

world class product management

product

focus



White Paper

Global Product Management

Enterprise Software Localization



Summary

For software product companies expanding to other territories, the topic of localization is critical. Yet the details of what localization involves are often not well understood. For example, the term localization is often assumed to be synonymous with translation.

But, translation is just one aspect of localization. A successfully localized product will also have taken into account issues of data representation, local business and legal constraints, as well as cultural norms.

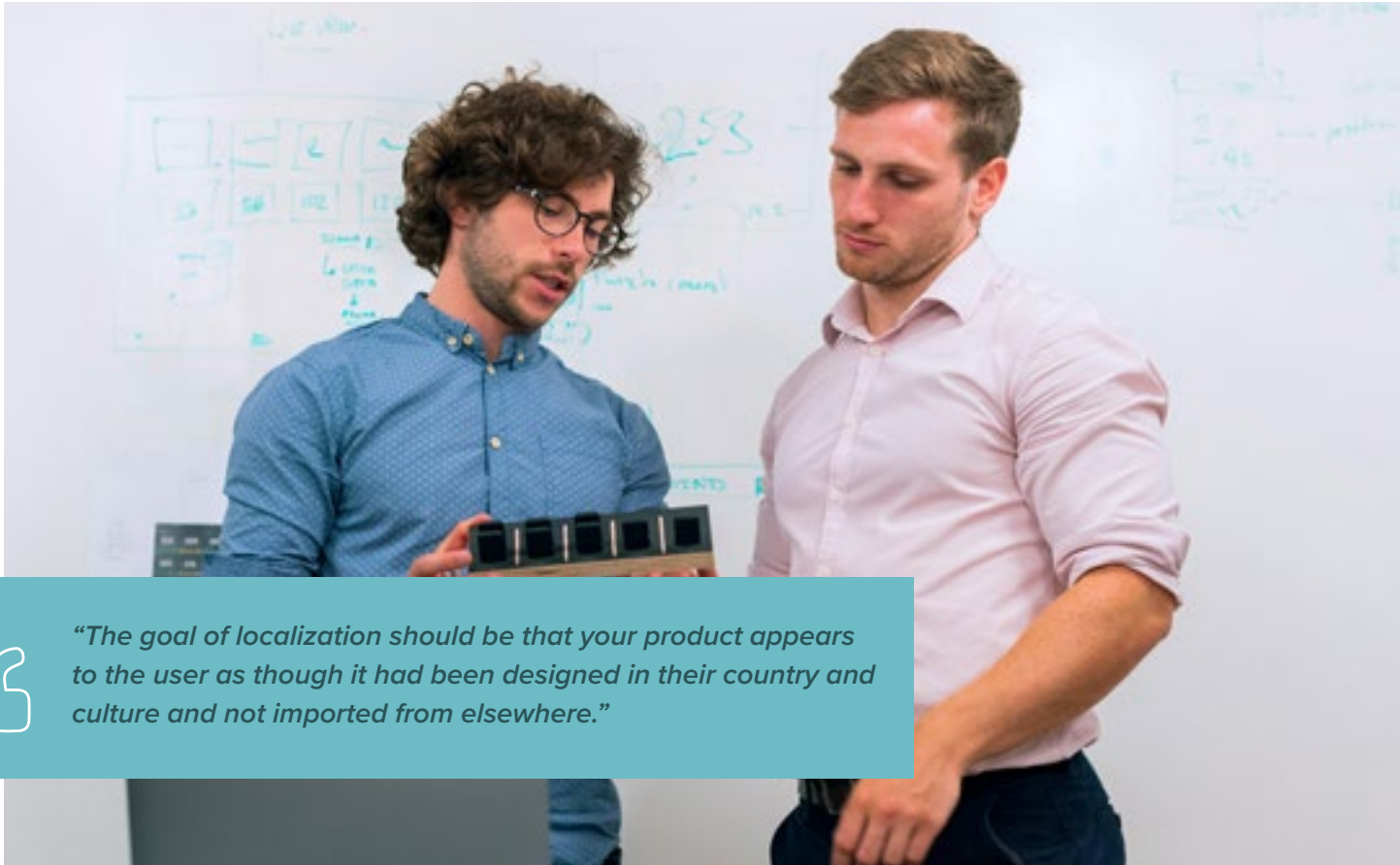
Even in a well-prepared organization that has a fully-formed globalization team, much of the responsibility for product localization falls to the product manager. This paper describes how localization impacts the product manager, what they need to know, and provides a checklist of key considerations for a successful localization process.

Index

What is localization?	Page 3
Localization and the product manager	Page 4
The whole or augmented product	Page 5
Language	Page 6
Data representation	Page 7
Business and legal requirements	Page 9
Culture and geopolitics	Page 11
Roadmap for localization	Page 13
Conclusion	Page 14
Checklist	Page 15

What is localization?

Users' expectations of enterprise software have changed over time – while users might once have been told to 'just use it,' consumerization means these same users now have high expectations for the experience. Their employers, your customers, recognize this fact. You will want to maximize the value they get from your product, so it's in your interest to take localization of the product experience seriously. This means ensuring that the user interacts in their own language, with data presented in a format familiar to them, and crucially, that aligns with their cultural norms. So the software has to be 'localized.'



“The goal of localization should be that your product appears to the user as though it had been designed in their country and culture and not imported from elsewhere.”

There continues to be considerable debate around the correct use of several terms - localization, globalization, and internationalization. Globalization is now most often used in the context of taking a whole business to the global market or the more general sense of markets themselves becoming more global.

According to the World Wide Web Consortium (W3C), the other two terms have the following meanings:

- Internationalization: the design and development of a product that is enabled for target audiences that vary in culture, region, or language.
- Localization: the tailoring of a system to the individual cultural expectations of a specific target market or group of individuals. Localization includes, but is not limited to, the translation of user-facing text and messages.

The implication here is that the product first needs to be enabled for multiple markets (internationalization) and then tailored specifically for each market (localization).

In this paper, we use the term localization to cover both activities for two reasons. First, the boundaries between the two are somewhat blurred, and differentiating between them would appear to add no value. Secondly, as we are only interested in the end goal, there seems no need to split them. And from a practical perspective, it is very rare to be able to perform all of the internationalization tasks ahead of localization for any country, as we shall see.

Localization and the product manager

So why should a product manager care about localization? Aren't we just talking about a set of requirements no different from all the other requirements on the backlog? The answer is that many requirements related to localization are tacit rather than explicit. In other words, they are intuitive, rooted in experience, and therefore hard to communicate. For example, a global product manager wouldn't know that, in some countries, using yellow colors for their user interface would be associated with pornography.

And if we agree that the product manager is ultimately responsible for the product that is delivered and its adoption by users, then that product manager had better have a focus on localization.

This does not mean that product managers must know the specific requirements for every target market. What they do need to understand are the areas to be considered, why they are important, and the need to engage with local experts for the detail in each market.

Localization and the product management framework

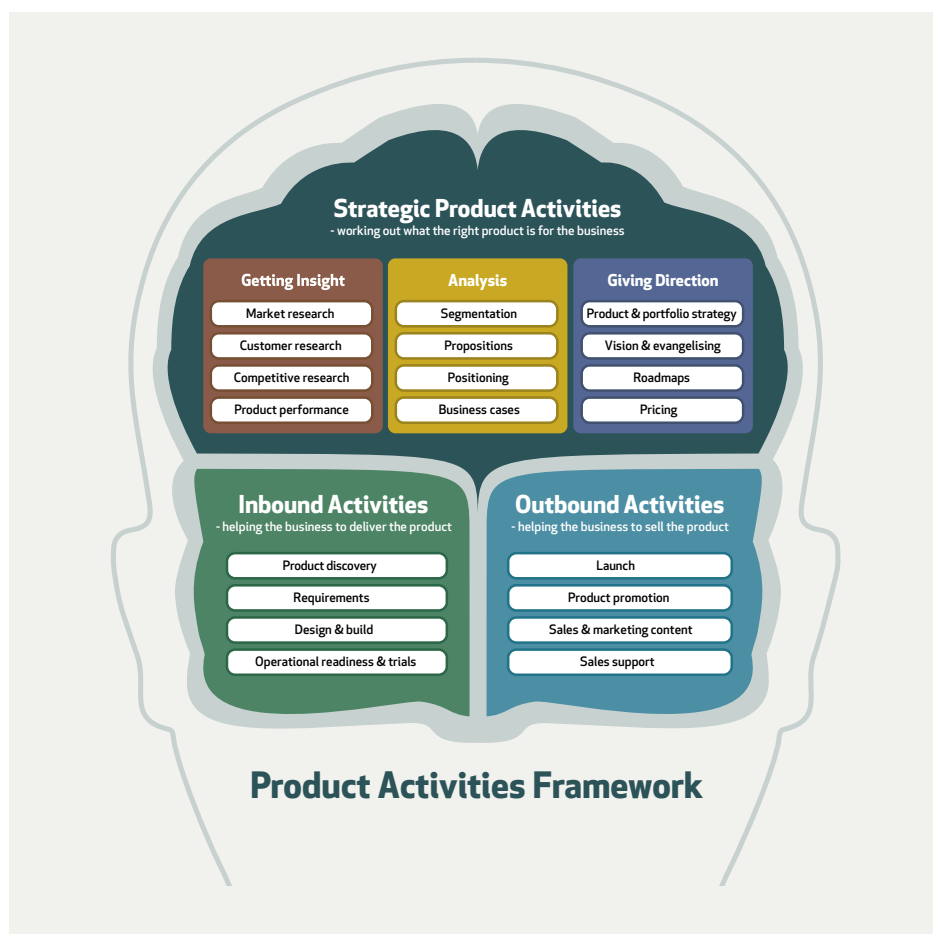
Most product managers work within a framework that gives structure to their role, such as the **Product Activities Framework** from Product Focus. This outlines 20 different product management activities that should take place in any company with products. Should localization become the 21st activity? The answer is no - localization needs to be considered as a component of just about every activity, whether it is Discovery, Competitive Analysis, Roadmapping, or Launching.

Product management organization

In an ideal environment, a company will have a central globalization team of cross-functional practitioners that includes product management. This group will make the big decisions about the markets to be targeted and ensure that all departments are aligned concerning globalization. While this is ideal, it's not the norm. A common scenario is that the sales organization decides to target a new growth market or identifies a specific opportunity, such as an existing customer wanting to broaden their use of a product into more of the markets in which they operate. In both cases, the product team is reacting rather than being proactive with their preparations for localization.

Whether or not market entry is planned in advance or not, the job of localizing the product lands with the Product Management team. So how should that team organize for localization?

All product managers should be knowledgeable about localization in general if relevant for their product. And, when driving the development of their component of the product portfolio, the product manager should have localization in mind so it does not become an afterthought. But then, for specific markets, it makes sense to have product managers focused on those markets (often alongside their other responsibilities). They will need to build a tight relationship with in-region resources such as the local sales and services teams, partners, and customers, to understand the local requirements.

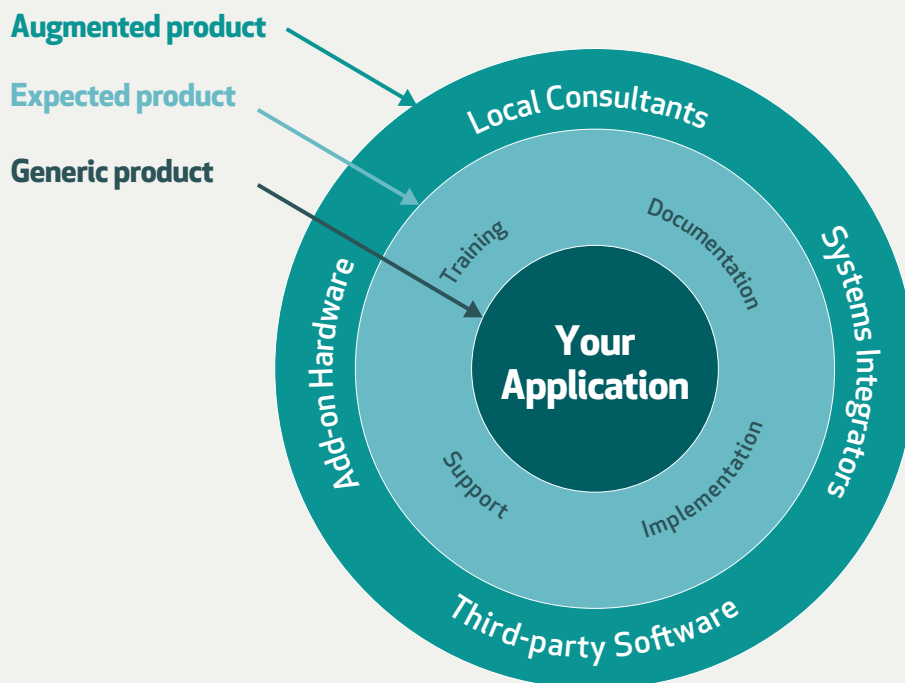


The whole or augmented product

It is often the case that a customer doesn't take a single Enterprise Software Product. They take that core product alongside various product options, product integrations, and additional services. This can be termed the whole or augmented product.

Where this is the case, the product manager needs to consider both the core product and all of the additional elements that make up the whole or augmented product valued by the client. Are all these elements, e.g., integrated products, third-party products, professional services, and support teams, as well as marketing collateral, proposal capabilities, documentation, training, implementation services, support capability, etc., available in all target markets?

Typically the product manager is not responsible for much of this, but without it, your product has a much lower chance of success in new markets, and so it is in the product manager's best interest to work with stakeholders both internally and externally to ensure a wholly localized product.



Language

Choice of language

The first thing that comes to mind when considering localization is language. For truly global products, it is likely that products must support more than the traditional handful of mainstream languages such as English, French, German, Spanish, Chinese, and Japanese.

Many languages also have variants – think of American English vs. English as used in the UK, Spanish spoken in South America vs that spoken in Spain, or the French of France vs. that spoken in Quebec.



“If I am selling to you, I speak your language. If I am buying, dann müssen sie Deutsch sprechen.”

- Willy Brandt

Language representation

Language is represented through its character set, and it is irritating when a supposedly multilingual product fails to properly support the accents or additional letters of a particular language, such as the German ß, French é, or Greek α. To facilitate this, products should be built using the Unicode standard for encoding. Any software written recently should do so, but if you have any legacy code, beware.

Directionality

Another topic related to language that you should be aware of is directionality. In English and most languages, we read and write from left to right across the page. But a few languages, such as Arabic and Hebrew, are written from right to left. Unless your product was built to support this capability originally, it is very difficult to retrofit and will probably involve a redesign of your user interface. It is not as simple as mirroring the entire UI – for example, some icons are reversed (like those indicating direction) while others are not (i.e., a clock, since clocks go clockwise all over the world). And some text elements – such as a URL – will always display left to right.

Collation

The collation of data also introduces complexity. In English, having just 26 letters, the concept of alphabetical order is very simple. But as soon as you start introducing accented characters, life gets more complicated with different languages having different rules. For example, in German, the letter Ä is treated as a regular A when sorting, while in Swedish, it is placed at the end of the alphabet. And when dealing with non-alphabetical languages (so-called ideographic languages such as Chinese), the rules get more complex. If your product always relies on collation, with support from the underlying tools such as the database or browser, you will probably not go far wrong. But if your developers have implemented their own sort or comparison routines, they will likely have to be changed.

Text length

English is a fairly compact language, and so when translated into other languages, the text will typically take up more room. This can cause problems, for example, with text displayed on buttons. The table to the right shows the relative densities of various languages as a ratio.

Translation

Translation is a topic on its own and has spawned a huge industry of people and technologies to handle it. Before making a choice on which to use, ensure that all of the above topics are considered.

Language	Ratio
English	1.0
Korean	0.8
Japanese	1.2
Portuguese	2.6
French	2.6
German	2.8
Italian	3.0

Data representation

The second most common concept in localization after language is data representation, including dates and times, numbers, names, addresses, etc. Often the tools used to build our products (operating systems, databases, programming languages, web browsers) take care of this. However, the author was once at a software demonstration to a British audience of a product built in the US. It did use locales and was configured to use UK-style dates – day then month. But there was one date field on one screen shown in the middle of the demo, where the developer had overridden the format and hard-coded a US-style date – month then day. At that moment, the potential sale was lost – the prospect, unfairly perhaps, concluded that if the vendor could not get date formats correct, how would the functionality stand up in the UK.

Some of the more important topics are:

Dates and times

There are many ways of writing a date, including the order of the day, month, and year; whether the month is written out (fully or abbreviated) or represented by a number; the symbol used to separate the parts. In the United States, the convention is to use the sequence month-day-year, whereas just about everywhere else uses day-month-year. In general communication, you should spell out the month to avoid confusion, but when displaying numeric dates, it is important to use the format that the user expects. The map below shows the variation around the world – blues and greens usually put the day before the month while the red does things the other way around. Interestingly the most logical format – year-month-day (since it makes sorting easier) is used only in China and some other eastern countries, as represented in yellow on the map.

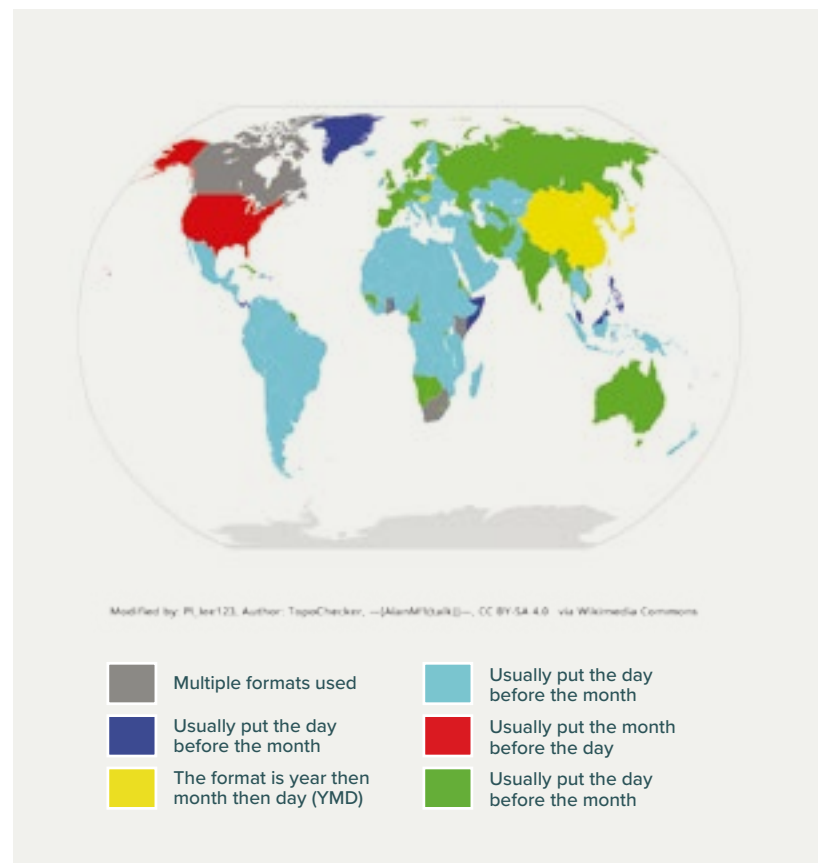
When abbreviating the names of the months of the year, in English, we use three letters. But in some languages (such as French), the first three letters of the names of months are not unique, and so more letters are used, which means that more space will be required on the screen.

Also, Westerners tend to assume that everyone uses the Gregorian calendar, but some applications may need to use others, such as the Islamic, Hebrew, or Solar Hijri calendars.

The most common variation when specifying time is between the 24-hour clock (known as military time in the US) and the 12-hour clock – the latter typically requiring an am/pm (in the local language, of course) suffix. The hours and minutes may be separated by a colon, a period, a letter (H, or the abbreviation for hour in the local language), or not separated at all.

Numbers

Most countries use the so-called Arabic numerals (0, 1, 2, etc.) to represent numbers. But the decimal point may be represented by a period (full stop) or a comma, and for ease of reading, the digits are usually grouped in threes where the groups could be separated by spaces or commas. There are other number systems in use, such as Hindi and Japanese.



Source: https://en.wikipedia.org/wiki/Date_format_by_country

Addresses and personal names

Most countries have a conventional way of writing an address - whether that is a personal address or a business address. Complying with that convention is often a requirement if using the address for mailing purposes. Using the office addresses of a major global software company, here are three examples. Notice the different order of items on each line:



Germany:

Dietmar-Hopp-Allee 16
69190 Walldorf



US:

3999 West Chester Pike
Newtown Square, PA 19073



France:

35 rue d'Alsace 92300
Levallois-Perret

The order in which personal names are written also varies. Here in the West, we tend to use the terms first name and last name, which refer to their normal position in our culture. Better terms from a localization perspective are given name and family name, and they should be placed on the screen in the order appropriate to the location. Recently it was reported that one of the reasons that a major food delivery app was not well received in Japan was that the app's UI had simply been translated, and the order of name and address fields was confusing for local users.

Time zones

Time zones can present particular problems when localizing. There are two challenges here. First, handling dates and times that are entered and displayed in local time zones – the classic example being airline solutions where a plane can quite legitimately land before it has taken off when expressed in local time. And secondly, there is no standard list of time zone abbreviations that you can use. Common abbreviations such as CST have different meanings in different parts of the world, for example, Central Standard Time, China Standard Time, or Cuba Standard Time. And then throw in Daylight Saving Time (DST) for good measure! A curious DST anomaly occurs within the continental US, where the State of Arizona does not use Daylight Saving, except within the Navajo Nation. As a further twist, the Hopi Reservation is surrounded by the Navajo Nation but does not use DST. So a relatively short drive through this area can involve four time zone changes!



Other

Many other business entities have different representations around the world. One example is paper sizes – a global application will need to support both the international 'A' standard as well as US letter and legal sizes. Another example is units of measure – while the metric system is in common use in most countries, there are exceptions, such as in Burma, Liberia, and the US. A third example is telephone numbers, which, although interpreted by the telephone network as a string of digits, are usually grouped according to local custom.

(US: nnn-xxx-xxxx France: nn-xx-xx-xx UK: 0nnnn nnnnnn)

Business and legal requirements

Despite the globalization of business over the past 50 years, every country remains unique with its own legal rules and business practices. Often, at large multi-national companies, the head office (who frequently selects solutions) believes they can implement common business processes globally for consistency and efficiency. But the reality is that in most situations, local laws or established business practices must be adhered to, so any solution must accommodate those local requirements.



“Local regulations v global standardization”

Security and privacy

Not a day passes without a news headline of a major cyber-attack, data breach, or concerns about data privacy. Governments worldwide respond to these threats in different ways and impose different requirements. For example, take the issue of where data is stored, processed, or from where it is accessed. It is a complex subject with the terms data residency, data sovereignty, and data localization often confused. One of the key benefits of the SaaS model of computing is data storage 'in the cloud' accessible from anywhere. However, many jurisdictions are legislating for the hosting of personal, health, and financial data within the country or region of the data subject, with restrictions on accessing it from elsewhere.

Many people will be aware of the long-running dispute between the US government and Microsoft over access to emails stored on a server in Ireland. Under the US CLOUD Act, US law enforcement can compel US-based companies to provide data stored on servers anywhere. This is very much in conflict with European data protection rules if the data is about EU citizens. Until July of 2020, there was a mechanism known as the EU-US Privacy Shield designed to mitigate the risks. But in that month, the European Court of Justice, in a case known as Schrems II, found that the mechanism no longer provided a valid legal basis for data transfers from the EU to the US. Now customers of US cloud service providers must themselves verify the data protection laws of the **recipient** country, document the risk assessment, and confer with their own customers.

In late 2021, there was a news item about the lack of tracking information from container ships in and around China which is adding to global supply chain challenges. The reason given was that those operating the receiving stations on the Chinese coast are wary of the recently introduced Chinese data privacy laws, even though no personal data is involved, and they are not passing on the data.

As a product manager, you do not need to be an expert in all of this, but as part of overseas expansion, you do need to ensure that your Chief Security and Privacy Officer is fully engaged and be prepared for the possibility that, for some countries, you may not be able to host your solution in the current locations.

Certification and compliance

For some types of products, in some markets, there may be a requirement for certification and/or compliance. For example, to sell SaaS applications to US Federal Agencies, you must achieve FedRamp certification – a process that costs several hundred thousand dollars – and involves a lot of effort. Trade restrictions may also impact you, e.g., if your software uses strong encryption technology, it must not be sold in certain countries. And if your solution includes a hardware component, there may be prohibitive import duties in some countries as well as a requirement for certification by local authorities.

Names and trademarks

Your product probably already has a name – perhaps carefully chosen to convey your brand and value. But it is likely either a word in your own language or what you think is a made-up word. Typically, you would not want to translate the product name, but what does that word mean in other languages? Marketing literature contains many tales of woe around global branding disasters due to naming issues. And a well-known example involved the re-branding of Facebook's parent company to 'Meta.' Native speakers of various languages have pointed out the unfortunate meanings of the word in their language.

You also need to check that the product name (and even your company name) has not already been trademarked in your target countries for a similar product. For example, an Australian software house in business in the UK for around seven years received notification from a very large telecommunications company that their company name violated a trademark they held. The telecoms company's legal department was probably larger than the entire software company, so they were forced to rename and re-brand the company – a very expensive and time-consuming exercise.



“What does your product name sound like in Arabic / Korean / French...”



Culture and geopolitics

The cultural aspects of localization can be challenging to get right but can have the largest impact on user adoption. Our definition of localization suggests that the product must look and feel as though it had been developed locally. But it is very easy to focus on hard business requirements rather than these softer cultural aspects. Unfortunately, most aspects of culture are not documented or understood by outsiders, and without care, it can be very easy to cause offense.

Let's look at some examples of the visual components of a product that might impact cultural acceptance.

Color

Color can have very different connotations around the world. For example, yellow is associated with good luck in Thailand but with pornography in China. And where we in the West use red and green to indicate negative and positive, respectively, in some Eastern cultures, the roles of the two colors are reversed, as you can see from these two screenshots from the Paris and Tokyo stock exchanges. You can see more interesting examples in this blog post by [Shutterstock](#).

PARIS			
NATIONAL INDICES			
AEX	713.34		+0.41%
BEL 20	4,068.16		-0.09%
CAC 40	6,406.89		-0.02%
ISEQ 20	1,430.29		+0.58%
PSI 20	5,228.38		+0.13%
OSEBX	1,092.54		-0.40%

TOKYO			
TOPIX	1,946.40		-21.20
日経平均	27,821.43		-205.82
JPX日経400	17,557.08		-194.72
東証REIT指数	2,003.04		+13.98
日経平均VI	21.98		-0.39
金標準先物	7,594		+80
ドバイ原油先物	73,020		+600

And, apologies if you're reading this in the UK and expect to see the spelling 'colour'. We've chosen to use American English at Product Focus because a large proportion of our readers have English as a second language and are more familiar with American English spelling. It would be nice to localize our content for every country, but we've made the decision (rightly or wrongly) that the cost to do this is too high.

Symbols and icons

One trick that has been used to simplify localization is to use symbols or icons rather than words because they are more widely understood and do not need to be translated. A lot of work has been undertaken trying to develop 'universal' icons that are acceptable in any cultural setting. There are two dangers in this. First, the icon can be so generic that it does not have a strong meaning in any setting. And second, believing that the resulting icon is truly universal, without thinking, you may stumble across a culture where it is not acceptable. Here are a few guidelines for using icons:

- Avoid using any graphics that use body parts – for example, the thumbs-up sign commonly used in the West has a very different meaning in West Africa and the Middle East.
- The use of animals is to be discouraged as they often represent very different ideas in different cultures. For example, a British company might use an Owl to represent learning, but the Owl depicts stupidity in some parts of Asia.
- Always avoid religious symbols – this is why the Red Cross is known as the Red Crescent in many parts of the world, even though the origin of the Red Cross symbol is not a religious one but a reversal of the colors in the Swiss Flag in tribute to the founder of what became the Red Cross movement.
- Some icons could also be considered time-sensitive in that younger people may not recognize the meaning as they originated in technology that no longer exists or is fast disappearing. Two good examples are the Save and Mail icons in common use today.



Save



Mail

Geopolitics

Geopolitics is another source of potential challenges that can impact a user's perception of your solution.

For example, consider the widely used drop-down that lists countries. There is no definitive list of countries agreed on by everyone. The most commonly cited number is 195, made up of the 193 UN member states plus 2 observer states – the Holy See and Palestine. But that does not include either Taiwan or Kosovo, for example, which are not recognized by the UN (having been vetoed) or Greenland or Hong Kong, which are self-governing territories within other countries. You may have to use your own list, taking into account your specific circumstances. For example, most online retailers do not include embargoed states such as Cuba, Iran, and North Korea.

Aside from the list of names, it's also important to ensure country names are provided in the relevant language of a multilingual user interface.

Second, but in the same vein, using maps can get you into trouble, as happened during the 2020 Olympic Games in Tokyo. The American broadcaster NBC displayed a map of China as part of its coverage of the games. They received a formal complaint from the Chinese authorities because the map did not include either Taiwan or the South China Sea, both of which China claims as part of their country. In a further twist, it was announced that Netflix had removed two episodes of its drama *Pine Gap* in the Philippines at the request of the government there because they included scenes showing a map that did include the contested Chinese territory.

Roadmap for localization

If you are new to localization, then the breadth of topics covered in this paper may seem daunting. Do not be scared off by all of the localization challenges!

Here is some advice for product managers who are given the opportunity to take their product to international markets.

If you are in the fortunate position of being the initial product manager when your product is first developed and launched, then you have the opportunity to build a product that is world-ready from the start by ensuring that the 'internationalization' aspects of localization are incorporated into the first release. However, you are likely to be under pressure to launch in your home market as fast as possible, and the additional cost and time involved in complete internationalization are unlikely to be approved. But that does not mean that you should ignore them. Ensuring that all team members are aware of localization issues can prevent some costly mistakes at this early stage of product development.

Most product managers come to localization once the product has already proved a success in at least one market and may not have been involved in the initial launch. As soon as you are asked to expand the reach of the product to new markets, you need to assess your current status by undertaking a Localization Readiness Assessment. The checklist on page 15 contains some of the key points to consider. If this is your first localization assignment, you may also consider engaging with a localization consultant to provide an independent view.

It is never too early to engage with local resources, whether customers, potential customers, or partners. These are the people that will provide insights into the specific requirements of the local markets, and until you have a handle on those requirements (be they functional, legal, or cultural), you cannot begin to scope out a plan.

Then you must build your plan. While it should be integrated with other aspects of your product plan, it is worth being able to easily pull out all of the components related to localization, perhaps separated by target market.

Localization can be an expensive process, particularly if you have a significant amount of technical debt to be cleared. And senior management may not be expecting this cost and effort. After all, your product has been very successful in your home market, so surely all that you need to do is to translate it? Be prepared to put forward a robust cost justification as part of your plan.



Conclusion

Localization has become much more important as the use of enterprise applications has spread from managers and administrators to end-users at the same time as more and more applications are being deployed globally. As the product manager, much of the responsibility for localization falls on your shoulders. But that responsibility does not extend to being an expert on the specific business, legal, and cultural requirements of every market. That detail needs to come from local resources, be they customers, partners, or your own teams based in those markets. You need to understand the four key areas of localization:



The importance of local resources

To be successful in localization, it is essential that the product team works with local, native resources in the target markets. Ideally, those resources should have a 'product' mindset able to identify and prioritize those tacit requirements. In a perfect world, you might have local in-country product managers on your team, but if not, then you should build close relationships with product folk within local systems integrators and (if applicable) resellers. They will probably have real-world experience of some of the tacit requirements, such as cultural norms that are less likely to be expressed by customers yet are so important. Finally, it is always worth cultivating your network of fellow product managers and product marketers who may be able to offer advice.

References

Most existing books on software localization are aimed at developers and are now rather old (pre-Unicode, for example). However, the books on page 16, while of a more general nature, will be of interest to product managers.

About the Author

Dave Barker is a veteran of the global enterprise software world with over 40 years' experience, much of it focused on building, selling, and implementing global products and projects. He is based in the UK but lived and worked in the US for five years and has undertaken projects in over 30 countries. He now offers consulting for product managers facing the localization challenge.

Checklist

Localization experience

- ☐ Which countries will you target, including those where you already have customers/implementations?
- ☐ If you have already implemented in countries beyond your home base, what has been the experience?
- ☐ Were the projects successful? What have you learned?

Language

- ☐ Which additional languages will you need to support? And which variants?
- ☐ Was the product built with translation in mind?
- ☐ Does the product support Unicode throughout its architecture?
- ☐ Can it support right to left languages such as Hebrew and Arabic (if applicable)?
- ☐ Has all text been externalized to support translation?

Data representation

- ☐ Does the product support the concept of locale?
- ☐ Do all dates, times, numbers, etc., when displayed, use the locale?
- ☐ Do you have time zone support, including handling of daylight saving?
- ☐ Can the UI be configured to accommodate name, address, etc., formats?

Data privacy and security

- ☐ Where is your software hosted?
- ☐ Does your solution hold personal, financial, or medical data?
- ☐ Have you engaged your Chief Security and Privacy Officer, and have they researched the applicable laws in your target countries?
- ☐ Will you need to establish additional hosting locations?
- ☐ Will local data laws permit your existing support teams to access your customer's data when assisting them?

Local requirements

- ☐ Do you have a local partner identified – reseller or systems integrator?
- ☐ Have you investigated local requirements? Either through partners, customers, or other research?
- ☐ Have you checked the meaning of your product's name in other languages? And not just using the usual spelling – what other words does it sound like elsewhere?
- ☐ Have you checked for trademarks in other countries?

Culture and geopolitics

- ☐ Do you have access to native resources to advise on cultural aspects of localization in your target markets?
- ☐ Given the cultural sensitivity of icons, symbols, and even colors, how configurable is your UI in these areas?
- ☐ Have you considered any potential geopolitical issues given the particular countries you are targeting?

References

- [1] Truly Global: The Theory and Practice of Bringing Your Company to International Markets by Anna Navarro Schlegel



- [2] Business Beyond Borders: Take Your Company Global by Cynthia Dearn



- [3] Culture Map: Decoding How People Think Lead and Get Things Done Across Cultures by Erin Meyer



- [4] Riding the Waves of Culture: Understanding Diversity in Global Business by Fons Trompenaars



- [5] Product Activities Framework



product

focus

About Product Focus

Product Focus are global thought leaders in product management and European leaders in product management/marketing training and consultancy for technology-based products.

Learn best practice and improve performance with the European leaders

**If you'd like to discuss product management
training, or how we can support your
product management function,
please contact us:**



+44 (0) 207 099 5567



info@productfocus.com



www.productfocus.com