Lifeprint

AR Photo & Video Printer

Lifeprint lets you share and experience digital content like it's 1999 - but with a totally new twist!

The Client

Lifeprint is a socially connected, portable, Wifi and Bluetooth photo printer that helps users share and preserve memories with friends, family and loved ones. Apart from social features, its companion Android and iOS mobile apps allow users to make and share Augmented Reality experiences from their photos and videos with themed masks and filters from the beloved Harry Potter wizarding world.

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When Lifeprint LLC was looking for a software house to develop its socially networked printing system, we chose Tintash - and we are very glad we did. They have a strong, capable, and very hardworking team that is skilled in developing Client Apps and associated Cloud Services. They were extremely easy to work with, responsive to feedback, and clearly took great pride in their work. When we ran into design challenges, they were very quick to offer practical suggestions to how things could be done and quickly turned around changes as needed. Tintash was focused on getting the job done, and doing it right. We look forward to working further with Tintash as we continue with our future development efforts.

Patrick Cosgrove
CTO, Lifeprint

The Goal

Preserving memories through photos and printable videos in this age and time of digital photo sharing.

In this age of digitalisation, the art of taking, printing and sharing photos and preserving our memories in photo albums has been lost. While we take and share photos and videos all the time, we lose them as easily as we take them. Our collections are fragmented across our phone camera rolls, cloud storage and social media applications and remain inaccessible to those outside those networks.

LifePrint wanted to bring back the magic of sitting together and enjoying a photo album with friends and family back into the mainstream by reimagining it as an augmented reality experience. Their goal was to 'be able to take an Apple Live Photo or a GoPro video and print it seamlessly for your loved ones to enjoy together'.

Tintash helped Lifeprint achieve this goal by building a demoable application for highly successful Kickstarter and Indiegogo campaigns that landed more than $300K worth of seed funding. This enabled Lifeprint to raise the capital to manufacture and develop their product and to nurture a passionate photo sharing community. Subsequently Tintash architected the cloud infrastructure and mobile apps that allowed Lifeprint to become an Apple global retail partner. This culminated in Warner Bros agreeing to license the Harry Potter brand to Lifeprint and allowed Tintash to create a set of themed printers and applications

The Work

Our partnership with Lifeprint spanned over a number of years and in the course of this time, we worked on different feature sets for them during different phases. Each of these phases had individual set of milestones that we helped them achieve.

Milestones

Phase 1

Q3 2014
Started converting Lifeprint's idea into a doable proof of concept

Phase 2

Q3 2015
Demoed Lifeprint's Augmented Reality experience at the Kickstarter campaign

Q4 2015
Successfully raised $200K seed funding at the Kickstarter campaign

Phase 3

Q2 2016
Lifeprint got shortlisted for an executive demo meeting with Apple

Q3 2016
Successfully raised $100K seed funding at the Indiegogo campaign

Q4 2016
Nailed the executive demo, and became a global retail partner for Apple

Q2 2017
Scaled AR to search millions of images and return within milliseconds of scan time

Phase 4

Q4 2018
Lifeprint launched on Amazon, Target and Best Buy

Q4 2018
Helped Lifeprint win a highly sought after Warner Bros Harry Potter license for new line of printers

Phase 1

Converting the idea into a proof of concept, and helping Lifeprint successfully raise seed funding through Kickastarter campaign.

Lifeprint came to us with a vision of bringing back the value of preserving memories through printed photographs. Their idea was to create an app that enables users to take pictures and videos from theirs cell phones, and print them anywhere and anytime using the Lifeprint printer.

We worked with them from the inception of the product, till the end of the successful POC built; helping them in planning and scoping out the app functionality, defining user flows, prototyping and developing the app.

The final POC allowed users to print images and videos, from a pre-existing gallery in the Lifeprint app, through the Lifeprint printer using bluetooth connectivity. Users could play the printed videos on their mobile screens by scanning them through the app.

Lifeprint was successfully able to use the POC we built to raise seed funding in their Kickstarter campaigns.

Phase 2

Scaling the POC to enable printing and scanning of thousands of user generated content, and successfully becoming Apple's Retail Partner.

After raising funding from Kickstarter and Indiegogo, Lifeprint was successful in landing an executive meeting with Apple to demo their product - the Lifeprint app and printer.

For the demo, we started working on scaling the app to support reliable printing and scanning of the user generated content.

Challenge

User generated content based AR

It was important to not only have a reliable printing module which served the core functionality of printing, but also have an equally reliable and robust scanning module to provide the best experience possible to the users as a whole.

To achieve this, we created a state machine for printing module, and an image recognition and playback experience which could support recognition of thousands of distinct user images in a timely manner.

Lifeprint's Demo stations at local Apple stores

The Lifeprint Social Community

To make the app more engaging, we created the Lifeprint social network within the app where people could share, comment, Like photos and were able to print and scan those shared photos. The app also allowed users to fetch content from their Facebook, Twitter and Instagram albums.

Phase 3

Scaling the app for China - using single code for multiple deployment environments - and launching WiFi connectivity printer

Challenge #1

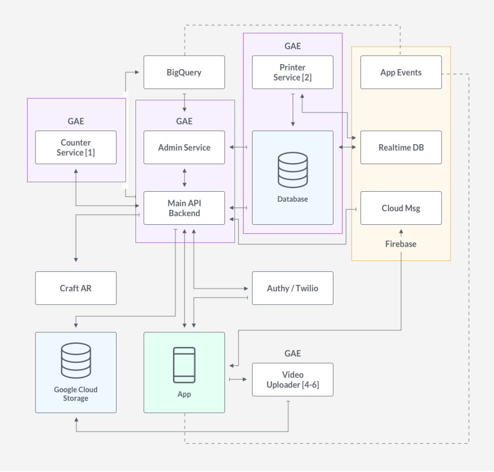
Launching global support

After becoming an Apple retail partner it was important that the app be available globally, and this meant targeting China as well.

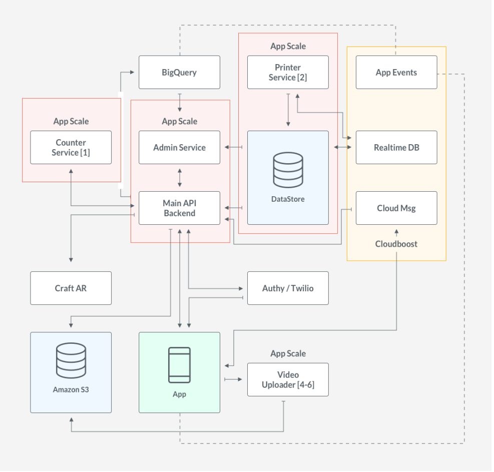
China was a major market that Lifeprint wanted to tap into but China's firewall policy, blocking most of the Google cloud services that Lifeprint app relied upon, posed a huge challenge for Lifeprint.

As a solution to that, we deployed the same python codebase to the AWS and app scale infrastructure to cater to the Chinese users. This single code multiple deployment environments infrastructure allowed us to produce a code that was easily scalable and maintainable and would work globally as well.

Updating the infrastructure meant that the overall architecture of the app also needed to be updated. The diagrams below show a comparison of the different modules of the service architecture based on region the app is being used in.



Lifeprint's architecture for global users



Lifeprint's architecture for China users

Scaling the AR experience

We also worked on scaling our AR experience during this phase. Using new AR library (CraftAR), we were successful in enabling users to scan their desired content from within more than a million user generated images in just a few milliseconds.

Challenge #2

WiFi Printing

During this phase, Lifeprint launched a new printer model which allowed users to connect to the app using not only Bluetooth, but WiFi connectivity as well.

This update required us to make changes to the printer module architecture of the app in order to handle WiFi to Bluetooth, and vice-versa, transitions seamlessly. This was a complex challenge given the possibilities of data corruption and undefined states during the handoff. We used a comprehensive state machine pattern to avoid such situations.

Phase 4

Winning a highly sought after Warner Bros Harry Potter license.

Lifeprint won Harry Potter themed printer branding rights from Warner Bros and launched a printer model that allowed the users to unlock Harry Potter theme and content inside the app by simply connecting to this printer.

Harry Potter theme implementation required us to build considerable updates to overall application's user interface and user experience design, exploring and implementing hardware based content unlocking.

We used firebase to update user data in real-time and added a theme engine using protocol oriented programing (PoP) to handle all the UI/UX updates as soon as user connected to a harry potter printer.

The Result

Provided users a unique, personalized platform to create AR experiences using their own photos and videos

While there are many Zink printers on the market, we created a unique and personalized experience that allowed users to create an AR experience using their own media - and to share that with friends and family anywhere in the world.
This unique experience impressed Apple, and it allowed a tiny start-up to displace other proven Zink printer players in the Apple store.
In a Lifeprint meeting with Apple, one exec noted that while Apple has really pushed on the AR front for a couple of years now - ONLY Lifeprint allowed users to create their own experiences with their own media.