

Survey Results

# The State of Continuous Internationalization & Localization 2019



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In December 2018, Lingoport launched its second annual survey to gain insight into the state of software internationalization (i18n) and localization (L10n) practices (“The State of Continuous Internationalization & Localization Survey”). The survey results reveal some minor industry progress, with many opportunities for improvement in the industry. Improvements can be especially focused towards more seamless integration of i18n and L10n with common agile feature development practices. Limitations continue to include budget and gaining executive support.

## Executive Summary

**Measuring i18n Requirements:** Many survey respondents reported limited to zero methods for measuring and managing i18n requirements. 15% of respondents thought they did an excellent job at this, which is an improvement by double from last year (8%). Twenty-seven percent (27%) of respondents felt their companies performed this in a moderate manner (32% last year). Measurement remains a massive opportunity for companies to upgrade their i18n management infrastructure, which would improve software quality and reliability. As the saying goes, what gets measured, improves.

**Localizing for Every Sprint:** When it comes to agile localization, 46% of respondents reported that they did not localize for every sprint (last year was 51%). By definition, this large percentage is loading their backlogs, which means i18n and L10n issues will be found and fixed when they are more expensive and time consuming to remedy. It also means it is likely that a certain percentage of issues will arise when customers are using the product, potentially hurting the brand’s reputation and customer satisfaction.

**Multi-branching of Source Code:** Fifty-five percent (55%) of respondents reported that their development teams are employing multi-branching of source code during development (up from 50%). Thirty-two percent (32%) of respondents didn’t know. Multi-branching is common agile development practice. With such a large percentage not knowing means that there is a disconnect between localization and basic development practices. If you are in localization and don’t know your development team’s development processes, source repositories, branching practices or use of micro-services architecture, it behooves you to learn more about how your colleagues work. This will help you bridge understanding between development and localization objectives.

**Continuous Localization System:** Only thirty-three percent (33%) of respondents felt that their company had a strong continuous localization system in place (only 11% gave themselves highest marks). A resounding 42% of respondents graded their companies as having little or no automated systems. Most answers fell into the “no” to “moderate” categories. These numbers are just a little better than last year’s.

**Localization Turnaround Time:** Most respondent companies are measuring L10n turnaround for new development in weeks, rather than days. Fifteen percent (15%), however, reported two days or less, which shows what’s achievable with effective integration among development, technologies and services.

**Linguistic QA:** This was a new question area for this year. Eighty percent (80%) of respondents said they are performing linguistic QA (LQA). Fifty-eight percent (58%) of respondents perform LQA always, or nearly always. 53% of respondents are using a vendor for LQA. 26% are using a company team member.

Experience with localization teams has shown LQA updates to be a cumbersome process, but we did not ask about this. There are gains to be made compared with logging screen shots and bug reports. See Lingoport’s new InContext software.

**Pseudo-localization:** A whopping 61% said they were not using pseudo-localization automatically and consistently for testing during development. Pseudo-localization is a simple methodology, and though it’s less efficient than finding an i18n bug as code is written, it’s a place to make easy gains.

**i18n Functional Testing:** Functional testing responses did not match with the pseudo-localization results. 51% said they were performing i18n functional testing integrated with development, which clearly represents a lost opportunity to efficiently bake quality into global releases. At the very least, companies should be using pseudo-localization as part of that testing effort.

**Top Challenge:** The survey included one open question regarding respondents’ top i18n and L10n challenge they were facing. The most common answers related to the lack of development and management understanding, a consistent system and approach, lack of automation, and difficulties matching agile development. Lack of translation context, understaffing and lack of speed (falling behind) were common limitations. Budget issues and company buy-in were also commonly reported as they were last year.

# Survey Questions & Results

Below is a list of the actual survey questions, with our take on the answers.

## Survey Question 1\*

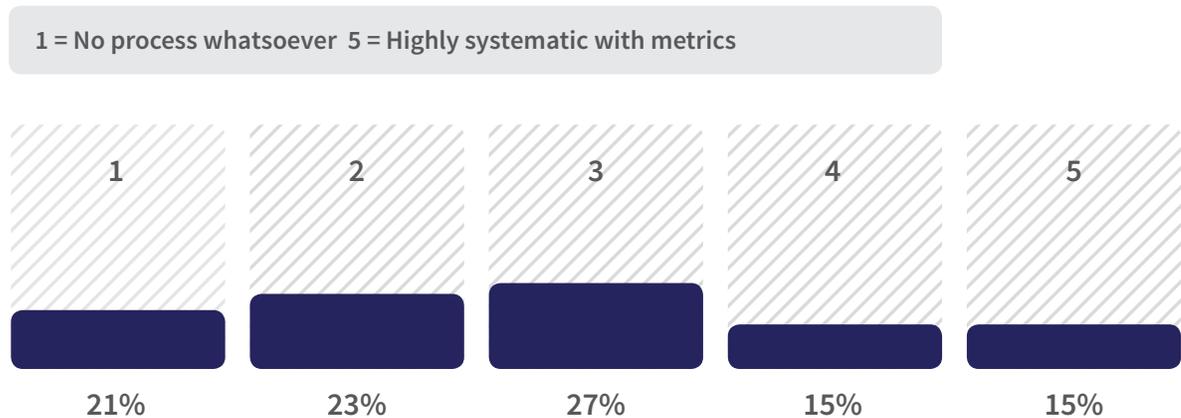
**Does your company and development organization actively support software globalization?**



*\*This question was a basic qualifier. If someone wrote no, the rest of the questions were made irrelevant.*

## Survey Question 2

**Do your developers have a process for measuring and managing i18n requirements?**



*Some form of software quality measurement is a basic benchmark for any desired software requirement. To be weak on measurement is to rely on randomness and to be lucky when quality actually occurs. You won't be able to confirm improvements. Surprisingly, there was an increase of more than 34% of respondents confirming that they have no process whatsoever compared to last year's survey (21% vs. just under 16%). On the positive side, the number of respondents who are highly systematic with metrics jumped from just over 8% to 15% this year, signaling a clearer divide between those doing it right and those not doing it at all.*

### Survey Question 3

Do you localize for every sprint?



*If companies are not localizing in every sprint, they are creating backlogs. Not every sprint means a release, however. Localizing for every sprint may not be for every organization, but given a large complex product, sprint localization is much more in line with the pace of development. With complexity, process automation becomes extremely important and the only realistic way to achieve true scalability in localizing for every sprint.*

### Survey Question 4

Do your developers employ a multi-branching or micro-services strategy for source control?



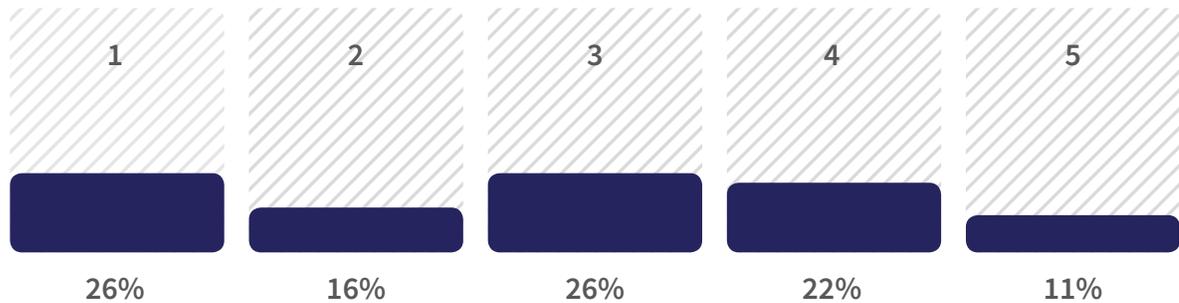
*Multi-branching and microservices represent serious threats to performing i18n, L10n and testing with older, non-automated methods. As features are isolated and sequestered into smaller and higher quantity repositories, the supporting i18n and L10n becomes more difficult to track and manage without automated systems.*

*As a side note, we have found that many localization managers have a linguistic background and consequently have some difficulty understanding software development trends and practices. This question allowed an “I don’t know” answer to account for this understanding gap, and sure enough, 32% of respondents selected this option.*

## Survey Question 5

Do you have automated continuous localization systems in place?

1 = Nothing automated 5 = Highly automated



Many companies have assets, such as scripts or CAT tools, that help them perform localization tasks. What the survey reveals, though, is a good deal of partial automation in the market. Partial automation means there are still human factors likely causing delays and overhead, which can be particularly painful with smaller amounts of strings for any given sprint. Most homegrown systems lack dashboards and collaboration functionality that supports the exchange of actionable information and the ongoing display of process status among localization, development and even vendors. We believe this type of “halfway” approach to automation is greatly limiting companies’ ability to be more successful with the global software release process.

“ Survey Recipient’s Biggest Current Challenge:  
Getting all teams to use the same process ”

## Survey Question 6

How long is the lag between feature releases and localization turnaround?

A = Within 2 days  
B = Within 1 week  
C = Within 2 weeks  
D = Within 3 weeks  
E = Within 4 weeks  
F = Five weeks or more



*There are a noted few respondents turning around localization quickly, within 2 days. The bulk of respondents are taking much longer, with 47% taking two weeks or longer, and with 22% taking a month or longer. The long delays put i18n and L10n tasks and testing into backlogs, protract releases to global customers and are likely to result in an accumulation of unaddressed software bugs as development teams move on to new features. Even if bugs are addressed, it takes time for a developer to get back into previously written code, figure out where the problem is, fix it, and then get it through another round of testing. Accelerating localization/translation and integration time is clearly an area ripe for improvement in the industry.*

*NOTE: Lingoport Suite customers commonly turn around localization within 5 days or less.*

“ Survey Recipient’s Biggest Current Challenge:  
Not all the dev teams know about i18n. They need to be trained  
for the best practices. ”

## Survey Question 7

Do you have a Linguistic QA process

80% YES

66 RESPONSES

20% NO

16 RESPONSES

*When you develop software for global markets, you need to conduct linguistic QA to ensure the right language is in place throughout the product. You may contract for that review, or perhaps you're engaging your in-country representatives. One out of five respondents has no linguistic review process. And unfortunately, even for those who do, the de facto practices tend to be problematic. For many software organizations, linguistic review happens late or after development, with the reviewers or in-country stakeholders looking at a screen, capturing a screenshot, circling an issue and submitting a bug with suggested changes. Fixing bugs takes time and often goes unaddressed or is handled late, only after release. This has been a persistent challenge in the industry.*

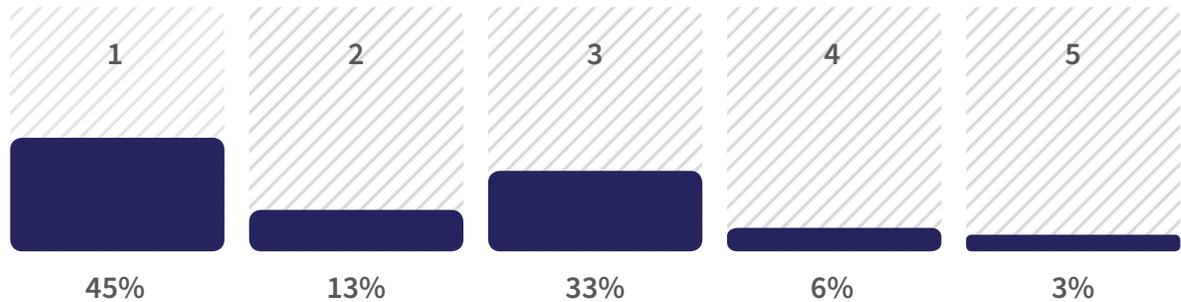
*NOTE: Lingoport InContext enables you to quickly identify an issue, enter in a new translation, edit directly on your screen, enter a bug, and have the file automatically updated after approval using your workflows. No more screenshots. InContext saves a major amount of time for software teams, going from weeks to hours for linguistic reviews and updates.*



## Survey Question 8

How often do you perform linguistic QA during localization?

1 = Every release 3 = Quarterly 5 = Never



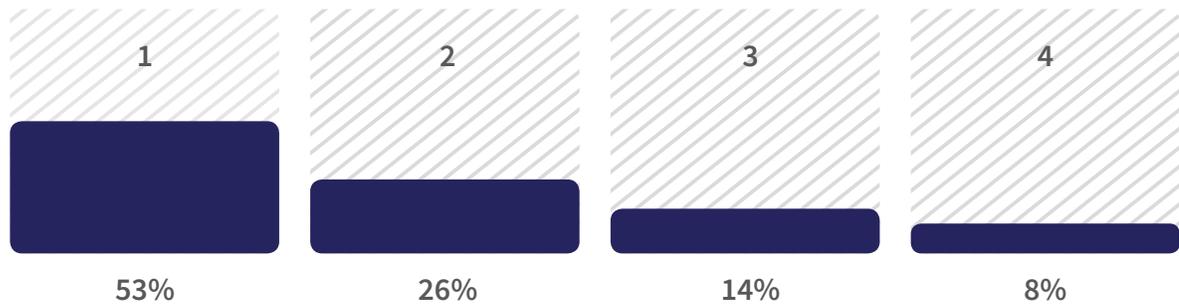
*As mentioned, linguistic QA is critical for delivering high-quality software. With this in mind, it's unfortunate that 42% of respondents conduct linguistic QA only quarterly or at longer intervals instead of with every release. This is an area where the industry needs to improve significantly.*

“ Survey Recipient's Biggest Current Challenge:  
The software architecture, which was not designed with L10n requirements in mind ”

## Survey Question 9

### Who provides the linguistic review?

1 = Localization vendor 2 = Company team member 3 = Other 4 = In-country distributor



*As mentioned, linguistic QA is a critical aspect of ensuring the quality of your releases for global markets. As such, it makes sense that more than half of respondents turn to professional localization firms for linguistic review, with another 26% turning to company team members.*

## Survey Question 10

Are you using pseudo-localization automatically and continuously for testing?



Although a slightly higher percentage of survey respondents replied affirmatively over the prior year's survey, there were still too many "no" answers to this survey question. Pseudo-localization is a basic testing practice for i18n interface display. As noted elsewhere in this report, it should not be the only approach, but it should certainly be included in the overall process. If you're unfamiliar with the term, pseudo-localization (or pseudolocalization) inserts beginning and ending pad characters, along with Unicode characters within a display string. Strings are expanded to account for differences in message length that occur with translation. The string remains human readable without needing to know the target languages. For example, Hello World! becomes [Hèllô Wôřld! lôř]. Testers can use this to find strings that weren't externalized, concatenations, dialogs that won't support expansion, character encoding problems and more.

NOTE: Lingoport Suite supports automatic pseudo-localization, so that UI changes are automatically updated via pseudo-locale for testing.

## Survey Question 11

Do you perform i18n functional tests simultaneously with new development?



There was a large drop in the number of survey respondents not performing i18n testing concurrently with software development (49% in this year's survey vs. more than 64% last year). It is good to see the progress, but this number is still disappointing and speaks to the disconnect between development and localization. This percentage must improve in the future for the industry to become more efficient at global software development and to ensure global users have the right user experience.

## Survey Question 12

### What's your company's number one challenge with regards to its internationalization and localization process?

*As stated earlier in this report, answers included inconsistencies in understanding and compliance within the organization, difficulties supporting agile i18n and L10n, budget challenges, education, cadence and automation. A sampling of responses are included below:*

*The software architecture, which was not designed with L10n requirements in mind*

*Getting all teams to use the same process*

*Getting L10n and i18n regarded as priorities rather than afterthoughts*

*Availability of in-context review tool for localized content*

*Integration of localization with development process*

*Educate developers on i18n requirement and files validation for i18n readiness*

*Getting i18n and l10n automated testing in place*

*Not all the dev teams know about i18n. They need to be trained for the best practices.*

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## Survey Question 12 *(continued)*

*Pretty much every engineering team works on localization at some point but there is no one solely dedicated to setting up and maintaining standards*

*Getting translations at the finest level, such as Git commits and Pull Requests*

*Fitting into an agile methodology*

*Too many development teams at different levels of i18n/L10n maturity*

*Capturing UX issues unrelated to strings and providing sufficient context for translators for L10n*

*Lack of support and funding from executives and general managers*

*Dealing with everyday higher localization demands while not having dedicated resources (economic or human) for addressing those needs*



## Opportunities for Gains

The bottom line is that the survey clearly reveals many areas where internationalization and localization are not being coordinated with software development efficiently or effectively. This impacts not only your ROI, but also the user experience in local markets around the world. The industry simply must do better.

If you look at the localization industry's technology focus, you'll see an emphasis on methods to lower the cost of a translated word. We now have translation memory, machine translation and translation management systems, and the resulting cost efficiencies have been real and even industry changing. However, much of that is directed at where the bulk of the words are: help systems, web and marketing content. Software strings from application development get lumped into the same systems. **However, software development practices are more complex.**

The survey shows significant opportunity for gains in development speed, quality and cost with regard to software internationalization and localization

practices. **There are costs that are being ignored,** which are wrapped up in human processes, errors and catch up, that don't reflect in the traditional cost per word localization budget. It would be more appropriate to treat internationalization and localization like other monitored requirements, such as security and coding quality profiles.

If i18n and L10n issues are worked out at a later QA iteration, costs, quality and speed are sacrificed. It's best to measure and manage these during the sprint itself, in an automated and visible fashion. When feedback on issues is direct, immediate and in line with the development process, quality is increased without decelerating feature creation.



## Pseudo-localization and Continuous i18n Detection

Pseudo-localization testing is a helpful start to the internationalization process. However, **pseudo-localization by itself is insufficient**. There are still efficiency and coverage issues. Pseudo-localization will apply to only what's tested in the user interface and will most likely not find all text-related i18n bugs. It is UI oriented and any bugs discovered will still need to be logged and found in the source code.

Although Lingoport's software suite automates pseudo-localization in a continuous manner for testing, it's even better if a developer finds those issues during their regular flow of daily work, which is what Lingoport's Globalyzer Lite provides from the developer IDE or during code check in. There's nothing ambiguous about where the issue is in the source code. Furthermore, if the source code is analyzed, there are greater opportunities to uncover more complex

problems, which might not be found in pseudo-localization testing. Globalyzer will find embedded strings, concatenations (likely not to translate well), locale-unsafe methods, functions and classes, locale-unsafe programming patterns and static files. Issues such as character encoding, numerical unit formatting, limiting fonts and more are detected over a wide variety of programming languages.



## Continuous Localization in Every Sprint

Of course the ideal scenario is for your organization to localize your changes in every sprint. When localizing for a specific set of sprints and releases, typically the changes aren't particularly large in terms of new words for translation. If under a hundred or so words are changing in a handful of repositories, for example, the cost per word is fairly irrelevant. Instead, it's the **cost of managing that effort that becomes the dominating variable.**

Additionally, human error plays a role in why so many companies are not localizing in every sprint. Delays and human error are normal. Individuals are busy, and manual tasks can easily be forgotten, ignored, or pushed to the future when one is under the pressure of a deadline -- people naturally look for shortcuts. It's no wonder that the survey results showed that companies were not localizing in every sprint, presumably allowing the localization backlog to accumulate.

Some of the tasks involved in software localization include:

1. Finding out what's changed and will need localization from the resource files in the source repositories
2. Gathering those resource files
3. Inspecting those files for formatting and errors (i.e. duplicate string IDs, missing curly brackets, encoding)
4. Loading them up to a TMS or localization vendor portal
5. Getting the strings back
6. Inspecting the files for completion or issues
7. Adding back in some set of strings that changed at the last minute
8. Reinspecting the files
9. Manually inserting them into source code to begin testing

In order to achieve a seamless, efficient, scalable and reliable global software development operation, **literally everything on this list should be fully automated, highly visible and collaborative**, as it is in a continuous localization system like the Lingoport Suite. There is no guessing about what's changed, the status of the source code, file integrity, localization due dates, new word count and completion. Pseudo-localization is also automated, so QA can always be functionally testing for all target locales, right up to date with development changes. Even linguistic testing can be tightly integrated.



## Why it Matters

The emphasis on agile and continuous development has been for the purpose of bringing product users new functionality quickly, with controlled risk and faster execution. Delighting customers with new features has become simply what's expected.

Similarly, **localization delivers customer delight for those in global markets**. Localization is performed to raise the local appeal and competitiveness of software in any particular market. This goes for SaaS as well as traditional on-premise or device software delivery.

If i18n and L10n are behind in the development process, then you are foregoing customers outside of home markets as second class users, whose usability is less important than the pace of new development. Given automated continuous i18n and L10n systems delivery, this is no longer a pragmatic compromise in global software delivery. Adopting systems will help the entire organization to be better globally-oriented, from product development to vendor partners to in-country sales teams, because there is no outside extra step and the process has become efficient and

natural, just like other software quality and functional management.

Many software companies are now deriving the majority of revenue from outside their home market. With this in mind, it's important to treat all customers as first-class users who deserve the best that your organization can deliver. Doing so provides your company with greater opportunities for growth. What this survey reveals, though, is that the software industry has a long way to go in achieving truly seamless and efficient global software development operations that include automated continuous i18n and L10n.



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## About the Survey

Lingoport solicited participation in the survey via email to our mailing lists, through the Lingoport blog, and via social media announcements. We promised donations to Translators Without Borders to further spread the survey reach on social media by tying the survey to a worthwhile cause.

We ended up with more than 80 completed surveys. This volume of responses, we feel, was sufficient to show current trends at a high level among those involved in localization management and software development. We also emphasized software localization in the survey over localization

of manuals, marketing materials and other types of documentation, to ensure that the responses were consistently focused specifically on software i18n and L10n. We can't claim that this is a scientifically designed survey, but it works as a general indicator and we hope that you find it useful in that capacity.



## About Lingoport

Lingoport provides internationalization and localization products and services that help your organization build world-ready software that's easily localized in every sprint and release.

With 18 years of internationalization experience and over 1 billion lines of code scanned, Lingoport is uniquely positioned to help you deliver exceptional global software to your customers around the world.

Lingoport Globalyzer is your operating system for exceptional global software, helping you find and fix internationalization bugs. Lingoport Resource Manager is our localization process management software that eliminates error-prone, manual processes and saves your team hundreds if not thousands of hours of engineering time.

Lingoport's InContext dramatically simplifies Linguistic Quality Assurance (LQA), presenting translators with contextual views of software so that their efforts are visually supported for faster, more accurate localization in alignment with agile sprints.

You can also rely on our experienced team for internationalization consulting, implementation and training for your agile software development.

Whether your team is comprised of 20 or 20,000 developers, we've got you covered. Some of the largest and best known technology companies in the world are using the Lingoport Suite across their enterprises. Our clients rave about our responsiveness and support, and even our ability to help your business transform the way you approach global software development. We use technology and i18n expertise to help you bring agile development and localization together in fueling your worldwide growth.

Learn more at [Lingoport.com](https://lingoport.com)



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