic portion of the program. In Mugarura's case, both took place at Otowa Denki.

heard from one of the trainees, Mr. Mugarura Amiri, about the situation of lightning damage in Rwanda, and together we began conducting field research. As a result, we found that there were lightning protection products made overseas available locally, but that sufficient countermeasures were not taken. Also, standardization for lightning protection solutions, which are usually based on international standards, had not been developed." [Kato, n.d.]. Mr. Yoshida noted the limited impression held by his company of Rwanda, and spoke highly of the value of human connections to develop deeper knowledge. Mr. Yoshida recalled Mugarura's kind, eager, and collaborative personality, noting how he immediately fit in with the other staff despite the language barrier, earning trust by being proactive in taking part in Japanese workplace and cultural events such as Radio Taiso and a *takoyaki* party.

That was not all. Mugarura, during his time at Otowa, developed a web-based software application to analyze lightning sensor data and to deliver visual insights through interactive tools, including geospatial maps. Building on previous skills and knowledge of programming and writing code, with a background in Java programming, his time at KIC saw an expansion of his skillset to include other coding languages such as C, which was the language he created the prediction software in. Mugarura had successfully used his existing skills as a software engineer, combining it with his new classroom knowledge from KIC, to create value for the company.

Consequently, Mugarura became not only an intern, but a valuable employee of the company in his own right, pathing the way for his future long-term partnership with the company.

Balancing Software Development and Otowa in Rwanda

Following his time at Otowa and in Japan more broadly, Mugarura returned to Kigali, Rwanda, where he continued his career in software development. Since 2017 he has been working at a software development company which produces software for use in the public sector. He has been in this role for eight years, having started in 2018, and he is now Chief Technology Officer. Mugarura has also continued his relationship with Otowa, and has helped to introduce their

lightning protection technology in Rwanda. Mugarura's career has thus had two courses running in parallel. On the software development side, Mugarura's company creates software for the Rwandan government for the public sector and the Rwandan National Data Center. He cited two major projects that he has been involved with in this capacity.

First, the company built a system to assist with intra-governmental administration. This system allows for the easy sharing of meeting notes, minutes, booking of meeting spaces, and so on. This system is now used by 160 government institutions and has around 50,000 users. Government effectiveness is a key component of administrative good governance, and one of the World Bank's six key governance indicators [World Bank, 2023]. The system developed by Mugarura and his team combined and simplified numerous processes which were either done manually, through separated rather than integrated systems, or both. This system saves significant time, which can then be put to use more productively. This program has garnered interest from other African states, and is being actively maintained and updated with new features, with an end-goal of entirely eliminating paper-based processes and digitizing all government systems.

More recently, Mugarura has been involved with the creation of software for the issuance of digital criminal record checks. Previously, the process of gaining a criminal record check certificate involved a manual visit to a police station and the filing of a paper application. The digital issuance system, which can be done through the government's Irembo.gov online platform and accessed via a smartphone or PC, has simplified this process and made it so that people can apply from anywhere, tracking the whole process from application through to payment and issuance.

Mugarura's company and his expertise were good fits for the Irembo project, and for Rwanda's IT-focused development strategy more broadly. Irembo.gov is a public sector digital service platform with a wide range of functions which cover everything from certificate and visa issuance to driving license test bookings and even museum bookings [Irembo.gov, 2025], with the aim of increasing convenience for ordinary citizens. It is operated as a public-private

partnership, and Irembo gains a commission for each process completed on the platform, giving it a natural incentive to increase its feature set and ease of use [Public Digital, n.d.]. Criminal record checks are used for gaining various jobs such as in schools, in the police force, or in the national government, and improving the efficiency of the certificate issuance process is thus beneficial both from the perspectives of convenience for the applicant and for public safety more broadly. The interest garnered from outside Rwanda also aligns well with Rwanda's stated ambition of becoming Africa's premiere IT hub and an exporter of software.

How about Otowa?

Since returning, Mugarura has also acted as a representative for Otowa and maintained a strong relationship with the company, which has since sold the devices across the country and partnered with JICA in order to test the waters for future expansion. The company would not have known about the lightning issue without him, and his strong proactive relationship with them has helped the company identify a new and promising business opportunity.

As previously mentioned, lightning strikes in Rwanda are a significant issue, and the country is especially prone to them. Otowa's surge arrester devices, which work by providing a safe route to ground in the event of sudden voltage spikes to protect equipment from shorting out, are a state-of-the-art solution developed in Japan and deployed widely in public infrastructure, including on *Shinkansen* bullet trains and on telecoms antennae. Otowa produces a range of products for different purposes, including for public infrastructure, individual buildings, and for specialized applications such as telecoms and data centers. It also works on custom systems on a contractual basis [Otowa Electric Company, Ltd., 2021].

Of course, this presented its own difficulties. As there is no single one-size-fits-all solution and because correct selection and installation is crucial for operational effectiveness, technical expertise is required. This made it difficult for a company like Otowa, with no previous experience in Rwanda and no permanent base there, to enter the market, but Mugarura's internship had given

him the skills and knowledge necessary to carry out this role. He quickly became a vital local asset, with his JICA link presenting new opportunities for the company as well.

Partnering with JICA and Otowa in Rwanda

Mugarura is a frequent visitor to the JICA Rwanda Office, and has good relationships with the staff there, having maintained close links since graduation. These links presented an opportunity for both himself, and for Otowa; collaboration on a public-private partnership project to allow Otowa to take steps into the Rwandan market.

Photograph 1: Mugarura working together with a Japanese engineer from Otowa.

Beginning in 2019, a JICA-Otowa Denki joint project in Kigali and Rutsiro, to conduct a verification survey on the installation of lightning devices on the Rwanda Utilities and Regulatory Agency's (RURA) headquarters and monitoring sites, was carried out following an application from Otowa under JICA's own "SDGs Business Verification Scheme" (Japan International Cooperation Agency, 2024). This followed a successful installation of Otowa devices at Tumba

College, which Mugarura was also involved in along with another former ABE scholar, and which had acted as a kind of pilot project for Otowa's devices in Rwanda being deployed to protect the college's data center.
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The new project in Kigali and Rutsiro had the objectives of verifying the effectiveness of the lightning arresters in their intended contexts, transferring skills to local staff, improving policies and regulations relating to lightning protection in Rwanda, and disseminating knowledge of lightning protection technology in Rwanda (Nakashima & Uwimana, 2019).

Mugarura was involved in this project in his capacity as a "bridge" between Japan and Rwanda, and has made numerous contributions. In 2022, five engineers from RURA visited Otowa in Japan, accompanied and introduced by Mugarura, and he has also been involved in the promotion of Otowa's "*Kaminari Onigokko"* educational game, which can be roughly translated into English as "Lightning Tag" (Kato, n.d.), and aims to provide fundamental lightning safety education by teaching children how to react when strikes occur through the game. Otowa believes that education about the value of lightning technology is vital to ensuring its widespread deployment, and it views Mugarura as a key partner in these efforts (Kato, n.d.).

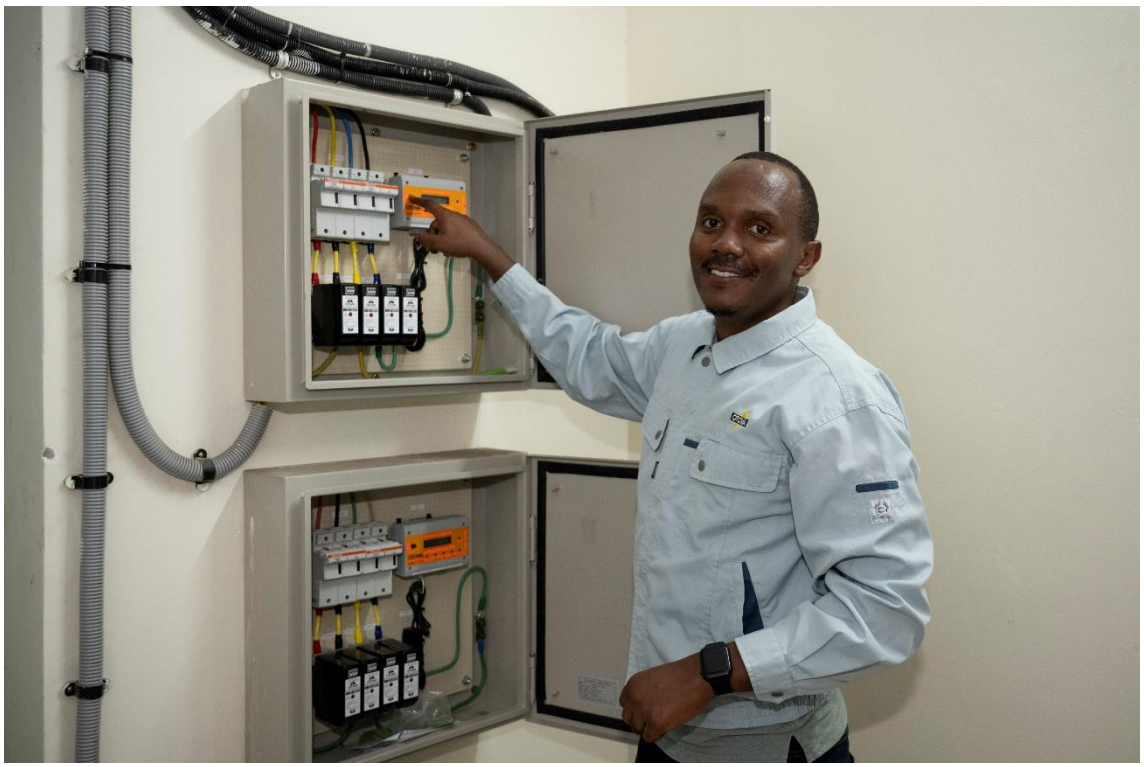
Balancing Otowa with Software Development

Of course, Mugarura needed to balance this with his regular job. Mugarura was, in effect, supporting the JICA-Otowa project in his own time. However, with careful planning and coordination, he was able to fulfil both responsibilities simultaneously, and continue his main work as a software developer while acting as a bridge between Japan and Rwanda. This was assisted by his close relationships with the various stakeholders – with Otowa, with JICA, and with RURA.

Mugarura's specific role was in coordinating between Otowa, JICA, and the various local stakeholders, in collaboration with Ms. Nadine Uwase of the JICA Rwanda office. Otowa described him as a trusted local partner, who was able to navigate issues that they could not. He secured the local subcontractor in

charge of physical construction, and was involved in meetings between JICA, Otowa, and RURA. The main difficulty had been in securing a partner institution in the Rwandan government – while RURA expressed strong interest, previous approaches to the Ministry of Environment and the Ministry in Charge of Emergency Management had been unsuccessful.

Consequently, the project had difficulties finding a local partner with the budgetary resources and interest in Otowa's world-class, but relatively expensive technology. As with many Japanese companies, Otowa's focus is on engineering excellence and long-term reliability, but it cannot compete on per-unit cost with alternatives from other countries. RURA, however, proved to be enthusiastic partners for the project from the beginning, both at the top and on the implementation levels. Senior management viewed the Tumba College project as a success, and they were interested in trying the devices in higher risk zones. RURA's engineers were keen to learn about Otowa's advanced technologies and learn from their best practices. This continued despite a change of management at RURA during the project's implementation and despite the timing being during the coronavirus pandemic.



Photograph 2: Mugarura with the Otowa lightning protection devices.

As time progress, Mugarura, RURA, JICA, and Otowa worked together to acquire the necessary permits and permissions to import Otowa's equipment, and training and installation sessions proceeded smoothly due to excellent coordination between the parties, which also kept costs down as much as possible. For Otowa, while they did send Japanese staff occasionally for technical reasons, much of the on-the-ground work for the project was left to Mugarura himself, who knew both the hardware and software sides of Otowa's products very well, further reducing the project's financial outlays. The strong alignment in the objectives of each of the interested parties, smooth coordination, and reliable scheduling meant that the project proceeded with remarkable smoothness, even while balanced with a demanding main job.

What next?

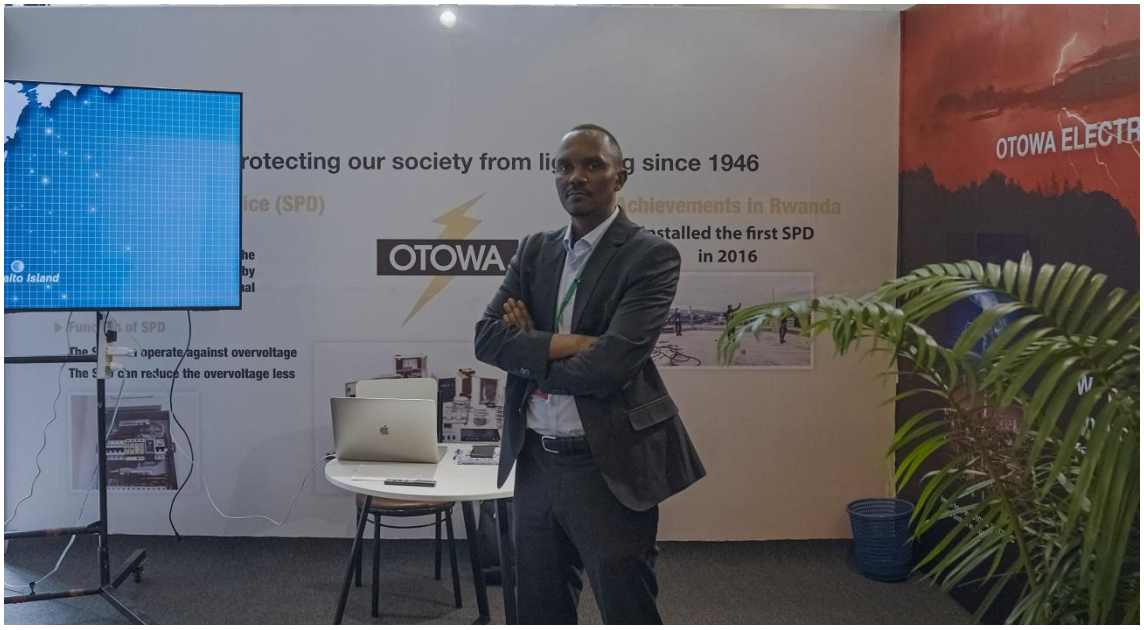
Mugarura wants to focus on two things in the future, and in keeping with the parallel nature of his career so far, one of these is in software development, and one is with Otowa. Mugarura, in short, wants to continue with his path of giving his all to both, rather than choosing one or the other.

On the software development side, Mugarura said that he would like his next project to focus on the healthcare sector, returning, in a sense, to his roots from the beginning of his ABE Initiative and KIC journey. There is significant potential for benefit here; Rwanda's healthcare sector is already among the most advanced in Africa, and its further development is a high strategic priority for a government which also values ICT integration to increase the quality of its services (World Health Organization, 2022; Ministry of Health of Rwanda, 2025). There is high demand in Rwanda for the software solutions that fit Mugarura's expertise, and these will provide perhaps yet another avenue for him to contribute to Rwanda's growth and further development. Irembo.gov continues to grow as a platform and add more and more functions – for health, four functions (laboratory tests, yellow fever vaccination, community-based health insurance or *Mutuelle*, and health facility licensing) are already available, and this will without doubt expand in the future.

On the Otowa side, there are ambitions to expand both within Rwanda and also beyond into the wider region. There has been interest from some localities in Rwanda which are particularly impacted by lightning strikes, and discussions are underway over the funding mechanisms which could be used for such purchases. Mugarura also continues to be involved with the training of local engineers in how to work with Otowa's equipment. Indeed, his interest in healthcare already led to the installation of Otowa's lightning protection devices at several medical facilities in Rwanda, preventing issues such as the loss of care during power outages while ensuring the stable and continued operability of equipment, and there is a growing case for expanding deployment further.

What can be learned from Mugarura's case?

Mugarura's case is exemplary in showing how a career can be built at home while also maintaining a strong link to Japan, but of course, there have been challenges along the way. Otowa has not yet achieved profitability in Rwanda, and the RURA project also needed JICA's input to succeed. Securing the budget for further procurement remains difficult for potential Rwandan partners despite growing interest and proven effectiveness at resolving the issue of lightning strikes. The role of Mugarura in resolving these issues in the RURA project was to act as a bridge between RURA, Otowa, and JICA, coordinating with each to secure the necessary cooperation which made the project budgetarily feasible. Moreover, his strong expertise with Otowa's technology reduced the need for Otowa to send engineers to Rwanda on a frequent basis; having an on-the-ground local expert meant that most issues could be resolved within Rwanda itself. He became a trusted long-term partner of Otowa and JICA in Rwanda.



Photograph 3: Mugarura at a visit to Otowa's headquarters in Japan.

Moreover, Mugarura's broader skillset is an excellent fit for Rwanda's national development priorities. As a deeply talented and highly skilled software engineer, his expertise fits not only with Rwanda's national *strategy* but also its national *ambition* of becoming a pioneering, world-class IT hub. This has undoubtedly been a strong factor in the success of his domestic career, which has made significant contributions to Rwanda's e-governance and has increased convenience and quality of life for ordinary citizens. Nonetheless, Mugarura's case stands out so much because even these major achievements are only half of his story, which ran in parallel with his relationship with Otowa.

When interviewed about the success factors in the Otowa case, Mugarura said that he believed it was important to have gone into the Otowa internship with a clear purpose; knowing about the issues that the lightning strikes caused in his country made Otowa an appealing choice for him. Indeed, this experience is at the heart of Mugarura's advice to future JICA scholars – "Go in with a purpose and think about what you can do with the company". This sense of purpose allowed the creation of a close relationship with the company, and this later facilitated the smooth communication which made the collaboration on the installation of the lightning protection devices possible, and allowed for the

successful balancing of both his software engineering work and his Otowa work.

By building a close relationship with a company and by having a strong purpose, it is undoubtedly possible for future JICA scholars to achieve similar results, even while balancing with another highly advanced and in-demand career at home.

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