White Paper on Digital Music Distribution Application

The executive summary
The efficiency of Digital Music Distribution Application depends on the speed of different process like uploading, encoding, distribution, royalty processing and reports. As the application scale up these processes require tune up to match the required speed of processing.

Cryptex Technologies have been delivering such solutions to the web applications like www.dashgo.com. This has helped in saving revenue loss due to delay in the processes.

Introduction
Music distribution companies like Dashgo.com help Artists and Labels to distribute the music and process the revenues at the end of the month. The profits of the web application depends on the speed and the number of songs and albums processed every month. Higher the number better the profits.

Problem Definition
The speed of process can be increased with the addition of hardware resources but it has limitations after which the software code has to be efficient. Hardware solutions are expensive as compared to the software solutions. The normal processes used in the music distribution that need improvements are
1. Encoding with Load Balancing
2. Distribution with Load Balancing
3. Sales Trends and Analytics
4. Currency Conversion
5. Auto Correction or Exceptional Matching

High-Level Solution (Encoding with Load Balancing)
The problem of encoding is resolved with the help of installing and starting more encoder. In case of Dashgo.com the average daily encoding speed with the single encoder was 250-300 tracks per day. As the application scaled up the number of tracks required to be encoded were approx 3500 per day. This was almost 10 times of the current speed. We created 5 more instances for the encoder and fine tuned the code for encoder with parallel processing. This has taken the encoding capacity to 3500+. The number of songs to be encoded vary every day. There is a large fluctuation varying from nil to few thousand songs added every day. Running 5 encoder instances attracted fixed cost per month. To reduce the cost we developed a load balancer. The encoder instances are hosted in the cloud and can be turned off and on as per the requirements. The charges are paid only for the amount of time the instances are used and not the monthly rental. This way a cost effective solution was implemented for the track encoder.

Solution Details
A listener is developed which monitors the number of tracks added for encoding. It also monitors the number of tracks pending with each instance for encoding. A logic is developed which efficiently distributes the tracks to different instances using minimum instances and maximum encoding.
This is a scalable solution and can be extended to any number of tracks to be encoded.

High-Level Solution (Sales Trends and Analytics)

Music distribution target the worldwide market as a whole. Artist from one country know about the success or failure of their albums in their own country but it is difficult for them to know about the popularity of their music in other countries or regions. Lack of this data deteriorates the efficiency of artists for creating music considering the popularity graph of listeners.

Solution Details

Sales and analytics graph is set on the website so that every artist and label can get a clear idea about the sales trends of their music. This trend statistics includes all the data, such as number of songs downloaded in different countries, song with the highest popularity, how frequently songs were downloaded and from which DSP and so on. This logic is developed to give artists and labels an additional convenience to track their growth as well as the progress in the music industry.

High-Level Solution (Auto Correction or Exceptional Matching)

DSPs sends a royalty file to music distribution companies. The file comprise of all the details of artist, type of music and so on. Its very common that DSPs make mistake in the spelling of artist's name or other details. Correcting mistake is very important because it has direct effect on royalty processing system. Royalty file received from DSP contain details of hundreds of artists and matching each and every name is difficult.

Solution Details

Implementing exception matching or auto correction feature helps in correcting the mistakes made by the DSPs. Exceptional matching can be done manually or via automated system. Mistakes once fixed get stored in the system and auto fixes the similar mistakes in future. This saves time and speed up the process ensuring accurate outcome.

Business benefits

Encoding the songs on time helps in generating more profits. Any delay in encoding is loss of revenue. Providing sales trends and analytics help artists to know about their music growth. This in turn motivate more and more artists and label to work with the company. Currency converter and exception matching facilitates the royalty processing functionality. All these elements ultimately contributes to business growth.

Summary

Implementing some of the cost effective encoding solution and other supporting functionalities help in increasing the profits. Cryptex has developed and implemented such solutions for the Dashgo.com and helped them in increasing the revenues.

Call to action

All digital media distribution applications must make sure that they track all the activities happening in any step of music distribution. This will make them aware of the flaws in the system and fixing the detected flaws will contribute in growth and development.