

Bosnia and Herzegovina 2030: The Window to Change

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SUMMARY

This text presents an attempt to describe Bosnia and Herzegovina's challenging political, economic, and social situation and define a vision of possible development for the next decade. Authors share a vision of Bosnia and Herzegovina 2030 knowledge-based society and economy and try to outline a step in order to achieve this vision. The possible future is a country pioneering digital healthcare and developing its infrastructure in such a way to become a destination for researcher of a new personalized therapies, telemedicine solutions, and medical devices.

Keywords: Bosnia, Change, Herzegovina, 2030.

SAŽETAK

Ovaj tekst predstavlja pokušaj da se opiše izazovna politička, ekonomska i socijalna situacija Bosne i Hercegovine te definiira vizija mogućeg razvoja za sljedeće desetljeće. Autori dijele viziju društva i gospodarstva utemeljenog na znanju Bosna i Hercegovina 2030. i pokušavaju ocrtati korake kako bi ovu viziju ostvarili. Moguća budućnost je zemlja koja je pionir u digitalnom zdravstvu i razvija svoju infrastrukturu na način da postane odredište za istraživače novih personaliziranih terapija, rješenja telemedicinske i medicinskih uređaja.

Ključne riječi: Bosna, Hercegovina, Promjena, 2030.

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WHAT WE ALL KNOW

Nowadays, thinking about future of Bosnia and Herzegovina puts so much pressure on average citizen. Due to a chaotic situation in the country, facing numerous political, social, and economic difficulties the fear of repeating the history is raging more than ever. The leaders are more focused on their self-gain than into leading the country and their citizens toward the future. Bosnia and Herzegovina is a country with significant natural resources, great strategic geographic position, rich history, and talented and hard-working people. This is a sentence very often heard and read in media, but unfortunately usually followed with the following facts: investments in technological research and development from governments are negligible, industrial products with high added value are rare considered as an exception. Educational system is old-fashioned, unable to keep pace with modern trends. Essential reforms of the educational system are not occurring for years, making the gap between real needs of the labor market and skills possessed by fresh graduates larger each year. University education is controlled by entities and cantons, thus preventing state-level control of universities. This enables opening of large number of universities with questionable level of education. In addition, public sector does not promote employment of graduates from esteemed universities. In certain sense, it demotivates young people to study at the esteemed universities. As seen now, Bosnia and Herzegovina is middle-income

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country, import-oriented, industry almost demolished, unemployment rate very high, especially among young generation. Therefore, tens of thousands of young, educated, and productive people leave their home country each year. It seems at the moment that Bosnia and Herzegovina of 2030 is country of elders.

THE POWER OF VISION AND CHANGE

"Every bold idea, at first, seems like madness..." Johann Wolfgang von Goethe

Leonardo Da Vinci dreamt of flying, and now the average number of flights a day worldwide is a hundred thousand. Nikola Tesla imagined a world with smartphones, the internet, and wireless communication and now we cannot think about living without these inventions. Successful people have high expectations and bold visions.

In business, powerful visions clearly indicate the long-term perspective and the future environment in which it functions. Shared vision is a shared heart, a shared leadership, and a shared organization. So how can this philosophy be used to turn the situation around for the country? Can we make this situation turn around? Kagame's Rwanda may be the most inspiring success story that shows how a clear vision, along with decisive implementation led this torn-apart country on a journey to unity, reconciliation, and prosperity.

Bosnia and Herzegovina has always been, even in the dark times, a country where everyone felt welcomed. Sephardic and Ashkenazi, Bogomils, Orthodox, Catholics, Protestants, Muslims, anti-fascists, migrants know this—all good people who have found a safe haven and place to live together in this heart-shaped country for centuries. Experts agree that due its pronounced multiculturalism, Bosnia and Herzegovina is the miniature union within the union—so how can our differences and similarities coexist and push the country forward like never before? Nothing will happen by itself, so let us shape a vision—a dream, take action, and plan!

As free-thinking people let's imagine what kind of country—our country, we want to have for ourselves and then let's get organized to take action that will enable dream become true. Let's not wait for others to tell us what we want. Our problems can't and won't be solved by anyone else than ourselves—not European Union, the United States of America, the United Nations, nor the rest of the world! The power of change is in our hands! If we do not use that power for realization of courageous and encouraging visions, it will be difficult to avoid future filled with street riots and dissatisfied population. Without a vision, the country is condemned only on survival and long-term failure.

BOSNIA AND HERZEGOVINA 2030

"For those who dare to dream, there is a whole world to win."
By Dhirubhai Ambani

Imagine that you have just opened a portal to the future. You are observing Bosnia and Herzegovina of the 2030 as it celebrates its third successful year as a full member of

the European Union. Local population has left behind political disagreements followed by a national prefix and dedicated themselves to economic prosperity, now living in a small but rich area. Nowadays Bosnia and Herzegovina is depicted as eco-friendly society, living in semi-rural settings relatively close to large and rich cities. It is seen as IT valley for the inventions in healthcare, personalized therapy, and education.

Bosnia and Herzegovina is still heart-shaped country. When you arrive at the border to enter Bosnia and Herzegovina humanoid robot scan visitors, check the passports, and approve entrance. For all visitors in digital passports and phones QR code was assigned with all country's bio-digital tourism information. Its rich rivers, forests, and meadows have not only become a center of continental tourism but also the cornerstone of the growing tourist trend "*return to nature*." Sutjeska National Park is filled with Chinese tourists observing another live reconstruction of partisan classic films. Arab tourists enjoy their time in the Una National Park, immersed in its beautiful natural surroundings, where the river still proudly draws the lines of that same heart that permeates so many different cultures in such a small, and yet rich area. It has been widely debated on whether the Olympic Mountains should again be nominated for the Olympics, because the infrastructural capacities of these mountains have long been regional leaders in this type of tourism. Herzegovina seems to have become the "*new Tuscany*" because many villas and hotels are being built, attracting many wealthy Europeans to whom Herzegovinian vineyards and sunny days are a better setting than the cold and rainy European north. New neighbors from the United Kingdom, France, the Netherlands, and other countries are especially impressed by the knowledge they acquired during a 2 hours drive which allowed them to see and feel high coniferous forests, beautiful and clean rivers, and endless karst fields overgrown with vineyards spreading all the way up to the sea. All phenomena situated here, in one country.

The recent constitutional reform has left behind a story of endangerment at anytime and anywhere, and has made this state and its administration very efficient. According to the latest research by a business magazine, in BiH, administrative permits for starting a business are obtained within 24 hours, all through online applications, which is considered to be a new record. That is why it is not surprising that WV decided to come to Goražde, Mercedes to Široki Brijeg, and Amazon brought its business to beautiful Banja Luka. Also, we are envied by Evian, Jana, and other water producers because in a short time we have become a "*European source*" of drinking water, which today, bearing in mind the cleanliness of the environment like never before, we jealously guard. Many of our people are returning, ones who left the country in large numbers in the early 2020s. It is they who are building new drinking water plants and other economic entities due to which our overall unemployment rates have reached their historic peak at 3%. Mate Rimac, our own Elon Musk, has

launched its first mega factory Rimac Inc. in his hometown of Livno, which will soon be one of the largest electric car factories in Europe and the world.

It is 2030. Bosnia and Herzegovina is an oasis of the European IT sector, the most attractive destination for digital nomads, a place where a new technological company starts to operate almost on daily basis, a magnet for Bosnian diaspora so that whole families return to their homeland leaving Western Europe that attracted them in the past. It is seen as IT valley for innovation of modern diagnostic devices, telemedicine systems, and artificial intelligence (AI) services. Not just the software, European countries transferred technologies and productions in Bosnia and Herzegovina, so the latest healthcare discoveries are manufactured here. Due to accelerated development of technical, biotechnical, and medical sciences in Bosnia and Herzegovina, worldwide technological and medical giants operate in the country, moving their European headquarters from Western Europe to Bosnia and Herzegovina.¹

All products in Bosnia and Herzegovina became services. We don't own anything (cars, houses, appliances, or any clothes). Shopping is a distant memory in the city, whose inhabitants have cracked clean energy and borrow what they need on demand.

According to the Transparency International Corruption Index, Bosnia and Herzegovina is in the top rankings of lowest corruption indices in terms of corruption perception, which was the main reason for the large number of foreign investments in the past few years.

Do you think this is just an impossible dream? If other countries in the world could, why not us? The most important preconditions are reconciliation, opening our resources to the world, and fostering the entrepreneurial climate by creating conditions for public-private partnerships to drive our attractive resources.

THE JOURNEY TO BOSNIA AND HERZEGOVINA 2030

"Success is a journey, not a destination. The doing is often more important than the outcome" by Arthur Ashe

The vision and strategy are not enough to succeed. Overall process is important in order to change the value system—the culture of behavior and the way of thinking. To be successful in this process we must adopt goal-getter character as a society. It means that our political, economic, and cultural environment needs to build self-awareness, courage, and readiness for complex and challenging projects as well as to adopt winning spirit with which this global change is possible. The vision Bosnia and Herzegovina 2030 can be expressed with the following goals:

- Bosnia and Herzegovina brand: a union within a union.
- Bosnia and Herzegovina: the heart of pure, pristine, and untacked nature.
- A country of innovation and knowledge.

- A country of youth and change.
- Homeland of digital healthcare and advanced treatments.

To achieve these goals, as a nation we must be able to change our existing views and goals and to be inventive. To communicate these characteristics, a strong leadership is needed.² The vision must come, or at least be accepted from the holders of the power in the country. Regardless on the change in the power holders, the vision must persist, and measures to implement should persist the change. An essential rule of a good vision is focus. Priorities may change over time but without focus a goal becomes unreachable. We need to think about the country as corporation. A corporation which has its strategy, mission, vision, goals, projects, and programs to achieve them. In addition to classic diplomacy, it must develop a global brand—an identity to attract investment as well as international political environment—to support these investments. Research shows that Bosnia and Herzegovina is poorly known globally. If it is mentioned usually, it is in the 1992–1995 war context. This is proof of weak image and lack on effort to systematically promote positive image and examples from the country. The re-branding should be done based on our main strategic advantages, especially important to the success of this vision:

- The country of multicultural oasis—we respect differences. We build on diversities.
- The heart-shaped country—experience the raw nature!
- The country to creativity and knowledge—a better learning future starts here.

Let's try to complete the outlines of the Bosnia and Herzegovina 2030 to show what needs to be done for its realization.

Everything starts with the education. Once a person is born, the learning starts. We first learn to crawl before we learn to walk. Therefore, to create stimulating climate for innovation and change it is necessary to strengthen our education system, create a critical mass of awareness and desire to change. The knowledge society is built on human capital. This means that our educational system and job market's supply and demand needs are synchronized. Bosnia and Herzegovina is no longer an exporter of educated people. It has, in fact, become a migration destination country not only for people with Bosnian origins who had spent most of their adult lives abroad, but also for other highly qualified workers who look for new opportunities to settle in an eco-friendly society, often in semi-rural settings relatively close to large cities. Some urban areas are also attractive because of the high concentration of employment and other opportunities. The trend opened up many opportunities. It boosted knowledge transfers, investments, and access to advanced technology, improving the overall stability and long-term development opportunities in the country and in the whole region. Universities in Bosnia and Herzegovina are rapidly developing educating innovators. Students are taught to solve problems of the present and the future, while

Sarajevo has become a center of the European educational tourism. There are almost hundred thousand students living in the city. Majority of the educational programs in Sarajevo's universities are offered in English, attracting students from all parts of Europe, Middle East, and even Africa. This has transformed the country's capital to a city of youth. Education is now a state-controlled activity, recognized as one of the key elements for the country's progress. This has dramatically improved quality of all levels of education in other Bosnian and Herzegovinian cities as well. Those who prefer living in smaller cities choose Mostar, Bihać, Tuzla, and Zenica as their city of education. Universities are supported by the state government to establish modern educational programs each year, thus keeping the skills offered at universities up to date with industrial needs. Bosnia and Herzegovina schools are now free of segregation and can provide children enough skills and competencies to tackle the challenges of living in the 21st century. Higher education institutions also continue to build instruments and develop various mechanisms to prevent corruption and to strengthen ethics, transparency, and integrity in higher education. The capacities of teachers, school management, and staff are now fit to promote objectives of inclusive and quality education as a public good.

Cooperation between industry and universities is very dynamical, and students typically spend at least 2 months each year working in industry. All universities have technological parks that give opportunity for fresh graduates to start their own businesses, providing them with legal, economic, and technological support in the starting phase of their companies. Thus, there are tens of start-up companies appearing in Bosnia and Herzegovina in the fields of IT, robotics, AI, bioengineering, genetics, and medicine.

The labor market participation of young people in Bosnia and Herzegovina has exceptionally grown. The quality of education and training has significantly improved and adjusted to the growing market needs, and provides minimum guarantees for favorable job search outcomes. As a result, the connections between youth's perceptions on quality of life, their employment status, and propensity to consider settling in the country are balanced.

As a consequence of the education-labor market synchronization public administration jobs won't be so attractive anymore. This will lead to crucial reform and that is lowering administration burden. This is a significant turning point since the new model will be adopted. Officials and administration will become servants of citizens not their masters. By decreasing administration, the country will make significant savings that can be further invested in research and development. With these funds the government will be able to promote establishment of private research institutes by removing tax obligations for them for the first 3 years of operation. This will attract world-class researchers and research groups from western countries to start their research facilities in Bosnia and Herzegovina. Soon, universities and research institutes in Bosnia and Herzegovina are coordinating tens of research projects funded by EU and

different global companies. Hundreds of millions of euros are attracted to the country by these projects, having powerful impact on the state budget. The innovation environment, as a catalyst for the long-term improvement in competitiveness requires financial support in line with the idea that investing in knowledge is the most valuable investment.

FOCUS ON DIGITALIZATION IN HEALTHCARE

Already the exponential growth of digital technology transforms industries including manufacturing, agriculture, health, energy, and mobility. IT companies envisions a future in which satellite networks span every inch of the Earth and a trillion connected devices continuously deliver data to the cloud to be analyzed by AI. Our country has extremely great potentials in medicine, pharmacy, genetics, and other health and natural sciences. The development of newer technologies that improve diagnostics, production, and new therapeutic approaches are continuously putting positive pressure on the healthcare profession in order to follow new modern trends. We need to get involved in world trends with unique offer based on our inherited and created comparative advantages. We will call this digitalization in healthcare strategy. It is about focusing all elements of the education and IT industry and its infrastructure on intensive use of digital technologies, healthy living, and disease prevention. Our education institutions must become a source of skilled professionals.

As early as in high school, student start teaching about digitalization in the healthcare. They teach about the IT systems and how physicians can play an important part in optimizing the system and optimizing the processes and recognizing the value of technology in healthcare. Official 2nd year in the row universities and research institutes from Bosnia and Herzegovina are declared as the best innovation centers in Europe.

Our healthcare institutions will support this strategy through the active use of innovative digital technologies. This means that our healthcare institutions use, in more than 25% of their services, AI solutions with more than 95% of accuracy. A lot of interactions between the patients and the AI-enabled programs are established. It is achieved through the mobile phone or mobile device that tells you where you need to go, who the physician is you need to visit, and what's the next stop. It is also established through some of the screens mounted on the walls. They sense and recognize a particular patient, so when they come near, there is a customized message. Then, when you turn up in the operating theater, the chances are that the surgeon is a robot. The robots are making it in a much more precise way, which will mean far less damage to surrounding tissues, far less invasive surgery, and significantly shorter lengths of stay in hospital.

With the massive volumes of medical data health authorities and practitioners will have to contend with, advanced analytics and machine learning (AI) will be relied on to monitor it all. On the more localized end of things, AI's will be used to analyze patient data for signs of possible health

conditions and predict future ones. This will give health care practitioners the ability to detect problems in advance and diagnose cases with greater speed and efficiency (and with less risk of misdiagnosis). Patient histories will also be much more up-to-date and detailed, and real-time patient monitoring will be readily available for the elderly and people who are at-risk for stroke, heart attack, etc. On the macro end of things, AIs will also be responsible for analyzing worldwide health patterns to track pandemics and the spread of disease. The ability to track disease vectors and anticipate mutations in existing viruses will be all the more important as climate change leads to an increase in the spread of deadly viruses worldwide.

Due to innovative digital sector in healthcare Bosnia and Herzegovina healthcare is a destination for targeted and personalized therapies. Let's explore scientific point of view. Knowledge of the individual genetic profile gives us information about personalized pharmacodynamics and pharmacokinetics and metabolism of all exogenous substances that we take into the body. Advances in pharmacogenomics will allow us to know the rate of drug metabolism for each individual, which gives us information on which amount of drug is needed for the best therapeutic effect of the patient according to the diagnosed disease, with minimal side effects. This would mean that immediately after birth we will know for which diseases we have a genetic predisposition to develop them. Based on that doctors will know which therapy in which amount we need to prescribe according to our genetic profile and needs for ideal therapeutic effect. Because of the above, therapy will be personally prescribed for each of us according to our real needs and genetic profile, probably using 3D printing techniques, or perhaps some other technology that will enable efficient and fast preparation of "our personalized therapy." It is this approach that will change many important principles of the pharmaceutical industry, which of course starts with education itself, which will have to adapt rapidly to new trends and the labor market, in order to educate future pharmacists who will implement new knowledge and work intensively. Also, the pharmaceutical industry and drug production technology will, in accordance with the new personalized approach to treatment and the dominance of targeted therapy and "smart drugs," initiate very significant reforms and modifications, which will not produce "one drug for all patients" but "one drug for one patient." Virtual pharmacies of the future will always be available to patients thanks to numerous online platforms, enable easier and simpler contact with pharmacists who will be able to give timely advice to each patient, and also enable easy communication with doctors for faster diagnosis, targeted therapy, and faster healing of the patient which is the basic goal.

In conclusion, Bosnia and Herzegovina 2030 is leader in digital health, production of innovative medical solution, and providing personalized therapies. The major strength of the country is its innovative healthcare offering wide

range of services for people all over the world as it has skilled workforce along with potential and innovative industry. The fast transition from research to implementation is enabled due to strong public-private partnerships observed also through private research institutes.

HOW TO GET CAPITAL AND KNOWLEDGE TO REALIZE VISION OF BOSNIA AND HERZEGOVINA 2030?

For a successful journey to Bosnia and Herzegovina 2030 a significant change in internal and external processes in the country needs to happen, affecting every citizen. That is above mentioned system value change. If we want to progress in the future we need to recognize innovation and creativity as qualities in ourselves and our associates. We need to make space for such creative, capable individuals and organizations and support them instead of driving them away. For generation of knowledge-based economy strong connection between universities, research institutes, government, and companies is needed. In a vision everyone needs to be equally recognized.

At the end let us address maybe the most important question: "How to get capital and knowledge to realize vision of Bosnia and Herzegovina 2030?" For the realization of this journey several sources can be used:

- **European Union**—the European Union is already making strategies which strengthen their cooperation with Western Balkan countries. As it seems it is up to the country to find the niche in which development should take place and build a strong program to achieve this. In other words, a vision and a dedication of a country is needed and everything needs to be based on real resources a country has.
- **Internal funding**—redistribution of the budget at all levels to direct money that encourages the focused development strategies.
- **Industrial and economic cooperation with other countries/regions**—favorable conditions for cooperation with China and United Arab Emirates should be developed as these are countries with high investment potential.
- **Diaspora**—our diaspora can ensure strong inflow of knowledge and capital needed for achieving the vision.

Some can argue that presented vision of Bosnia and Herzegovina 2030 is a lunatic idea. This was confirmed by Mark Twain as well, but only until the idea actually succeeds. The point is to have a vision and make action to cause the change as "a man without a vision for his future always returns for his past."

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