

GoGlobal: How can contemporary design collaboration and e-commerce models grow the creative industries in developing countries?

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Abstract: Using previous case studies by the authors and a current live project, this paper considers whether the creative industries in a developing country (Ghana, Africa) can be nurtured through design collaboration and an e-commerce model to contribute significant economic growth through increasing international trade. The paper draws on practical experience of five annual projects, with a focus on GoGlobal Africa. Initiated in 2005, GoGlobal is a collaborative design research activity between the University of Technology Sydney, the Royal College of Art, the London School of Economics, RMIT Melbourne, and other partnering organisations. GoGlobal Africa was initiated in 2008 with 3 phases: creative studio with design students from the RCA UK and KNUST Ghana; an e-commerce process for supply, distribution and marketing; and a “hub” location to facilitate project delivery and dissemination. The context to GoGlobal is informed by the UNCTAD studies of global creative industries.

Keywords: *Design project case studies (primary keyword), design education, design management and strategy, sustainability, GoGlobal, interdisciplinary, design, cross cultural, e-commerce, design enterprise, developing economies.*

1 Introduction

Through research initiated by, among others, the United Nation’s United Nations Conference on Trade and Development (UNCTAD) there is data on the value of creative design industries for developing and developed countries [1]. In the UK for example these industries now contribute 7.3% [2] to the national economy, of which around 1% is artefact design, craft and fashion [3]. But for developing countries, there is a question of how to leverage design creativity for social and economic benefit using sustainable models given the context of low levels of industrialisation, poor transport and infrastructure, and weak financial systems. The relevance and value of addressing this question has recently been investigated at depth by the UN. To quote from the forward of their “Creative Economy Report 2008” [3]:

“...the interface among creativity, culture, economics and technology, as expressed in the ability to create and circulate intellectual capital, has the potential to generate income, jobs and export earnings while at the same time promoting social inclusion, cultural diversity and human development.”

Our research looks at finding ways of leveraging design creativity in a developing country. The innovative aspect of our focus is the use of two key elements designed to work together in a syndetic manner: (a) use of contemporary design collaborations, and (b) e-commerce models. The rationale for selection of these elements is explained below.

Use of contemporary design collaboration

The authors have experience of collaborative design at a higher education level and commercial practice level, and have majored on refining the techniques of contemporary design collaboration through an annual 'GoGlobal' academic investigation from 2005-2009. The GoGlobal project method was evolved iteratively based on feedback and observation. Over time, the quality of the work produced by GoGlobal indicates that it could be a successful vehicle for extension into a commercial-academic joint venture with the potential for financial success. There have been 5 key indicators for this potential. Firstly, manufactured items attracted international press coverage in both consumer and design media, for example: features in Blueprint in 2005, Axis in 2006 and Elle Decoration in 2006. Secondly, objects designed for GoGlobal successfully sold to customers in the later stages. Thirdly, the level of personal satisfaction was very high among participants in the GoGlobal: over 80-90% in feedback questionnaires; these questionnaires related to the amount learnt, the perceived quality of output, enjoyment of the project, benefit of collaboration, and cultural crossover benefit. Fourthly, every collaborative host institution was enthusiastic about future engagement on GoGlobal. Finally, a national agency, the Thai Creative Design Centre (TCDC), has used their experience of GoGlobal to help stimulate the design manufacturing sector.

GoGlobal projects have run annually since 2005. GoGlobal was initiated by Tom Barker at the Royal College of Art (RCA) and then developed with Ashley Hall of the RCA and Garrick Jones of the London School of Economics (LSE). The GoGlobal projects have focused on international design collaborations with industry and academia at a postgraduate (Masters) design level. The research into formats for successful collaboration was conducted through an empirical evolution of working models, a better understanding of collaborative partnerships, and integration of product innovation, production, social and economic factors. The selection of countries for the work aimed to explore design collaboration in a range of both developing and developed countries in distinct cultures, allowing a comparative assessment of the results. The principle research question on each of the GoGlobal project exercises may be summarised as: what are the most effective ways in which designers from different countries can collaborate to tackle a complex regional brief of the host country, creating better and more appropriate designs than they could as individuals? And, furthermore, can the effective working methods that are derived empirically transfer effectively across both disciplines and cultures?

Use of e-commerce models

Industrial design and production in a developing country has to be able address the issues of reduced levels of industrialisation as well as poor transport and infrastructure. The reduced levels of industrialisation restrict the choice of materials and production processes, as well as impacting on quality control and packaging. Poor transport and infrastructure makes the supply chain more complex and costly, as well as impacting on reliability and damage to merchandise. A further issue with developing countries relates to financial transaction complexities at every level relating to the payment for goods and materials, as well as shipping. Banking can be rudimentary and not cover all of the stakeholders involved in a project, interest rates can be very high and the use of cash for cash flow positive reasons and to avoid financial fraud can further complicate any system of trade. Furthermore, returns policies are problematic when goods have been shipped overseas.

It is a significant challenge to find ways of mitigating against issues of design and production, distribution and payment, and customer returns policies. On the basis of experience with GoGlobal, the authors decided that a paradigm was required that could potentially deal with as many of these issues as possible, and by-pass those problems that couldn't be solved. A similar approach worked for India's IT software and services booming

outsourcing industry [4] which utilised satellite communications with the West, bypassing an ancient national communications infrastructure. Hence, it was decided to investigate the use of e-commerce within the project. E-commerce can facilitate an online customer interface and ordering system, marketing and branding, all financial transactions throughout the supply chain, tracking and delivery supply chain management. E-commerce also has the advantage of being able to operate without traditional infrastructure.

2 Method

In answering the question “how can contemporary design collaboration and e-commerce models grow the creative industries in developing countries?”, a research method established framework components within the 2009 GoGlobal Africa project vehicle. The components were:-

1. Identification of an appropriate host developing country using *Positive* and *Negative* criteria. The criteria of *Positive* - conditions considered necessary or highly desirable for addressing the research question – were a stable democracy, no famine or starvation, no current wars or destabilising disputes, availability of a higher education university system, evidence of a creative population and culture, evidence of a satisfied and amenable population, evidence of an entrepreneurial activities with small to medium sized enterprises (SME's), English language usage widespread for ease of communication. *Negative* criteria – that the project and similar initiatives may improve or mitigate – were low international and regional GDP per capita, low levels of industrialisation, no notable export markets in designed products, basic transport and infrastructure, unsophisticated financial and banking sectors.
2. Establishment of an evolved model for contemporary design collaboration, based on analysis of the previous GoGlobal annual project collaboration parameters and results, with the aims to develop skills in working in other cultures, develop a global perspective on design, understand the differences and similarities, priorities and necessities between developed (industrialised) and developing countries, evolve an understanding of wellbeing and satisfaction through work beyond wealth accumulation, develop relationships and networks for global collaborations in design and production, evolve social and cultural elements with respect to design, exploration of personal goals and opportunities in life, establish international friendships, gain an understanding of skills, knowledge transfer and mitigate the limitations of monocultural working as well as encouragement of curiosity and creativity.
3. Identification of project partners for the execution phase with a local University partner for the research and project aspects and supply of local student participants, access to professional artisans with local means of production, an e-commerce business that can work within the project format, government organization to advise on policy, integration and development and international organizations to promote awareness of the project, and assist with peer networks and reviews
4. Establishment of a model for e-commerce for global reach into developed countries' markets, facilitating an online customer interface and ordering system, marketing and branding, financial transactions throughout the supply chain, tracking and delivery and supply chain management.
5. Establishment of the metrics for measurement of success in answering the research question, taking into account: (a) FRAMEWORK - project and interface structures: socio-economic benefit, creative workplace satisfaction, effective fit and ability to work within the country's relevant contexts; and (b) DESIGNS - success of the design work: qualitative aspects of the collaborative design output: the artefacts, suitability of the work for selling into markets in developed countries, avoidance of local ethnic design clichés or jarring cross cultural issues

6. Execution of project collaboration:

PHASE ONE: Run a creative studio with design students from the RCA UK with KNUST Ghana, and experienced Ghanaian makers/producers coordinated by Aid to Artisans.

PHASE TWO: Establish the e-commerce process for supply, distribution and payment, market the artefacts and raise the profile of the initiative through press, web, and other media routes.

PHASE THREE: Establishment of a “hub” location to facilitate the project training, support and delivery, develop the commercial venture and grow into an autonomous industry and publicise the project “blueprint” and run training and education for knowledge transfer of the venture.

3 Results

Identification of an appropriate host developing country

The continent of Africa was recommended by the UN and British Council for this project following consultation. Africa was considered to have a number of suitable countries initially on the basis of low GDP per capita and English language usage, as well as a lack of export markets in designed products. Africa is a diverse continent of 54 countries and it may be argued that this diversity is greater than that of Europe. For example, Africa is estimated to have 2000-3000 spoken languages. As the cradle of mankind, Africa has long fascinated and inspired creativity in the West, from modern art to music. Within Africa, the most country selected to match the rest of the criteria was Ghana. The lifestyle and attitude of Ghanaians is positive and friendly. Ghana's ranking among the “happiest” countries of the world is 51, ahead of China(54), Greece(58), India(69) and Zimbabwe (99) [5]. With a population of 23, Ghana's GDP (PPP adjusted) in 2008 was \$70 Billion, with a growth rate of 6%. The GDP per Capita of circa \$3,000, ranking Ghana at number 18 out of the 53 African countries (Egypt is \$5,600, South Africa is \$14,500) [6]. According to the international entrepreneurial comparator website [7]:

“The entrepreneurial environment is vibrant and growing in comparison to its other West African counterparts. The economy of Ghana is supposed to be growing at a faster rate than China's. The Ghanaian business structure is stable and the government promotes business and entrepreneurship.”

The government of Ghana is a constitutional democracy. The Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi was the academic partner and hosted the project geographically. KNUST has a good range of artisan craft courses with an emerging interest in design for export. Kumasi and the surrounding region to the north of the capital Accra is entrepreneurial, possibly enhanced by Kumasi's location at the end of the ancient trans-Saharan gold road, the Ashanti and other tribal cultures, as well as colonial and global trading influences since the 17th century. The area around Kumasi has a large number and variety of craft villages and distributed making networks in the area including: brass foundries, wood carving and turning, weaving, bamboo, leather, metalwork and ceramics.

Establishment of an evolved model for contemporary design collaboration

The GoGlobal educational model has evolved through several iterations via projects in:

2005 – Beijing, China, Project Gambei with Tsinghua University

2006 – Bangkok, Thailand, Massclusive Craft Production with Thai Creative Design Centre

2007 – Beijing, China, Post Consumer Society with Tsinghua University

2008 – Tokyo, Japan, The Future of Food with Tsukuba University

2009 – Kumasi, Ghana, e-Artisans with Kwame Nkrumah University of Science & Technology

The basic model in each of these was an interdisciplinary cross-cultural collaboration between the MA/MSc dual masters in Innovation Design Engineering (IDE) at the Royal College Of Art and Imperial College London, and a partner institution. The format was for a group of students to travel to the partner institution to work on a project over several weeks to explore an important regional/national theme through a collaborative design

project. Collaborations took place at several levels: between students, academic teaching staff, the academic institutions and partner organisations - from governmental and non-governmental organization to charities and trade bodies.

Experiments have been conducted by the researchers using various structures, from individuals working alone through to large groups [8,9]. The most successful have used groups of 2-4 students that provide the necessary intimacy and support to exchange cultural values and enable some specialisation. Project Gambei in China (2005) used a model in which students worked as designers in a fictional corporation [10]. This model was later refined to a collaborative structure for a 'Massclusive' [11] craft-design project in Thailand (2006) with the inclusion of swapping ownership of designs as the project progressed - the final range of products [Fig.1] was manufactured in batches of 20-100 and imported into the UK. A 'post-consumer society' model in China (2007) paired students and introduced meta-themes. Socio-cultural meta-themes investigated scale, time, wellbeing, intimacy, truth, hedonism/narcissism and spirituality. The 'future of food' in Japan (2008) used groups composed of several pairs under the guidance of two team leaders who led the group according to personal outlook and expertise. This project also introduced the peer review process in order to enhance collaboration through shared critical reflection. 'e-Artisans' in Ghana (2009) refined this process with themed groups defined according to craft areas for exploration that include: homewares, furniture, tableware, fashion and accessories, toys and non-objects.



Figure.1 GoGlobal Thailand Ka-Tin Collection of Massclusive Craft Products

Students conduct initial research and then develop a system of filtering and funnelling from the meta-theme to the artefact using a narrative arrangement that articulates the decisions and strategies undertaken along the way. This has the benefit of providing a wide exploratory area with maximum cultural inclusion for creativity as well as producing physical evidence of the narrative which helps deliver unique aesthetic qualities. The outcomes of GoGlobal projects have been documented and disseminated via exhibitions in London, Tokyo, Bangkok, Beijing and Accra alongside articles in periodicals [12,13].

Identification of project partners for the execution phase

In addition to KNUST, there were additional project partners in Ghana. Research and visits to Ghana identified the two leading organisations in the areas where partners were required. The Aid to Artisans organisation provided the project with Artisans' input, local production co-ordination knowledge, national supply chain experience, design feedback and market intelligence. Project partners for the e-commerce elements were ShopAfrica53 / BSL.

Establishment of a model for e-commerce

BSL, the project e-commerce partners in Ghana, established ShopAfrica53.com in 2008/9. ShopAfrica53 is a web system for browsing and purchasing merchandise from around Africa. The system currently covers Ghana but will expand to cover other African countries over time. BSL have also developed a scratch card system for purchases which ensures that the commercial supply chain is always cash flow positive. This is an important

point when selling artefacts long-distance, since a non-payment could present great financial difficulties for an artisan if they have paid for materials and started their work. Through courier relationships BSL facilitate the transport of artefacts within Ghana and internationally. Ghana itself is heavily cash-based and most people do not have bank accounts. Additionally, BSL have an alternative banking method in development that allows artisans to be paid via their mobile phones, access their balance, and make payments to others. Mobile phones are in widespread use in Ghana and BSL have an automated messaging service to communicate orders and information from the website to artisans around the country. Although GoGlobal Ghana will eventually have its own web portal, this will ultimately link to ShopAfrica53 for transactions.

Following an investigation into e-commerce options, the identified project model used existing components where possible, with a minimum of new components to complete a solution. This helps to control risk and costs, and it can be a scaleable solution. The model takes as its building blocks the described components from BSL and integrates the established advantages of Aid to Artisans: national supply chain, quality control, retail outlets, large number of several hundred registered artisans, and embryonic brand awareness. One issue is the difficulty of using BSL's scratch cards outside of Ghana. However, these cards have unique identity numbers and so they can be purchased digitally via credit card through a GoGlobal Ghana bespoke website and then used for purchases.

A key advantage to an online customer interface is the ability for customisation of designs on request, feedback to and dialogue with the artisans directly using the mobile phone system at the Ghana end. This should make the process of design more enjoyable and less faceless for both the buyer and the maker, as well as providing market intelligence. In essence, the idea is to establish a digital marketplace which shares the browsing and conversational aspects of a real market with stalls and vendors.

Establishment of the metrics for measurement of success in answering the question

A game, called 'The Marketplace Casino' [14], developed by Tom Barker and Simon Jameson of Wham / Hutchison Whampoa from 2005-8 was used to introduce concepts of the consumer market and success therein. This game also prototyped the metrics for measurement of success in the contemporary marketplace. In summary, there were four key metrics used in the game:-

- More: is the product offering more functionality or more by quantity than the competition?
- Better: is the product better than the competition?
- Cheaper: is the product cheaper than the competition?
- Wow: is the product simply very desirable emotionally to the consumer?

The design teams then considered these metrics at the concept stage of their design work. The idea behind such basic metrics, all given equal weighting, was that they could be born in mind by the teams without the need for complex analysis. Designs which were convincing in two of the metric areas were considered to have promise for further development. For this stage of the project, the more complex metrics were less developed. Those relating to socio-economic benefit, creative workplace satisfaction, effective fit and ability to work within the country's relevant context, were measured by critical review from by the Aid to Artisans team in conjunction with the KNUST University staff. The avoidance of local ethnic design clichés or jarring cross cultural issues relied on the judgement of the design teams and all the expert reviewers.

Execution of project collaboration

The collaborative working between the Ghanaian students and the RCA students operated well, with the students randomly paired up: one Ghanaian and one RCA student per team. The RCA students were a diverse international mix, coming from over 14 different countries. Of the 30 pairings, the majority said they worked extremely well or well together. It was clear that 3 teams had some problems collaborating, and these issues revolved around communication rather than method or creative differences. In terms of method, the Ghanaian

students approach tended to be more spontaneous and less research-based than the RCA students. But in contrast with a slightly more theoretical stance among RCA students, the Ghanaians had very practical experience of making and were able to identify processes and means of assistance very quickly to facilitate prototyping. Both groups had a comprehensive understanding of the technologies for e-commerce.

A selection from the twenty six finished designs are illustrated in Fig. 2. The products are innovative and provocative, typically breaking the mould but also referencing local materials and creative influence. These show how collaborative interdisciplinary projects can overcome some of the hurdles for generating new export products for developing economies. A description of product outcomes follows.



Figure.2 GoGlobal Ghana Products: From Top Left: Woven shoe, Ananse Figure, Flower vase, Paawopaa collectable toy, Adinkra game, Calabash speaker and Water Filter.

Woven shoe: This can be customised by the consumer via a website and is then hand woven by craftsmen. The product is competitive by using customisation and a combination of craft skills.

Ananse figure: The Ananse figure is constructed of elements, each of which is part of a children's story. As the doll is assembled the story is told. The doll uses local wood carving skills and regional stories for the narrative.

Flower vase: The flower vase is constructed using sections of a calabash then bonded together to form a multi spout flower vase. The construction and aesthetic qualities use local materials and making skills.

Paawopaa Collectable Toy: The collectable toy is hand carved and available in a limited edition. It develops the African tradition of head carrying and introduces novel objects to form new unique combinations. For example the image illustrated uses the Grasscutter animal common to Ghana.

Adinkra game: The game uses Ghanaian Adinkra symbols as counters and is a successful application of symbolic imagery that remains accessible by a western market.

Calabash speakers: The speakers are made from a calabash that has been slowly dried to leave some of the fruit matter behind. This has very useful sonic properties that amplify the speakers and provide a rich sound. The speakers can also be grown into various shapes by attaching formers to the fruit as it grows.

Water filter: The filter is designed as an antidote to its injection moulded western counterparts. It uses ceramic to cool the water and a locally constructed charcoal filter to remove impurities.

The prototypes were all designed and prototyped during the two week project by artisans from the main market and craft villages surrounding Kumasi. The completed designs are now promoted by Aid to Artisans to encourage the export of new designs from Ghana.

4 Discussions

The very international nature of the students helped the group to embrace the idea of developing products with global appeal. The use of game play to introduce the Ghanaian students to markets and branding was efficient and accessible as an approach for a group that had little formal experience of these areas, but a lot of enthusiasm to learn. The game also assisted team bonding in presenting playful challenges to be met together but with less pressure to deliver good results. The team format of random pairing gave results that were generally no worse than the more programmed team formations used in previous GoGlobal projects. Previous team formation

techniques have included: the use of Myers Briggs MBTI analysis; effective intelligence analysis; self-selection by themed interests; self-selection by personal choice; and selection by skills. It is possible that for early stage design (concept and early prototyping) complimentary personality types and a common language (in this case, English) are more important for team composition than skills balances or common interests. Team compositions such as described in De Bono's Six Thinking Hats [15] are perhaps more relevant to larger, more complex and comprehensive multidisciplinary projects. It was also noticed that the Ghanaian students had the same ability to 'jam' creatively at the concept design stage as the RCA students. 'Jamming' is a reference from musician's performing together in an improvised mode [16]. It is possible that this characteristic is cultural, since it tends to require a relaxed, responsive and inclusive attitude to a fellow collaborator. Such characteristics are considered very typical of Ghanaian society [17]. Creatively, the Ghanaian students readily embraced the benefits of designing and prototyping concepts at speed [18,19]. The Ghanaians were prepared to experiment and were relatively unconcerned about design risk [20]. This may be cultural and is an advantage. The RCA graduates were primarily from developed countries and tended to be more risk averse, which can be a significant barrier to innovation in design [21].

The impact of the 'e-commerce-ready' design constraint was notable. The designed artefacts were not generally large objects and the larger ones (eg: side table) could be flat-packed for transportation. About a third of the designs had an embedded or related web component for users and feature-enhancement, or post sales support and servicing. The work was considered in the context of international customers, allowing for the origination of customers to be global. Finally, good consideration was given to packaging for shipping as well as presentation.

The e-commerce briefing element was relatively seamlessly adopted as further design constraints and/or opportunities. It was notable how all the participants were extremely aware of technology relating to the internet, mobile communications and computing. This may reflect both the status of the students and the way in which applied consumer technology has leapfrogged many infrastructure and industry limitations in Ghana.

The information architecture for the e-commerce model is now specified in terms of functionality and the e-commerce partners have joined the project. However, the implementation of the e-commerce model was underway at the time of writing, so full evaluation has not yet been possible – the aim is to have product data on ShopAfrica53.com by August 2009, timed with a formal press launch.

The metrics for success need further development. They are necessarily a mixture of quantitative and qualitative evaluation approaches, but currently without explicit weightings. As the project evolves, it will be important that the metrics help with an 'audit trail' to see if they correlate with actual market place success for individual artefacts, and allow adjustment if there is a mismatch. A two dimensional graphical record of metrics for each design with weightings for adjustment derived from climatic Wind Rose diagrams [22] was proposed to UNCTAD XII in April 2008 [23] by the Authors for future records and evaluation.

The sustainable elements of the project were specifically related to aspects that were relevant to the African region [24]: the use of renewable materials where possible, creating employment and economic growth, and ensuring a high level of creativity and satisfaction in the workplace – ideas that were articulated by Ruskin and his writings on employment and the British Industrial Revolution [25]. These sustainable aspects need to be further developed and formalised in the third phase of the project and the researchers have engaged with Fairtrade [26] for future accreditation.

When the final designs were analysed it became clear that diverse creative strategies were employed. The Doll, Toy and Game all used symbolism and narrative as an inspiration while at the same time keeping the concept and function of the design accessible to a western market. The Shoe and vase leverage high quality local artisan craft skill and customisation while the calabash speaker and water filter use local materials and product types to develop new innovative functions for export products.

One of the main design challenges in generating craft products from a developing country for an international export market is that of cultural transfer [27,28,29]. A typical approach is to note and capture local culture in artefacts for export. This becomes problematic especially when using symbolism because the meaning can become lost once the object is exported to markets where customers are unaware of the significance of the objects. The key to success in this challenge is to leverage high quality contemporary values that can transcend local meaning and have wider appeal. This is important to avoid being trapped in a niche market. Conversely, care has to be taken to avoid developing generic ‘Global’ products that become poor competitors in an aggressive commodity market and lose their stand-out qualities. Successful products emerging from a developing economy need to leverage contemporary design in conjunction with local making skills and unique qualities without recourse to heavily applied symbolism at one end of the scale, or generic design at the other. Narrative has been a useful tool that has functioned successfully on several GoGlobal projects by allowing the combination of diverse cultural outlooks with new function and material combinations. Moreover, products need to match local output (materials, finishes, making skills, functions etc) with demand from western markets (for new unique products, interesting making skills, heirloom qualities, authenticity, individuality).

5 Conclusions

Although currently only focused on Ghana, the research indicates that contemporary design collaboration used in conjunction with e-commerce models may have the potential to grow the creative industries in developing countries. The scale and rate of this growth has not yet been ascertained and the e-commerce implementation is still underway. This work differs from other studies that the authors were aware of, in that it combines the dual elements of design collaboration and e-commerce in a developing country, effectively providing a process for design, production, customer reach and delivery into the markets of developed countries. The e-commerce aspect also had a significant impact on how the design participants responded to the design briefs.

The research work for GoGlobal Africa started in January 2008 and phases 1 and 2 have been successful to date. GoGlobal Africa is continuing as a research activity between KNUST, UTS Sydney, the RCA, the LSE, and RMIT (Melbourne). A GoGlobal design research centre is being created over the next 12 months at KNUST to extend the research remit, facilitate the development of the project to phase 3, and encourage the orientation of design skills for the export market. In this way the project will contribute to the implementation of the “culture of creativity” promoted by the British Council [30].

In going forward with phase 3 of the project, the research question will evolve and the question may become how to best establish contemporary collaborative design practice that can be of national benefit in a socio-economic and production context – in other words, an evolution into the commercial marketplace. A key to the successful evolution of the format and the subsequent planning for a Design Research Centre will continue to be the refinement of metrics for success in both quantitative and qualitative terms, and feedback into the GoGlobal process for improvement.

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