



Back to school

Apps for primary school children and younger

August 2014

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Executive summary

As smartphones have become commonplace, the market for apps for children has emerged. This report covers Apple App Store and Google Play apps for primary school children and younger, shedding light on this newly emerging market. The data was sourced from the apptrace.com database on August 19, 2014.

Children are increasingly using learning apps to boost their reading skills, math, eye-hand coordination, and more. Tablets and computers are becoming commonplace in schools today, as they are regularly used for teaching.

The industry already recognizes a strong demand for such youth-centric products. Apple's "Kids" App Store* was launched a year ago and already offers in the vicinity of 80,000 apps out of a total close to 1.3 million apps in the store. This indicates that approximately 6% of the apps in the App Store have been rated as appropriate for young children. More than 72% of children under 8 and 38% of children under age 2 have used a mobile device in the past year, with up to half of them using the devices daily**. These numbers are also high in Germany, where smartphone use by primary school children has reached almost 65%***.

Interesting stats from Apple App Store's apps for kids

- 60% of the apps are also in the category 'Education'; almost half of these (46.5%) are also in the 'Games' category.
- High percentage of iPad specific apps (over 22%), which is more than twice that of the other apps (10.2%)
- Almost all of the apps (more than 98%) are primarily in English or have an English translation
- There are 16,855 apps for non-university level math and they are targeted by the developers at boys three times more than at girls
- Apple offers 2,067 apps to help children with their homework compared to Google Play's 924 homework apps
- The average price for paid apps is \$2.56 USD or 2.30 €

Google Play apps for children

Google Play does not have a "Kids" category for young audience applications, nor does it currently offer developers the ability to specify recommended age ranges. Both make Google Play difficult to navigate for those seeking apps for children. Using child-related keyword searching (and filtering for pregnancy related apps), the [apptrace](http://apptrace.com) database found that 318,674 out of 1,236,698 Google Play apps appear to be child-related, or roughly 25.8%, which is less than the apps found in the Apple App Store with the same search (367,968 apps or 28.5% of the App Store). Due to the lack of age categorization on Google Play, it is hard to determine which of these may or may not be child appropriate. Hopefully Google Play's new "Games Family" category will provide some guidance for parents.

Future trends

As children become more technically involved, and the lines between computers and phones get further blurred, *adjust* expects to see a rise in educational and child appropriate apps for iOS and Android.

In addition to apps for children to use, parental control apps and find your child geo-location based apps, we've also seen a trend towards primary schools developing apps to keep parents informed about school news, homework and parent's blogs.

adjust also sees an opportunity for more information and educational apps targeted towards children and parents of young children. As the Apple App Store and Google Play evolves, there will be more support for parents to discover appropriate apps for young children. Marketing is essential for app visibility and as this segment matures over the next year, engagement will become more of an important focus.

* Introducing the Kids Category on the App Store <https://developer.apple.com/news/?id=8162013a>

** Common Sense media (October 28, 2013) Zero to Eight Children's Media Use in America 2013. www.common Sense media.org/research/zero-to-eight-childrens-media-use-in-america-2013

*** Report released last month by KAVAJ claims that almost 40% of German primary school students have their own smartphone and an additional 25% use their parent's smartphone. www.presseportal.de/pm/112145/2791620/schluesselkind-2-0-knapp-40-prozent-der-grundschueler-besitzen-bereits-ein-eigenes-smartphone



1. App options for young children

Smartphones are a part of everyday life and children are often exposed to them from the day they are born - with happy parents taking short videos and quick photos. The use of smartphone amongst primary school children and toddlers is also growing exponentially as children have more access to smartphones through their parents (increasing mobile penetration globally) and as schools embrace technology.

72% of children under eight and 38% of children younger than two have used a mobile device last year, a figure that has doubled in two years, according to a report titled [Zero to Eight Children's Media Use in America 2013](#) released by Common Sense Media. And, over the past 2 years, the percent of children who use mobile devices at least once a day more than doubled, from 8% to 17%.

Another report released last month by [KAVAJ](#) claims that almost 40% of German primary school students have their own smartphone and an additional 25% use their parent's smartphone.

Our report looks at which apps are available for children up to the age of 12 for the Apple App Store and Google Play. It investigates educational and non-educational apps, app prices, as well as parent control, security apps and future trends.

Methodology

All data in this report was sourced from *adjust's* apptrace database on August 19, 2014. The database is used by *adjust's* free online tool, [apptrace.com](#) to provide the mobile industry with valuable insights into app performance in the Apple App Store and the Google Play Store. It includes app rankings, categories, ratings, versions and reviews. The apptrace sentiment analysis of app store reviews was also used to identify recommended app top lists in this report.

The data on Apple's App Store is aggregated from Apple's Enterprise Partner Feed (EPF). Our data covers all apps that were ever available in the App Store and all Google Play apps that ranked in the past year and a half.

As the Apple Kids Store, which is sometimes referred to as the 'Kids' category, is not a genre or category such as 'Games' or 'Education' listed on the EPF, the selection of apps called Kids apps in this report are an approximation of this sub-store. The composition of the categorization algorithm was guided by the criteria specified for the Kids section by Apple, therefore imitating the manual selection executed by Apple.

apptrace sentiment analysis

adjust's apptrace's takes over 56,473,400 App Store reviews and 16,536,900 Google Play Store reviews and provides a reviewer centered analysis for each app with enough reviews. The sentiment analysis shows the app's characteristics and what type of reviews it has in the App Store.

apptrace breaks down each app review into the individual sentences and then our algorithm looks at grammatical patterns, such as the key verbs and the language around it. Our dictionary contains verb conjugations and tenses and a range of language patterns, allowing it to be flexible while still crunching the data from every single review. Ratings for each individual sentence in the review are combined and weighted to give an overall message score.

Each app with enough reviews is then given a rating for positive feedback, addictiveness, negative feedback and crash complaints. Changes in sentiment over time are graphed for each individual app and word clouds are also provided to show which words are most commonly used in the reviews.

Apple App Store and Google Play for young children

The Apple App Store could be considered more parent friendly than Google Play. The App Store offers age recommendations, which are 4+, 9+, 12+, 17+ and no recommended age, making it easier for parents to decide the age appropriateness of an app. Additionally, in mid 2013 with the launch of iOS7, the Apple announced a new Apple Kids Store for children under 12 years old. Its aim is to provide “parents with a place to find age-appropriate apps for their children”. Apple editors curate the apps to make sure they fit stringent criteria. The requirements for apps in this sub-store include compliance with children's privacy statutes, no behavioral advertising, parental permission before engaging in commerce and apps must be made specifically for kids ages 5 and under, ages 6-8, or ages 9-11. The apps are accessible by browsing the App Store on an iOS device or computer running iTunes and selecting Kids under the Category option.

Through running searches on the apptrace database, based on age and content criteria, we estimate that the Kids store already has approximately 80,203 apps out of 1,299,049 apps in the Apple App Store (almost 1.3 million). This means that currently 6.2% of iOS apps are appropriate for young children.

This report refers to apps that fit the criteria of this special Apple Kids Store or Kids category as ‘Kids’ apps.

Google Play is a less controlled environment and currently does not have a category for young children. Developers also do not have the possibility to fill out a recommended age field to make it easier for parents to know the age appropriateness of an Android app. However, earlier in March this year, Google announced additional subcategories to the ‘Games’ category, including a ‘Family’ category. More information can be found here: <https://support.google.com/googleplay/android-developer/answer/4353443>.

Most Google Play apps that are appropriate for children can be found in the ‘Education’ category. Overall, *adjust's* apptrace database has 1,236,698 Android apps listed – that is apps that have made it onto a top list since *adjust* started tracking Google Play earlier last year. Currently of these apps, there are 318,674 apps in Google Play for which the title or description contains ‘kid’, ‘child’, ‘son’, ‘daughter’, ‘boy’, ‘girl’, ‘baby’, or ‘toddler’ and not related to pregnancy. Therefore 25.8% of Google Play apps in our database fit the criteria.

When the same search was run on the Apple App Store, 367,968 apps were found, which is 28.5% of the Apple App Store.

How many iOS Kids apps are there in each country?

The number Kids apps in all countries are very similar, as developers do not need to restrict the app to a specific country. For example, the U.S. store has 79,205 Kids apps, the UK store has 78,896, and Australia has 78,848. The store with the lowest number of Kids apps is Ukraine with 77,286 apps.

A look at App Store Kids apps by language tells another story. The column ‘Count EN’ is the number of Kids apps that have an English and local language description. ‘Local language’ is the number of additional apps that are only in the local language (with no English description). Note: these numbers are based on local language word searches combined with local language codes.

| Language | Count EN | Local language | Total |
|----------|----------|----------------|--------|
| English | 79,109 | - | 79,109 |
| German | 12,733 | 1,590 | 14,323 |
| Spanish | 12,331 | 579 | 12,910 |
| French | 11,618 | 1,141 | 12,759 |
| Chinese | 11,359 | 6,121 | 17,480 |
| Russian | 8,507 | 775 | 9,282 |
| Turkish | 4,926 | 166 | 5,092 |

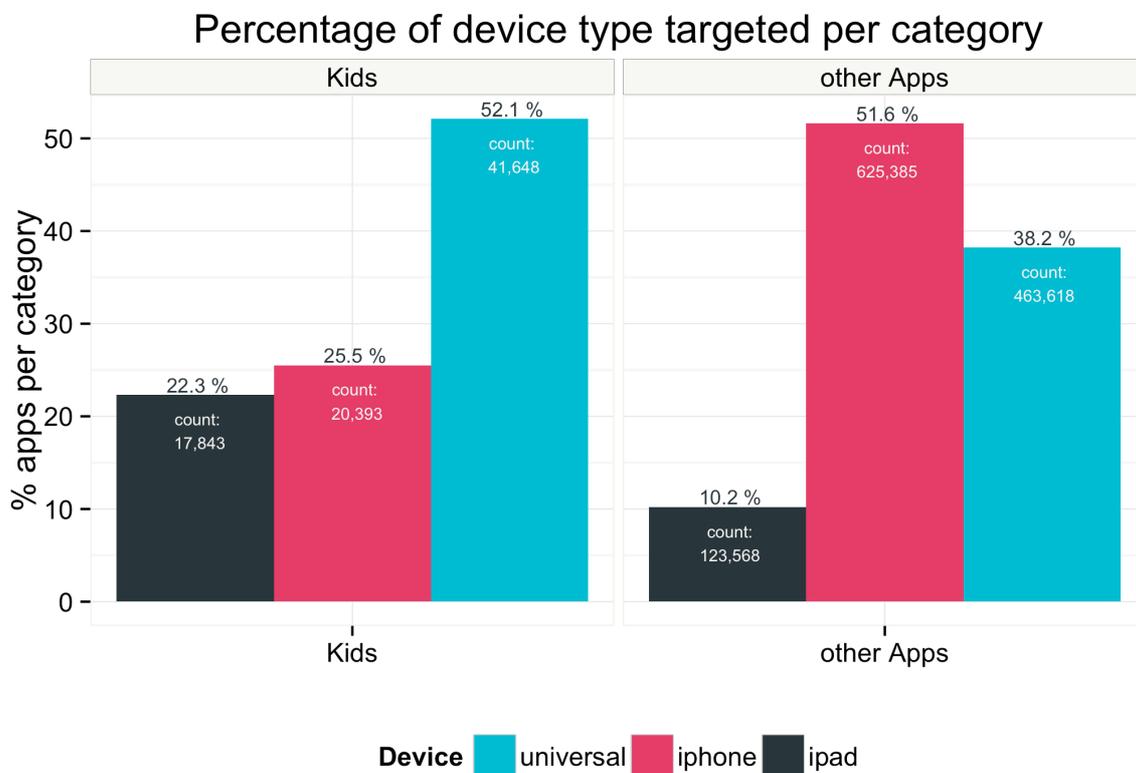


2. Device distribution for children's apps

Apple App Store Kids apps are more device-specific than other categories with a higher percentage of iPad specific apps.

Three quarters of Kids apps are available for iPad (74.4%), where as other iOS apps only have half the number of the apps available for iPad (48.4%). Additionally, there are twice as many Kids apps made exclusively for iPad (22.3%) compared to the rest of the store (10.2%).

At *adjust*, we speculate that the increased percentage of iPad apps could be related to a trend towards the use of iPads and other tablets in schools for educational purposes combined with the fact that iPads offer a larger screen size for the less dexterous little hands.



The columns labeled "other apps" includes all apps not included in Kids.

3. iOS educational apps for young children

In the Apple App Store, apps can be listed in more than one category by an app developer. Of the 80,203 apps categorized as suitable for young children, 48,153 apps (60%) are listed in the category Education, showing that 22% of the 218,778 apps currently listed in Education are suitable for children under 12. There are also 4,970 apps in the Kids category that are tagged as 'Educational games', but not as 'Education' apps – this increases the rate of apps for Kids that have a clear educational purpose to two in three (66.2%).

Did you know there are a staggering 11,393 apps in the Apple App Store that help young children learn how to count? There are also 7,367 math apps for young children, which is 43.7% of math apps available for primary and high school students (16,855). To find these apps, *adjust* looked at apps that have the word 'math' or 'multiplication' or 'subtraction' in the title or description.



To look at gender bias from a parental or user perspective towards math apps, *adjust* number crunched 1,709,802 reviews on apps for young kids. Of these there were 570,530 Education category apps and 64,987 apps that had a clear math theme.

To our relief we found that roughly the same amount of reviews indicated use by a boy as reviews indicating use by a girl in both Kids Education category and Kids math segments.

The word cloud on the left shows typical words found in reviews for young children math apps.

Number of these reviews on KIDS apps indicating use by a **boy**: 53,512

- Of these in Education category apps: 33,700 (63.0% of all reviews indicating boy use)
- Of these that are math apps: 5,235 (**15.5%** of boy reviews in Kids and Education; **9.8%** of all reviews that indicate girl use of an app)

Number of these reviews on KIDS apps indicating use by a **girl**: 45,852

- Of these in Education apps: 28,737 (62.7% of all reviews indicating use by a girl)
- Of these that are math apps: 4,711 (**16.4%** of girl reviews in Kids and Education; **10.3%** of all reviews that indicate girl use of an app)

This is not surprising, as parents will guide their children towards math – no matter what the gender of their child. However, this seems to be unexpected by the developers and app publishers as only 136 of the math Kids apps are targeted towards girls (by mentioning 'girl' or 'daughter' in the title or description), whereas 466 math apps for Kids targeted boys (mentioning 'boy' or 'son'). This is 3.42 times as often!

The same discrepancy is also shown in counting apps (only 276 mention girls, when 724 mention boys – 2.6 times as many). It is much larger than the general bias that the developers have towards boys: the Educational Kids apps target girls 1,589 times explicitly and target boys 3,926 times (2.47 times as often).



Apps to help with homework

The Apple App Store has 2,067 apps to help children with their homework.

apprace's database lists only 924 Google Play homework apps that are not aimed at college-level students (this means apps that have made it to a top list). We discovered these apps through searching the apptrace database for apps that contain the word 'homework' in the title or description.

For German speakers, curiously, the number of apps for homework is larger on Google Play: 58 apps for Google Play, and 51 apps on the App Store with 'Hausaufgaben' in the title or description.



Most positively rated children's educational apps for iOS

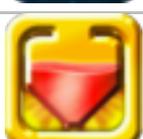
To find the best educational apps for iPhone or iPad, we ran a sentiment analysis search on all Educational category apps for young children in the App Store with more than 200 reviews in English. See our explanation of the apptrace sentiment analysis on page 1 for more information on how the data was analyzed.

The following chart shows the most positively reviewed educational apps for children, that is, apps that have reviews that talk about that they love an app or a feature, or generally find it fun, great, perfect, etc., or recommending others to buy or download it. The 'Rank' is the app's Global Rank on apptrace.com.

| Most positive | App name | Positive | #Reviews | Rank |
|---------------|---|----------|----------|--------|
| 1 |  <u>Bugs and Buttons</u> by Little Bit Studio, LLC. A uniquely styled collection of games and activities that are entertaining and educational. | 87% | 451 | 7,150 |
| 2 |  <u>Kids Puzzles Puzzingo - Learning Puzzle Games for Toddler</u> by 77Sparx Studio, Inc. | 85% | 2,245 | 11,031 |
| 3 |  <u>Preschool EduKitty-Amazing Early Learning Fun Educational Quiz Games for Toddlers and Preschoolers To Learn</u> | 84% | 333 | 2,872 |
| 4 |  <u>Heidi on the Alp</u> by JustKidsApps - Katrin Draemann Barothy | 83% | 215 | 61,361 |
| 5 |  <u>Shape-O ABC's</u> by Bellamon For preschool age kids that encourages "learning by doing" with puzzles, shapes, words, colors and sounds. | 83% | 226 | 98,013 |
| 6 |  <u>TeachMe: Kindergarten</u> by 24x7digital LLC. Sight words, addition, subtraction, spelling, writing letters and numbers. | 82% | 594 | 3,389 |
| 7 |  <u>Monkey Math School Sunshine</u> by THUP Games | 82% | 222 | 2,106 |
| 8 |  <u>Green Eggs and Ham - Dr. Seuss</u> by Oceanhouse Media | 82% | 251 | 8,302 |
| 9 |  <u>Endless Alphabet</u> by Originator Inc. Kids will have a blast learning their ABC's and building vocabulary with the adorable monsters in Endless Alphabet. | 82% | 3,983 | 508 |
| 10 |  <u>Dr. Seuss's ABC</u> by Oceanhouse Media Explore pictures, learn new vocabulary, and personalize the story with your own narration. | 81% | 463 | 9,665 |

Most addictive children's educational apps for iOS

The following table lists the top Educational category children's apps that are addictive. The reviews talk about an app being enjoyable, useful, addictive, entertaining, fun, or easy to use. Reviews indicate how they keep using an app or can't stop playing it. Addictiveness is always desirable for Educational apps as it means the user is likely to be engaged with it for longer periods of time – potentially providing more learning potential for children.

| Most addictive | App name | Addictive | #Reviews | Rank |
|----------------|--|-----------|----------|--------|
| 1 |  <u>Doodle Numbers Quiz</u> - addictive matches puzzle game like little things forever by RedSpell | 54% | 3979 | 114037 |
| 2 |  <u>Bubble Breaker : Insanely Addictive</u> by Aun Taraselina. Scores are based on the amount of bubbles you are able to burst with the same color. | 53% | 257 | 117407 |
| 3 |  <u>Alphabetic</u> by No Monkeys Great for kids who are still learning their ABC's and novice/casual players that want a more relaxed experience. | 50% | 429 | 151386 |
| 4 |  <u>Super Juicy</u> by Berzerker Games If you like tetris, bubble burst, bejeweled etc, this is right down your alley. | 48% | 499 | N/A |
| 5 |  <u>BeeCells Lite</u> by Bootant LLC | 48% | 237 | 229912 |
| 6 |  <u>10</u> by IOJOE 10 is a puzzle game made of numbers. | 47% | 268 | 10262 |
| 7 |  <u>Cablinc</u> by NextWave Solutions, LLC Can you solve Cablinc's puzzle by connecting all the pieces to one another? | 47% | 208 | N/A |
| 8 |  <u>Dabble - the Fast Thinking Word Game for iPad</u> by INI, LLC | 46% | 252 | 17834 |
| 9 |  <u>Sand Slides</u> - Falling Sand Game. Draw Doodle's to Beat the Sandman in this Addicting Zen Sandbox Puzzle Game | 46% | 2607 | 70519 |
| 10 |  <u>Bust A Marble</u> by Fairlady Media Bust groups of colorful marbles with a satisfying CRUNCH in this fast-paced puzzle game. | 44% | 670 | |

4. How much are parents spending on kids apps on iOS?

The most expensive apps in the Apple App Store are \$999.99 USD or 899.99 €. The App Store currently has 85 apps in this price range.

We searched the appttrace database for the most expensive Kids apps. The top five are listed below.

| Most expensive | App name | USD | EUR |
|---|--|----------|---------|
| 1  | <u>Apraxia Picture Sound Cards APSC Pro</u> by Foundations Developmental House, LLC For individuals with childhood apraxia of speech (CAS) and severe phonological disorders. | \$299.99 | 269.99€ |
| 2  | <u>LAMP Words For Life</u> by by Prentke Romich Company. Address the language development and communication needs of children with autism. | \$299.99 | 269.99€ |
| 3  | <u>Proloquo2Go</u> by AssistiveWare. Symbol-supported communication app providing a voice to over 75,000 individuals around the world who are unable to speak. | \$219.99 | 219.99€ |
| 4  | <u>TapSpeak Choice AAC</u> by Ted Conley For children and adults with autism, cerebral palsy, Down Syndrome or any disability that impairs their ability to communicate. | \$219.99 | 199.99€ |
| 5  | <u>QuizCenter</u> by Rand Alexander QuizCenter is a library of quizzes. Find trivia about your favorite movies, TV shows, music, and pop culture! | \$199.99 | 179.99€ |

The market mechanism at work

The average price for paid App Store Kids apps is \$2.56 USD or 2.30 €. The full currency table is listed below to two decimal points. The 'Average price' is based on individual store currencies and not exchange rates. The 'Currency conversion rate to USD' was calculated according to the rate given on www.oanda.com on August 19, 2014. The Indonesian, South African and Turkish stores offer a lower price based on USD conversion than The UK, Danish and European stores.

| Currency | Currency code | Average price | Currency conversion rate to USD |
|------------------------|---------------|---------------|---------------------------------|
| South African Rand | ZAR | 20.82 | 1.96 |
| Indonesian Rupiah | IDR | 24604.76 | 2.10 |
| Turkish Lira | TRY | 4.63 | 2.14 |
| Indian Rupee | INR | 142.17 | 2.32 |
| Russian Rouble | RUB | 84.45 | 2.32 |
| Canadian Dollar | CAD | 2.56 | 2.34 |
| Australian Dollar | AUD | 2.65 | 2.34 |
| Japanese Yen | JPY | 256.61 | 2.50 |
| Saudi Riyal | SAR | 9.41 | 2.51 |
| Mexican Peso | MXN | 33.23 | 2.52 |
| Utd. Arab Emir. Dirham | AED | 9.41 | 2.52 |
| Hong Kong Dollar | HKD | 19.74 | 2.55 |
| Taiwan Dollar | TWD | 77.02 | 2.56 |
| US Dollar | USD | 2.56 | 2.56 |
| Chinese Yuan | CNY | 15.93 | 2.59 |
| Swedish Krona | SEK | 18.85 | 2.59 |
| Singapore Dollar | SGD | 3.28 | 2.62 |
| Swiss Franc | CHF | 2.56 | 2.82 |
| New Zealand Dollar | NZD | 3.41 | 2.88 |
| Norwegian Kroner | NOK | 18.01 | 2.91 |
| Israeli New Shekel | ILS | 10.18 | 2.93 |
| British Pound | GBP | 1.76 | 2.95 |
| Danish Krone | DKK | 16.85 | 3.02 |
| Euro | EUR | 2.30 | 3.07 |

In-app purchases

In-app purchases are a touchy subject for apps for children. Last month, the European Commission's findings into in-app purchases stated that better protection is required for consumers, particularly children. They provided a set of rules to Apple, Google and other app store owners covering transparency around costs, children can not be sold to in games, payment information needs to be provided and a trader contact email address should be available. More commentary is available on Gamasutra: [Euro authorities lay down rules for in-app purchases - Apple isn't playing ball just yet.](#)



5. Interesting trends

As children become more technically involved, and the lines between computers and phones get further blurred, *adjust* expects to see a rise in educational and child-appropriate apps for iOS and Android.

In addition to the boost in children-specific apps, there is also a market for apps for parents with young children. Some of the more recent trends include geo-tracking apps that take advantage of more recent technology, and also the shift from traditional parent and school communication to operating on a mobile platform.

Parental control and child tracking apps

With increasing ease for underage children to access the Internet and app stores comes the need for some parental control to safeguard vulnerable children.

Parental controls range from apps that forward SMS messages to another phone to children trackers so parents know where their children are located and notify the parents when the child travels outside pre-designated areas (TrackYourWife is also available). Apps are also available that send the child's phone voice messages when they stray from specified locations.

Time lock apps such as Parental TimeLock – Time limit for children are available to prevent children spending too much time on their phone.

Apps produced by primary schools to keep parents informed

Some schools have opted to embrace technology and offer apps for parents to help keep them informed about their child's school. Features can include access to newsletters, parent blogs, event calendars, children assignment updates and alerts. Apps offer the advantage of push notifications to send immediate messages to parents.

Examples include the 1,565 school specific apps produced by Australian and US developer Skoolbag pty ltd. Additionally, PLK Camões TSL Primary School offers information about admission processes and interviews.



6. Discussion

Mobile apps for young children is a newly emerging market that will gain strength as mobile technology is increasingly used in schools and smartphone penetration strengthens globally.

As this new market segment provides opportunities for developers and publishers to enter the rapidly growing market, it also comes with some extra requirements such as additional legal compliance around privacy, marketing and in-app purchases that are far more stringent than for other age groups.

We expect the regulation of this segment to be continuously observed by government and children advocacy groups with a push for increased policing or monitoring. This follows recent reports such as the European Commission's report on in-app purchases and in America, the FTC's recent changes to the Children's Online Privacy Protection Act (COPPA) covering apps for children.

Marketers will need to approach this segment differently, carefully considering their target audiences, given that future users are likely to also include schools as apps become widely acceptable for teaching. As with every category and market segment, app visibility is essential. And, as this segment matures over the next year, engagement will become more of an important focus for app developers and marketers.

About *adjust*

adjust is a mobile attribution and analytics company that provides app marketers with a comprehensive business intelligence platform. *adjust* combines attribution for advertising sources with advanced analytics and store statistics such as rankings, ratings and reviews.

Attribution enables mobile app marketers to identify where a user came from and when they installed the app. In the analytics department, *adjust* offers cohort analysis in addition to deliverable analytics that count sales, events, sessions, installs and clicks. Marketers can group users together by common criteria, such as the install time. KPIs can then be normalized over the lifetime of the user. Additional product features include: app store statistics like global rankings displayed in the dashboard, deep-linking fallback and reattribution for re-engagement campaigns.

adjust is an official Facebook and Twitter mobile measurement partner, and is also integrated with over 250 other major networks worldwide. *adjust* is ePrivacy certified, uses SSL encryption for data transfer, and is the only mobile analytics company to meet the most stringent privacy compliance standards internationally.

Clients include some of the world's largest brands in Asia, the EU and the Americas, such as Baidu, Deutsche Telekom, Universal Music and Viacom. *adjust* delivers app analytics to the world's largest advertising and media agencies including Vivaki, Publicis and GroupM.

