AK SYSTEMS INC.

AK Systems Inc Proposal for Website Redesign of City of Asheville

CITY OF ASHEVILLE

February 12, 2016 | Prepared by: AK Systems Inc. (www.aksystems-inc.com)

Prepared for: City of Ashville (www.ashevillenc.gov)

Date: Feb 12, 2016

To:
CITY OF ASHEVILLE

Subject: AK Systems' proposal for Website redesign of CITY OF ASHEVILLE

Dear Christy Edwards,

Thank you for the opportunity extended to provide our services to CITY OF ASHEVILLE. Please find here with AK Systems' approach and proposal.

If you have any questions please do not hesitate to contact me at (732)-393-1011 x512. I look forward to have your confirmation and assure you our best attention in building a long and fruitful business relationship.

Thank you.

Sincerely;

_____
Prateek Tiwari
Account Manager
AK Systems Inc

AK SYSTEMS INC.

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EXECUTIVE SUMMARY

CITY OF ASHEVILLE needs a redesign of its existing website http://www.ashevillenc.gov/ to improve the City's ability to provide the community with an intuitive, functional, user-friendly and attractive website. Based on our understanding we have defined the following objectives to be achieved in order to serve and support the requirements of City of Asheville.

- ➢ New website should have latest technology
- ➢ Flexible
- ➢ Institutive navigation
- ➢ AODA compliant
- ➢ Mobile friendly
- ➢ User-friendly and attractive
- ➢ Exemplifies character and uniqueness of Asheville
- ➢ Integrated with subordinate sites with geographic information systems
- ➢ External database searches
- ➢ Online utility payments
- ➢ Citizen reporting tools
- ➢ Citizen engagement tools
- ➢ Activity registrations
- ➢ Social networking sites

In order to achieve above required objectives, following are the new functional and Non-functional requirements which will include but are not limited to latest version of the platform with other required latest configurations to make new scalable website which will have all new following described requirements.

NON-FUNCTIONAL REQUIREMENTS:

- ▪ Provide full and complete training on the use of CMS.
- ▪ Content Migration to the new website.
- ▪ Infrastructure providing for City's in-house servers or a similarly configurable solution hosted in a cloud environment.
- ▪ Provide integration with existing government web applications currently in use and provide for easy integration with future government applications

FUNCTIONAL REQUIREMENTS:

- New look and feel including nice institutive navigation
- Responsive Mobile device friendly design
- Integration with the Asheville City Source blog at home page.
- Fix accessibility issues
- Maintaining W3C standards compliance
- Content management system
- User login through integration with the City's existing active directory authentication
- Multiple CMS user roles
- WYSIWYG content editor
- Contents modification
- Easily Templates/skins modification
- Search
- Content style wizards
- Document management system
- Access role and permissions
- Sub-site multi-site development
- SEO friendly URLs
- Site Map
- Cross browser compatibility
- Analytics for website traffic
- The platform, themes, templates and skins should be extendible or scalable
- Social Media Integration
- Optimized templates, themes or skins for page load speed
- Calendar feature
- Easy navigation menus on each pages which will have quick access to all key pages of website.
- Website should be accessible to users of all abilities, including those with visual, hearing, or physical impairments
- Template should be flexible enough to support the use of custom banner images

THE SCOPE OF WORK

The scope of work is to design and Develop an easy to use, interactive and architecturally sound comprehensive new website using Word press CMS through which, all contents of the website can be managed easily. The website will have multiple content pages, templates, themes and skins are extendible and easily manageable.

- The website must have a new look and feel that incorporates modern best practices in user interface and user experience design. The home page must integrate with the Asheville City Source blog which features our news and events.
- City Source blog is a Word press site.
- The website must address accessibility issues.
- The design of the website must be responsive on mobile devices.
- Proposal should include content migration to the new site.

- If the vendor should propose a change to a different platform, the content management system must continue to have these capabilities:

  o Capable of general World Wide Web Consortium (W3) standards compliance
  o Web-based CMS user login through integration with the City's existing active directory authentication.
  o Multiple CMS user roles
  o WYSIWYG content editor
  o Content staging and restoration through histories or undo
  o Content approval and user audit trails
  o User selectable templates or skins which can be freely modified
  o Intelligent search
  o Content style wizards
  o Document management system with access rights by user roles
  o Sub-site multi-site development
  o Friendly URLs and/or URL aliasing
  o Site maps
  o Cross browser compatibility, specifically compatibility with Chrome, Firefox, and Internet Explorer
  o Support for Google Analytics
  o Comprehensive documentation
  o Technical support, security patches, and product updates available from the software developer
  o Valid software license naming the City of Asheville as the license holder.
  o The platform, templates, themes and/or skins code base must be reasonably extensible by the City of Asheville and/or other vendors.

- The City will consider professionally developed content management system software to be installed on the City's in-house servers or a similarly configurable solution hosted in a cloud environment.

- Upon installation of software, City staff will be provided system administrator access for the installed software and have root level access to the hosting server through either virtual private network, file transfer protocol or local network Connection.

- Overarching site design requirements are

  - Responsive layouts for mobile devices
  - Accessibility to users of all abilities, including those with visual, hearing, or physical impairments.
  - Design of the website should support the branding efforts of the City and reflect the diverse make up and vision of the residents and businesses of the community.
  - Functional and easy to use calendar feature.
  - Provision of configurable site navigation menus on each page which provide quick access to all the key pages of the site.
  - Incorporate easy to use search utility displaying descriptive information on all content in the search results.
  - Ensuring site design is cross browser compatible.
  - Provide integration with existing government web applications currently in use and provide for easy integration with future government applications.
  - Integration with content from city social media sites such as Twitter, Facebook, YouTube and Instagram.
  - Optimized templates, themes or skins for page load speed

Any content management system solution proposed must utilize customizable design templates, themes or site skins which may be modified without requiring assistance from any particular vendor.

A master homepage template and interior templates must provide flexibility to support the use of custom banner images and section menus as may be required by various sections of the website. All templates, themes or skins should be developed with the standard CMS toolset or readily available plug-in modules licensed for use on multiple domains by the City.

AK Systems and the team are very confident with the above requirements. We have technical competency and broad industry experience to successfully deliver website on agreed time and budget to CITY OF ASHEVILLE.

Hosting of the Website

- Identify and assess the cloud hosting vendor such as RackSpace, AWS or Hostway, on various parameters relevant for seamless functioning of CITY OF ASHEVILLE such reliability, security, pricing and support.
- Work with the selected vendor for one server hosting and management
- Installing CITY OF ASHEVILLE Portal leveraging AKS expertise
- Customizing the hosting environment to suit CITY OF ASHEVILLE requirement
- Performance tuning of the application for optimal results
- Provide the services for one year from the date of deployment

Maintenance of the Website (Optional)

- Maintain the developed application on a monthly / yearly basis from the date of warranty support expiration
- AKS will fix the identified bugs and provide technical support
- Fix the performance issues, server issues and any other technical issues arising from the developed application
- Protect against application or system failure

SOLUTION APPROACH OVERVIEW
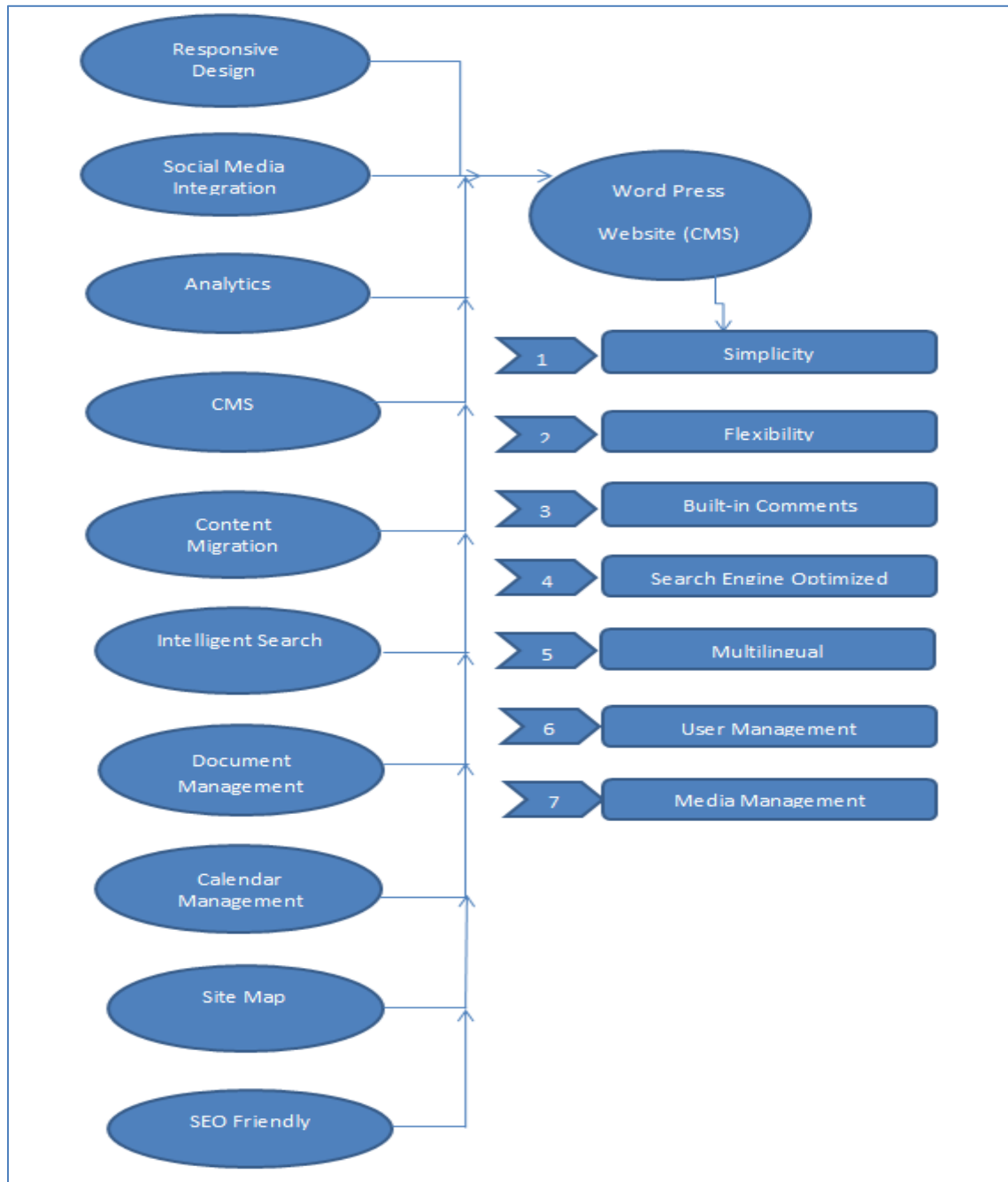
Responsive Design

Social Media Integration

Analytics

CMS

Content Migration

Intelligent Search

Document Management

Calendar Management

Site Map

SEO Friendly

Word Press Website (CMS)

1 Simplicity

2 Flexibility

3 Built-in Comments

4 Search Engine Optimized

5 Multilingual

6 User Management

7 Media Management

Technical needs and systematic implementation:

- ➢ Linux operating system (Redhat, Ubuntu or CentOS)
- ➢ Apache 2 web server
- ➢ PHP 5.5 scripting language
- ➢ MySQL 5.x database (DBMS)
- ➢ Front end technologies HTML (4/5), CSS3, JavaScript
- ➢ Word press CMS Platform (For website)
- ➢ IE 9 >
- ➢ Mozilla Firefox
- ➢ Google Chrome
- ➢ Safari
- ➢ Responsive UI using Bootstrap / jQuery implementation
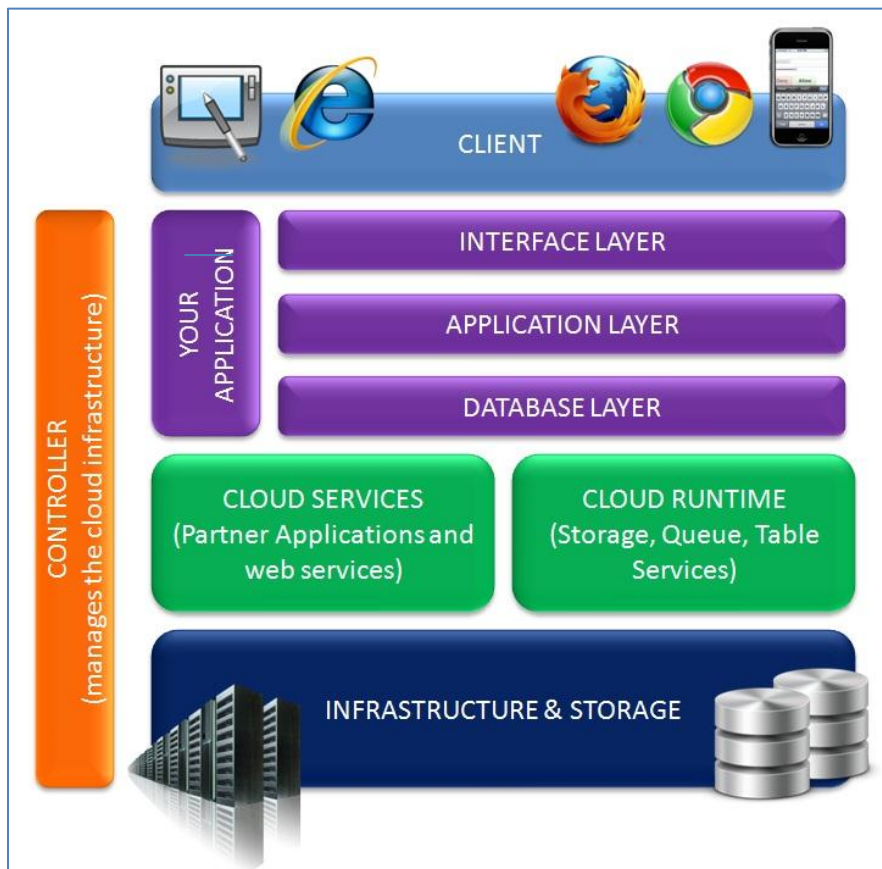
COMPONENTS OF THE EVALUATION AND SELECTION CRITERIA

AK Systems Profile:

AK Systems founded in 1997 has a proven track record of professional performance. We have been very successful in delivering Accretive Knowledge through technology for more than nineteen years, from inception to implementation. We have an impressive portfolio of Custom Application development, Just-In-Time Workforce, Mobile Solutions development, Data warehouse and Business Intelligence. Recently, AK Systems has introduced Cloud Solutions to bring benefits to its existing customers by leveraging relationship with Cloud providers such as Terrmark (a Verizon Company) and Amazon Web Services (AWS) Decades of various industry experiences, backed by technically qualified software professionals, AK Systems' Custom Development services flawlessly combine the benefits of a hybrid delivery model to lower the cost, implement best practices, reduce time to market and maximize ROI.

Organizational Structure:
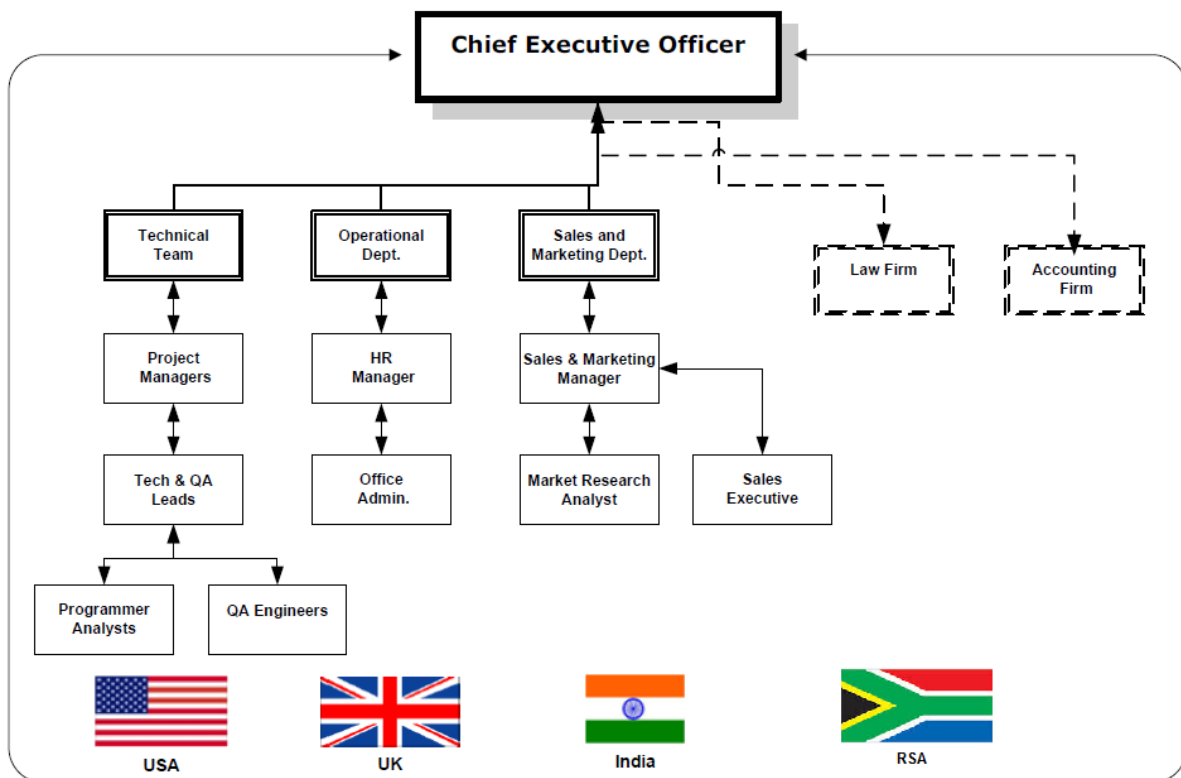
Acronym	Classification	Document type	Version	Date	Page
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AK Systems Core Competencies:

Graphics:	
Graphics:	➢ Web layout design ➢ Logo design ➢ Icon design ➢ Banner design ➢ **Tools: Photoshop, Illustrator, Dreamweaver**
Web Design:	➢ HTML 4/5 ➢ CSS 2/3 ➢ Photoshop ➢ jQuery ➢ Bootstrap ➢ Responsive website (& mobile web app) ➢ Media query ➢ Animation through HTML 5 & JavaScript animations ➢ Audio and Video player integration into design ➢ SEO and support
CMS Platforms	**WordPress 4.x and Above** ➢ Theme Creation (PSD to HTML conversation) ➢ PSD to WordPress Theme conversation ➢ Plugin development and maintenance ➢ Theme customization and maintenance ➢ Microsite creation for mobile platform (responsive for tablets and mobile devices) ➢ Child theme creation & integration ➢ WooCommerce ecommerce integration **Drupal 7.x & Drupal 8.x and above** ➢ Drupal theme creation (PSD to HTML conversation) ➢ PSD to Drupal Theme conversation ➢ Module development and maintenance ➢ Theme customization and maintenance ➢ Microsite creation for mobile platform (responsive for tablets and mobile devices) **Joomla 3.x and abov** ➢ Joomla theme creation (PSD to HTML conversation) ➢ PSD to Joomla Theme conversation ➢ Extension development and maintenance ➢ Theme customization and maintenance ➢ Joomla ecommerce integration (using eShop, k2Store extension)
MVC Platforms	➢ Zend Framework (Verson 1 & 2) ➢ Symfony (Verson 1 & 2) ➢ CakePHP (Verson 1 & 2) ➢ YII ➢ Laravel
As A Web Development Company:	➢ We are able to host & maintain applications on secure servers (Unix, Linux, CentOS, Windows Sever etc.) ➢ Load balancer grid ➢ Server optimization services ➢ 24 x 7 support covering all business risks

Website design experience in public & private sector projects:

1. https://www.pblassaysci.com/
Technology: PHP, Drupal 7, Ubercart, Solr Search, WordPress, FedEx API, and Authorize.Net

Description:
Client is a leading life sciences company, working hand in hand with industry, academic, and government researchers to help solve difficult assay development and protein quantification problems. Client's web portal which also houses ecommerce system needed a much required design refresh and functionality enhancements in terms of better search capabilities. Client also entrusted AKS to change their software and hardware vendors. Client's legacy website had many limitations, right from ease of changing website contents to how search works and web server security concerns. Client wanted better control over changing the website contents, product catalog and categorized search results. For AKS team it was a significant undertaking to help and guide the client in not just building new web portal but also changing the vendors.

2. http://oavt.org/home
Technology: PHP, MySQL

Description:
OAVT is to maintain and regulate the professional standards of veterinary technicians and technologist. It is useful for technicians and technologists from the educational purpose. The application also has events organized for veterinary students, technicians and technologists. It has job posting and applying concept as well. For students, it schedules exams for veterinary students.

3. http://ontario25.ca/
Technology: .Net, MS-SQL

Description:
Basic idea is to convert already running access based form application to web based application for better management of data and users. Import records from access database to SQL database. Manage users using windows authentication (active directory) /intranet application. Various reports and export features based on business logic.

References: Web Development Work:

1.) https://www.pblassaysci.com/

Company: PBL Assay Science, NJ, USA
Contact Person: Mr. Bill Clark
Tel: (732) 777-9123 ext. 120

2.) http://www.weldonbarber.com

Company: Se7en LLC, Spokane, WA, USA
Contact Person: Rockwell Rutter
Tel: (509) 999-1244

3.) http://oavt.org/home

Company: SISC, Canada
Contact Person: Mr. Rob Slean
Email - RSlean@sisc.com

USER EXPERIENCE OF CONTENT MANAGEMENT SOLUTIONS THAT AK SYSTEMS HAS DEVELOPED AND IMPLEMENTED

At AKS we believe to derive and suggest cost effective solutions to our customers. As far as CMS is concerned there are in house built-in systems or open source systems like WordPress, Drupal, Joomla, etc. Due to cost effective nature of Open Source, we mainly suggest our customers to use open source technology unless there is a specific needs that do not accommodate requirements. That also enables our customer's self-dependent.

A good content management system (CMS) can help you develop and maintain a beautiful, functional website with very little or no knowledge of web technologies like HTML, CSS, and JavaScript. There are number of content management systems available, hence we follow below checklist to evaluate the correct one.

Your Organization	Sector. In which business field do you operate? Fiscal Model. Are you for-profit or non-profit? Size. How many people are in your organization? Revenue Sources. Will you be selling goods or services online?
Your Target Audience	Is your website audience internal or external to your organization? Customer type. Will your website target businesses or individuals? Income. What is the basic income level of your audience? Motivation. Will site visitors be looking to make a purchase, learn something, or interact? Demographics. Evaluate typical visitor age, gender, race, ethnicity, and geographic location. Tech Savvy. What do your visitors expect from a website? Communication. How does your audience prefer to communicate?
Your Administrative Users	Responsibility. Who will build and maintain your content management system website? Scope. How many departments will make content updates? Tech Savvy. How much training will staff require to administer the CMS? Scope. Will upper management access administrative functions?
Potential Content Management Systems	Price. How much do the software and associated licenses cost? Technology. Is the CMS hosted, or will you need servers and IT staff? Mobile Friendly. Does the CMS work on tablets and smart phones? Open Source. Is the CMS source code available? Customers. What organizations are currently using the CMS? Training. What options exist for helping staff learn your CMS? Security. Can you limit access to certain parts of the content management system? Expandability. Can you add administrative users without incurring additional costs?

Recent Experience illustrating our expertise in Content Management System:

1.) Online Learning Web Portal in CMS
Project Name – Busuu
URL: https://www.busuu.com/enc/
Technology: WordPress, PHP, MySQL

Online Learning Web Portal in WordPress CMS (https://www.busuu.com/enc/**)**	
Overview	Client is a leading service provider in learning various major languages being used majorly all over the world. They have worldwide community and users of their site can practice their language skills with their international community of over 50 million native speakers. They are offering proven learning methods in which award-winning content is curated by an in-house team of educational experts and teachers.
Business Challenge	Client wanted to redesign their website and add some more functionality into the existing one. Their old website had many limitations like website was not user friendly, website was not responsive and performance was not up to the mark etc. Client also wants to add payment integration into website and modifications into the existing content. Developing APP requirements compatible in all the devices was also into the scope. Client also required URL considerations and easy switching from http to https during template creation. Since, some module or contents were static; client also needs to make dynamic pages which would have better control from the super admin of the website. Client wants continuous ongoing changes into the website. Since, website also offers leaning content in different languages; it was great challenge for AKS Team to provide solutions for it. For AKS team, it was great opportunity to make website looks and works exactly the professional as client wants to look and perform. Client was too much curios regarding look and feel of the website and make the website user friendly with intuitive navigation.
Solution	To meet client's business requirement and expectations AKS did some great work by providing perfect design templates according to the functionalities that client requires. AKS provided great theme in which website became perfect responsive and compatible with all devices like iPads, smartphones, tablets etc. AKS Team also has successfully implemented some challenging work like adding memberships into website with different plans and payment gateway integration. AKS also provided some suggestions for making the website success according to business requirements and make some functionalities interactive and user friendly. Accordingly, client was also extremely happy and appreciated different suggestions of the AKS Team. Client also agreed to add few those suggestions into the website.
Benefits	• AKS has proved for making great professional WordPress CMS website which provides worldwide community and improves the language skills. • AKS has gained experience in working on worldwide community website which offers great leaning skills and makes people more educated with professional expert's provided lesions.
Reference	Reference can be provided on request

2.) Online Ecommerce web portal in CMS

Project Name – printissima
URL: http://www.printissima.ch/
Technology: WordPress, PHP, MySQL

Online Ecommerce web portal in WordPress CMS (http://www.printissima.ch/)	
Overview	Client is leading online selling provider for various products such as paper, printer, cash register rolls, toner etc. Client leads the biggest brands portfolio in Switzerland as well as excusive products in the field of supplies, office supplies, toner cartridges, printer cartridges etc. products of various brands. Client provides free hotline for establishing instant communication between customer and online shop whenever required.
Business Challenge	Intuitive navigation, attractive designs, secure payments and fast performance was the main objective of the client. Client needs nice interactive products gallery with detail page of the products which describes all the attribute of the product with easy navigations and faster search options for the products within any sub category. Client was too curious and focused to describe each and every aspect of the product with detail information of as many as they have in nice organized structured on the page with multiple tabs displayed. Client also needed to incorporate newsletter functionality, Google analytics and other futures. Client also wanted to incorporate login/register and compare different products futures.
Solution	To meet client's business requirement and expectations AKS Team participated actively in communication and provided solutions for making exactly the same website needed according to an ideal standard online product sell website which really helps to make more online revenue. AKS Team successfully implemented various key aspects of the website such as home page, various futures on product detail page, Nice menu navigations for categories and sub categories. Newsletter, Login / Register, compare different products, Faster global search according to keyword, integration of social media, product attribute submissions in order like size, quantity etc.
Benefits	• AKS has proved its skills in development of online store and to take any kind of assignment of such web portals. • AKS Team developed another great professional online ecommerce store which has majorly all the futures of standard Ecommerce portal with easy navigations and attractive designs. • AKS also identified different aspects and suggested to client to be included into portal for ongoing basis.
Reference	Reference can be provided on request

3.) Online web portal in CMS

Project Name – European American Chamber Of Commerce New Jersey (EACCNJ)
Live URL - http://eaccnj.org/
Under Development (AKS) - http://demo.eaccnj.org/
Technology: WordPress, PHP, MySQL

Online Community web portal in WordPress CMS	
Overview	Client is leading European American chamber of Commerce New Jersey (EACCNJ) entity and is dedicated to stimulating and encouraging productive connections between Europe and New Jersey. Their aim is to be the premier go-to organization in the State of New Jersey for the purpose of establishing and maintaining achievement-oriented commercial, cultural, educational, scientific and trade relationships between European and New Jersey businesses and entities. Hence, client is leading provider in helping U.S. businesses more growth with establishments of great communication between US and Europeans.
Business Challenge	Client's requirement was to ensure that website provides great interactive contents, look and feel, user friendly ness, performance, intuitive navigations and great responsiveness. Client also needs to add some more enhancements into the website like adding resources, blog, news, partner's functionality etc. Client also required interactive event information pages with attractive designs, service and benefits pages with online form of join EACCNJ. Since, It is related to the development of the relationship between New Jersey and Europe, AKS had big challenge for development of the website proving exact professional functionalities and design that client required. Client also required interactive list document slides and download document safely.
Solution	AKS Team developed the responsive design which is implemented in Word press and is compatible with all the devices like smart phones, I-pads and tablets. AKS Team developed Brilliant home page design which shows great image slider, latest news, Team information, dynamic online location through Google Map etc. AKS Team successfully implemented online forms of joining EACCNJ according to the membership levels that they have provided with amounts as per level defined. AKS Team also incorporated various pages and online forms with contents such as getting to know Europe, upcoming events, past events, news, blogs, resources, services and benefits etc. AKS Team also suggested various functional requirements which client liked and happily agreed to incorporate those requirements into the website.
Benefits	• AKS Team developed the great perfect professional website as per client's exact requirements. • AKS Team have gained experience in building website which is establishing great communications and relationships between two major countries.
Reference	Reference can be provided on request

CASE STUDIES

Case Study 1: Web portal development in CMS and change management	
Overview	Client is a leading life sciences company, working hand in hand with industry, academic, and government researchers to help solve difficult assay development and protein quantification problems. Client's web portal which also houses ecommerce system needed a much required design refresh and functionality enhancements in terms of better search capabilities. Client also entrusted AKS to change their software and hardware vendors.
Business Challenge	Client's legacy website had many limitations, right from ease of changing website contents to how search works and web server security concerns. Client wanted better control over changing the website contents, product catalog and categorized search results. For AKS team it was a significant undertaking to help and guide the client in not just building new web portal but also changing the vendors.
Solution	To meet client's business requirement and expectations AKS proposed latest version of Drupal CMS integration with Ubercart ecommerce and Apache Solr search engine. AKS team made the strategy and plan of giving a fresh look to client website and move hosting from legacy vendor to better and secure vendor. AKS team developed the responsive design and implemented in Drupal. AKS successfully addressed one of the many challenges of importing data from legacy system to new system, by deploying AKS migration approach. Apache Solr search was integrated with Drupal and different search categories incorporated for better filtering and organized search results.
Benefits	• AKS developed new response website that gave client better control of content to content editors • Fast and efficient search to the end users through Solr search engine • AKS identified new hosting vendor provider and assisted in providing better service
Reference	Reference can be provided on request

Case Study 2: Web portal development in CMS and change management

Overview	Client is a leading service provider in animal care industry. Client's web portal which allows their customers to order animal services and products where client required modifying several of its functionality.
Business Challenge	Client wanted to resolve several bugs and modify its commerce module to add more features to its shopping cart functionality. The older solution didn't have perfect architecture that was restricting the website from being intuitive and user friendly. Client wanted a continuous engagement to fix and modify website ongoing bases. The website had dynamic requirements which were being implemented in agile way.
Solution	To meet client's business requirement and expectations AKS participated actively in communication and provide solutions to resolve all the bugs/issues. AKS team has also migrated their ecommerce solution from ubercart to drupal commerce. Following where the other deliverables ➢ SEO optimization ➢ Page design and layout changes ➢ Module customization to meet their expectation for different functionality
Benefits	• AKS has proved its skills in Drupal to take any kind of assignment no matter what the domain is. • AKS has gained experience in working on agile requirement and meet the deadline.
Reference	Reference can be provided on request

PROJECT SCHEDULE

Execution of the development:

	Sprint 1		Sprint 2			Sprint 3			Final Sprint	
Business Analysis	■									
Design & Layout building		■								
Development			■	■						
Integration & Testing						■	■			
Deployment & UAT									■	

Timeline for completion of website development and launch:

	March Week 2	March Week 3	March Week 4	-	-	June Week 1	June Week 2	June Week 3
Business Analysis	■	■						
Design & Layout building (Branding)			■	■	■	■		
Development			■	■	■	■		
Integration & Testing							■	
Deployment & UAT								■

RESOURCE MODEL

Below is the resource plan to execute the project.

For Requirement analysis, Designing, Developing, Testing, Deploying		
	Role	Number of Resources
Resource Plan	Project manager	2
	Website designer	2
	Website developer	3
	Tester	2
	Network Administrator	1
	Trainer	1

Team Assigned to This Project:

| Name	Role
Sudershan Singh	Project Manager and single point of contact. 10+ years' experience at AK Systems and involved on each projects executed
Prateek Tiwari	Account Manager and secondary point of contact
Mahesh Chavda	Delivery Manager, managing the development, quality and delivery
Hiren Shah	Sr. PHP Developer. Has worked on many WordPress Projects with accuracy and efficiency.
Devang Vashi	Sr. PHP Developer. Has worked on many WordPress Projects with accuracy and efficiency.
Divyesh Prajapati	Sr. PHP Developer. Good experience on WordPress Projects and other CMS Platforms.
Neha Dighe	QA and Release
Sayali Kulkarni	QA and Release
Malvika	Graphic and Web Designer
Aneesh	Graphic and Web Designer
Heet Vaidya	Network Administrator
Number of developers working on the project will be decided on the final project plan and the scope.	

PROJECT MANAGEMENT

Only thing that is Constant is Change. We have with all the past experience, learned that traditional methods of project management don't work for delivering results when confronted with ever changing requirements. Hence, we have adapted Agile methodology using the SCRUM framework for project management. Agile method allows clients to be in the loop throughout the project cycle and seamlessly accept the changes.

As a custom software development and integrator company, we are on the path of using Agile Scrum methodology for all our current and future software development work.

Agile Scrum: Scrum is a way for teams to work together to develop a product. Product development, using Scrum, occurs in small pieces, with each piece building upon previously created pieces. Building products one small piece at a time encourages creativity and enables teams to respond to feedback and change, to build exactly and only what is needed. [source scrum.org]
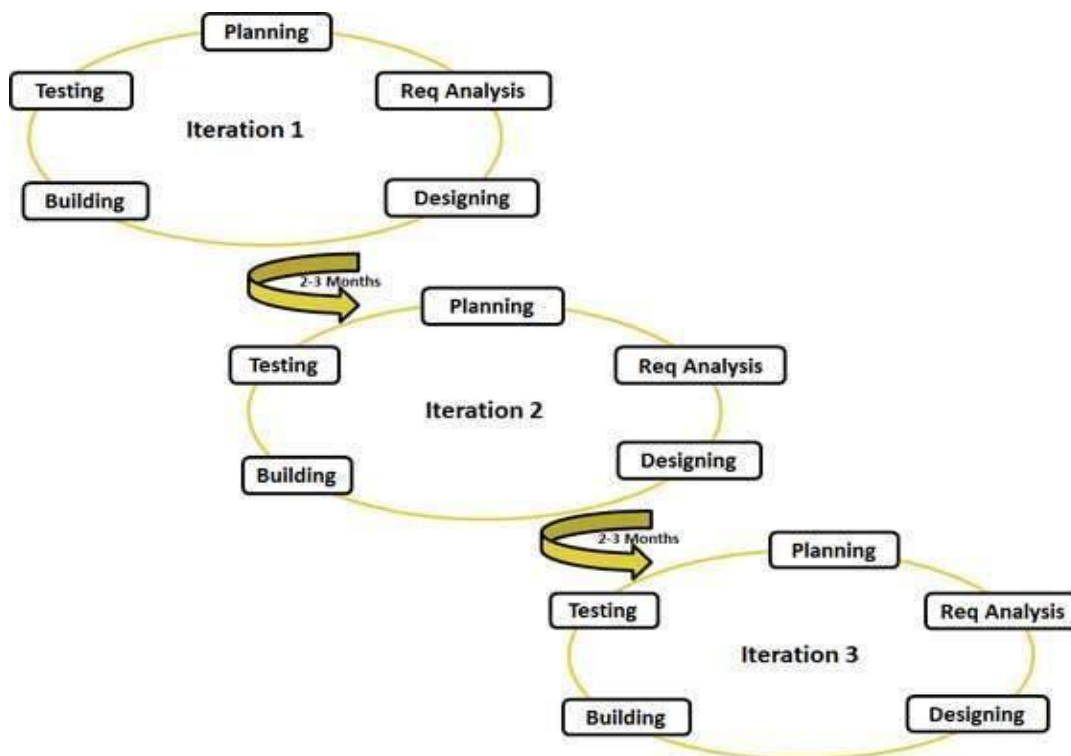
Agile model believes that every project needs to be handled differently and the existing methods need to be tailored to best suit the project requirements. In agile the tasks are divided to time boxes (small time frames) to deliver specific features for a release.

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Iterative approach is taken and working software build is delivered after each iteration. Each build is incremental in terms of features; the final build holds all the features required by the customer. Following are the Agile Manifesto principles:

- **Individuals and interactions** - in agile development, self-organization and motivation are important, as are interactions like co-location and pair programming.

- **Working software** - Demo working software is considered the best means of communication with the customer to understand their requirement, instead of just depending on documentation.

- **Customer collaboration** - As the requirements cannot be gathered completely in the beginning of the project due to various factors, continuous customer interaction is very important to get proper product requirements.

- **Responding to change** - agile development is focused on quick responses to change and continuous development.

WEBSITE DEVELOPMENT PROCESS

The process to develop the website:

AK Systems uses SDLC methodology for the overall development process to ensure quality of software and in time delivery.
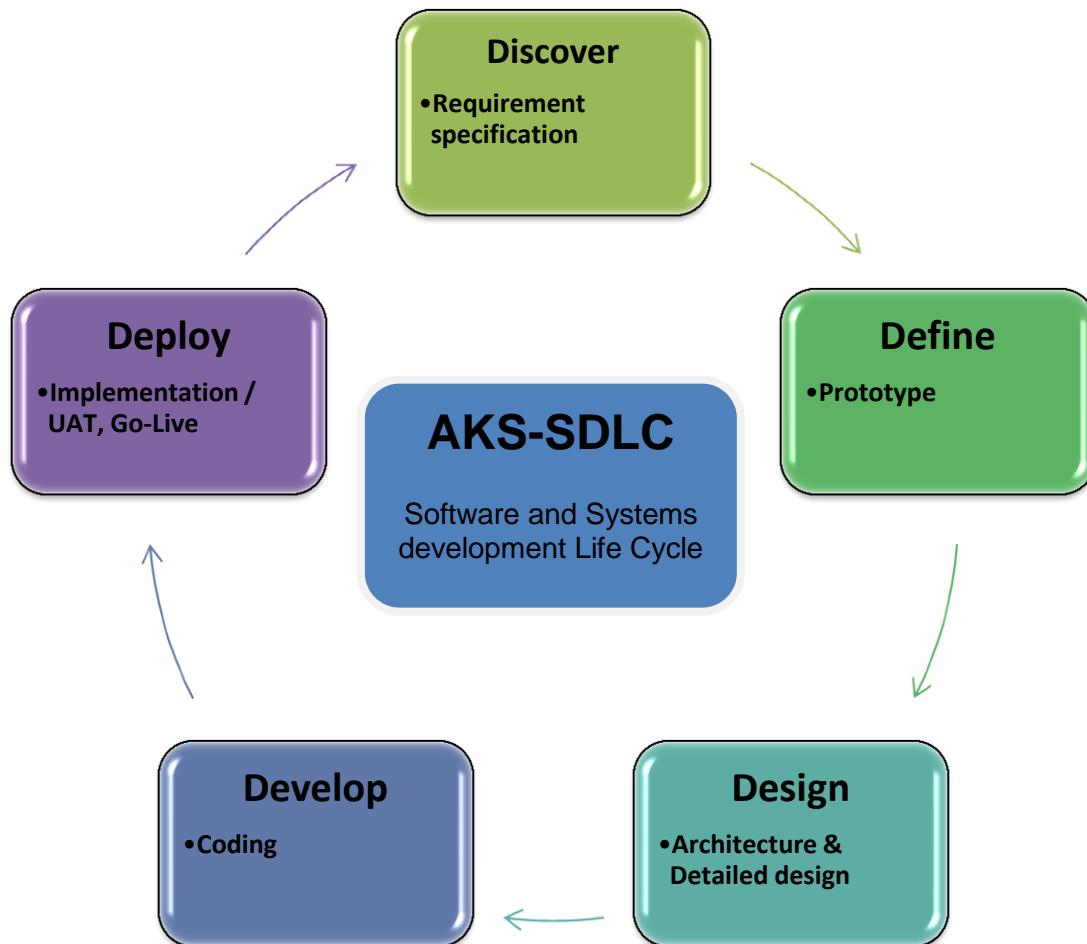
Discover
- Requirement specification

Define
- Prototype

Deploy
- Implementation / UAT, Go-Live

AKS-SDLC

Software and Systems development Life Cycle

Develop
- Coding

Design
- Architecture & Detailed design

Planning process: design phase: element process

Application Flowchart of
element analysis in webstie design process

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COMMERCIAL

Project Assumptions:

The following assumptions were made in determining staffing levels, timing, and fees. To the extent that there is a change in the assumptions, there will likely be a corresponding change in staffing, timing, and/or fees. In no event will the timing or fees be exceeded without the prior written approval of CITY OF ASHEVILLE.

➤ A CITY OF ASHEVILLE Project sponsor will be responsible for final approval of all deliverables according to the Project plan. This includes the approval of architecture, detailed Use Cases, test cases and test results. Approval is expected within 2 business days.

➤ CITY OF ASHEVILLE technical and functional resources will work closely with AKS resources to support a smooth transition at the end of the project into CITY OF ASHEVILLE's production environment.

➤ Identified CITY OF ASHEVILLE resources will be made available on part-time/full-time basis to work on this project for the full duration of the project.

➤ Subject Matter Specialists in each of the functional areas will also need to be made available to the team on an as-needed basis, to specify business rules and to answer business/technical questions.

➤ In case additional Servers, Software licenses etc. are needed for the fulfillment of technical/ business needs of the CITY OF ASHEVILLE, then the same would have to be provided by the CITY OF ASHEVILLE.

➤ CITY OF ASHEVILLE technical resources will review the object model, data model and overall architecture of the application.

➤ Any work process not mentioned in the scope will be priced and timed separately.

➤ Cooperation from CITY OF ASHEVILLE team for delivery of material and content will be considered crucial and time critical for the completion of the project.

➤ Approval and Sign-off required at the end of each stage and milestone deliverable.

➤ All orders (new, change, modification, etc.) must be accompanied by a signed authorization.

➤ The pricing in this proposal is an educated estimate of costs by the proposed scope of the project based on available information as provided by CITY OF ASHEVILLE. Estimates of time may change based on work factors.

➤ The above proposal has been prepared on the basis of the information supplied by CITY OF ASHEVILLE and does not take into account other factors that may arise.

➤ Suggestions, Comments, Approval wherever needed from the CITY OF ASHEVILLE will be vital for timely completion of the tasks/project.

Pricing Methodology:

With many years of experience across diverse industries, AK Systems offers following two engage models:-

Model 1: Fixed Fee

AK Systems' custom development services seamlessly combine the benefits of an onsite project management and offshore delivery framework to lower the costs, implement the best practices, reduce time to market and maximize ROI. Fixed fee project development where full scope and cost is defined at beginning.

- ✓ Full scope is known and defined.
- ✓ No overhead is desired and entire project management and development responsibility is given to AK Systems' team.

Model 2: Time and Materials

When the software application development project scope and specifications are unclear; or scope and specifications have a propensity to change frequently during development phase; then Time and Materials model provide flexibility to the stack holders.

AK Systems' provides skilled and dedicated engineers to work with your project manager / team to achieve task on time and materials basis. All engineers are required to provide weekly timesheets and status report to your project manager. AK Systems' has very nimble negotiable hourly rates. Please see below our standard hourly rate card.
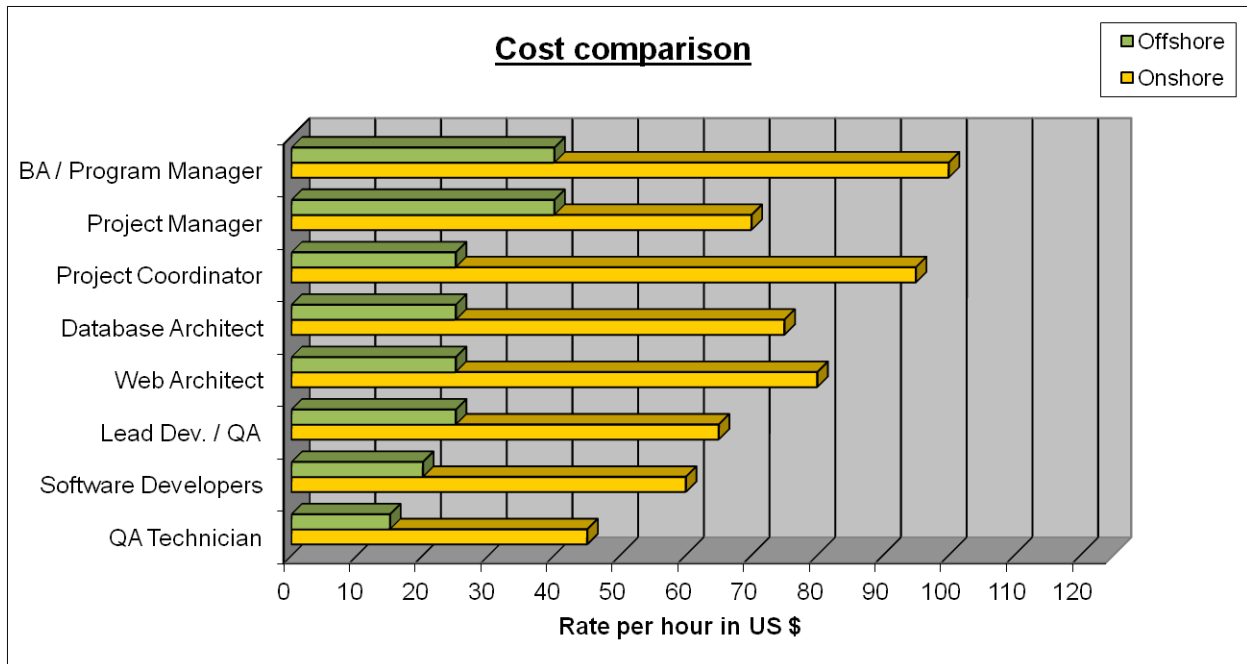
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CITY OF ASHEVILLE	**Confidential**	**Proposal**	**1.0**	**02/12/2016**	**28/34**

AK SYSTEMS INC.
200 Metroplex Drive, Suite 202
Edison, NJ 08817
Phone 732.393.1011   Fax 732.393.1430   http://www.aksystems-inc.com

Our Proposal:

Based on our review and understanding, AK Systems proposes fixed fee model.

For budgetary purpose, our approximate timeline and fixed-cost to redesign the existing website is detailed below.

Effort and Cost *	
For Web portal Design/Development & Deployment	
Duration	12 to 14 weeks
Fixed fee cost	$15,000
For Content Migration and Review (Considering 500-550 Pages)	
Fixed fee cost	$5,000
For Training	
Fixed fee cost	$7,500
Total Project Cost	$27,500
Post deployment support (Optional)	
Duration	Monthly
Approximate Cost	$1,200

* Above estimates are high level and for budgetary purposes only.
This is based on our understanding as on date and assumptions made.
The cost for procuring APIs or software licenses, if any, will be borne by CITY OF ASHEVILLE.

Numbers of Revisions that are included:

AK Systems offers to provide 2 revisions after the first UAT release.

AK Systems will provide you two months of free Bug support after final release of upon completion of UAT

* Note – Anything exceeding the efforts will be discussed with CITY OF ASHEVILLE and will be charged at an HOURLY RATE of 20 USD per hour.

This may differ depending on final scope of work. Except the scope of work is change, there will be not be any incremental fixed or variable cost to be incurred by CITY OF ASHEVILLE in future based on our proposal.

Any unexpected expenses will be discussed with and approved by CITY OF ASHEVILLE before being incurred. If any issues arise which materially impact our estimated fees or the projected schedule or if we are requested to provide additional services which are outside the project scope outlined in this proposal, we will obtain CITY OF ASHEVILLE approval through a change order process. If we are unable to reach agreement on a change order, AKS will only be required to perform services within the scope of this proposal, consistent with the stated conditions and assumptions.

We look forward working closely with CITY OF ASHEVILLE. If you have any questions or comments regarding this proposal or related matters please call me at (732) 393–1011 x512.

Thank you.

Sincerely;

_____
Prateek Tiwari
Account Manager
AK Systems Inc

APPENDIX

AKS project management methodology and approach

To provide our CITY OF ASHEVILLEs flexibility of realigning their business requirements during software development is one of our integral parts of software development approach. We believe in a phased approach, allowing our CITY OF ASHEVILLEs to evaluate and test the software development in iterations rather than at the end of the whole development phase. This gives them the flexibility not only to start test at a very early stage but also evaluate the business requirements.

Methodology

As a custom software development and integrator company, we are on the path of using Agile Scrum methodology for all our current and future software development work.

Agile Scrum: Scrum is a way for teams to work together to develop a product. Product development, using Scrum, occurs in small pieces, with each piece building upon previously created pieces. Building products one small piece at a time encourages creativity and enables teams to respond to feedback and change, to build exactly and only what is needed.

Practices

We follow object-oriented software design and development approach. To further make of our code flexible and reusable, we use design patterns wherever required.

Design Pattern: Design patterns are solutions to software design problems you find again and again in real-world application development. Patterns are about reusable designs and interactions of objects.

We anticipate the deployment of a Project Kick-off phase of the overall project, where all the necessary analysis is undertaken to allow the project to be planned. We recommend that the Project Kick-off be considered as a stage in its own right i.e. it should be formally given approval to go ahead and should be planned and budgeted for as a phase of the project. The single most important piece of documentation produced at this stage, and probably during the course of the entire project, is a Project Kick-off Document.

The Project Kick-off Document begins with validating the Business Case, and builds upon it using the information and analysis data produced during the kick-off activities. It will look in detail at risks and a plan to deal with them will be one of the outputs of the kick-off. During this period a thorough analysis will be taken and recorded of how any business processes, that the project will affect, are structured, staffed, and run. Measurements will be taken and recorded at this point that will be key or critical success factors of the project. This may be noted in terms of revenue, adoption rate, active users, stored data, reports delivered, or other such targets over a specific period of elapsed time.

The Project Kick-off document will include:

- Details of project goals and objectives and the critical success factors by which achievement of the objectives will be judged.

- Details of the project scope in relation to the organization, resources, functional areas and time as well as a statement about any related areas that are considered to be out of scope.
- Details of identified risks and any constraints affecting the project.
- Details of any assumptions made about the project.
- Details of any deliverables about the project.
- Details about acceptance criteria and sign-off of the project.
- Architecture Design – High-level description and framework of overall system architecture, including hardware and software components, sub-systems, interfaces and behaviors
- Software Design – Low-level description of a specific software component using industry accepted standards, languages and best practices

A few examples of assumptions that need extra attention at this stage are:
- 3rd party resource allocation and reporting.
- 3rd party installation and provisioning of software development and test tools.
- Response times for decision making for all project team members.
- Out-of-scope tasking resolution process etc.

The Kick-off phase begins with an idea for a project. The goal of this phase is to write a project plan according to which internal or external financing can be requested. Activities in this phase include:

- Elaborate the concept.
- Examine the base of support.
- Contact possible partners.
- Prepare an initial global estimate of the control factors for the project.
- Prepare a concrete estimate of the control factors for the definition phase.
- Establish project boundaries.
- Prepare a project plan.
- Apply for funding or establishing contract agreements with possible customers.

Deliverables of the initiation phase:
- Approved and funded project plan with Project Fitness Checklist

Project Fitness Checklist
- Does the Project Kick-off Documentation correctly represent the project?
- Does it show a viable, achievable project that is in line with corporate strategy?
- Is the project management team structure complete, with names, authorizations, sign-offs?
- Have all the roles been considered and are they backed up by agreed role descriptions?
- Are the relationships and lines of authority clear?
- If necessary, does the project management team structure say to whom the Project Board reports?
- Does it clearly show a control, reporting and direction regime that can be implemented, appropriate to the scale, risk and importance of the project to corporate management?
- Do the controls cover the needs of the Project Board, Project Manager and Team Managers and satisfy any delegated assurance requirements?

- Is it clear who will administer each control?
- Are the project objectives, approach and strategies consistent with the corporate social responsibility directive, and are the project controls adequate to ensure that the project remains compliant with such a directive?
- Has consideration been given to the format, frequency of reporting, participants, and ownership of the Project Kick-off Documentation?

AKS testing strategy

Test strategy details the QA process AKS team will follow to perform different types of testing for its CITY OF ASHEVILLEs:

1. **System Testing**: System testing is done to validate all the functionality are working as per the requirements and an end-to-end testing is done to check the CITY OF ASHEVILLE application/system works properly with other systems and tools.

2. **User Interface Testing**: This testing will be done as a part of system testing phase, where tester will validate the UI part of system for field validation, position of objects. User-interface testing is often referred to as graphical user interface (GUI) testing.
No. of cycles of testing = 3

3. **Security and Access Control**: Security testing is done to check that the system works properly based on:
   - Security guidelines.
   - Checking the log files for access violation

4. **Regression Testing**: Regression testing is done to validate all the functionality works fine for any changes made to the system. The selection of functionality for regression testing will be done based on the impact analysis done by QA team for every cycle of testing after discussing with Project Manager. Regression testing test cases will be the subset of system test case.

Exploratory	No
Manual	Yes
Automation	No
White Box	No
Black Box	No

This cycle of testing consist of retesting of defects for any release and this will vary based on the number of defects identified.

5. **Testing Priorities:**
   - General functionality
   - Accuracy of data
   - Reliability of the system

Phased Approach for Web Migration Project (Sample)

Assessment

- Financial Assessment (TCO calculation)
- Security and Compliance Assessment
- Technical Assessment (Classify application types)
- Identify the tools that can be reused and the tools that need to be built
- Migrate licensed products
- Create a plan and measure success

Proof of Concept

- Test all potential web platforms
- Build a pilot and validate the technology
- Test software on the web

Moving Data

- Understand different storage options in the web
- Migrate fileservers
- Migrate existing database

Moving Apps

- Define migration strategy
- Validate all SLA's

Optimization

- Optimize usage based on demand
- Improve efficiency
- Implement advanced monitoring and telemetry
- Decompose relational databases